



Prehospital Care Treatment

GUIDANCE DOCUMENTS

2007

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Treatment Guidelines 2007

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INTRODUCTION

These field treatment Guidelines are the standards of care for the pre-hospital care providers who provide care under the Medical Direction Navapache Regional Medical Center. The purpose of these Treatment Guidelines is to provide uniform pre-hospital care. They are directed towards all 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 those conditions in which the delay of treatment might increase morbidity and mortality. Once the patient enters the E.M.S. system, meaningful life-saving interventions should be immediately initiated.

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

The third goal of pre-hospital care is to provide entry into the E.M.S. system, initial stabilization, and safe transport to an emergency medical facility for those patients whose conditions are not immediately life or limb threatening.

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

To achieve the above stated goals of pre-hospital care, the EMT must be skilled in patient assessment. He/she must be able to recognize those conditions where on-scene intervention is necessary. Assessment is the tool to accomplish this goal.

Assessment must be rapid, succinct and goal directed. Main emphasis is on the primary survey, with immediate action taken for all interventions identified. Secondary survey should not delay either life saving interventions or transport.

MEDICAL CONTROL

It is important to recognize that emergency care rendered in the pre-hospital environment, even though performed by an emergency medical technician, nurse, or other qualified person, remains the responsibility of the On-line or Base Hospital 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 judgement are equally important. Since individual situations may require variance from these guidelines, the final authority is

the independent medical judgement of the medical control physician. Also, it should be understood that skill levels of individuals will vary, and the on-line medical control physician may find it necessary to vary from these guidelines.

STANDING ORDERS

Standing orders are those interventions, approved by the Administrative Medical Director, which may be done immediately, prior to radio contact with the On-line Physician. 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. If time is not a critical factor, radio contact is required prior to carrying out orders.

The following procedures may be initiated by pre-hospital care personnel consistent with training, experience, and authorized treatment capabilities, while measures are being taken to contact Medical Control, to relieve immediate life threatening situations.

1. Advanced airway control and maintenance, including oxygen administration.
2. Stabilization of hemodynamic status (without delay of transport) through prevention of further volume loss, IV administration (Intraosseous as approved by the medical director of each base hospital, and consideration of the P.A.S.G. Remember that the use of the P.A.S.G. is controversial. Whenever possible consult Medical Control before inflating).
3. Administration of first line A.C.L.S. procedures as outlined in the Chest Pain and dysrhythmia Guidelines.
4. Administration of appropriate drug therapy as outlined in the Anaphylaxis Protocol.
5. Administration of appropriate drug therapy as outlined in the Altered Level of Consciousness/Unknown Etiology Protocol.

VERBAL ORDERS

Verbal order means that the procedure requires a specific order from the On-line Physician via radio or telephone prior to performance. In Any situation where procedures are performed, which by these treatment guidelines require a verbal order, and such verbal order 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. Communication with the Base Hospital should be established as soon as possible in such incidents.

DEATH PRONOUNCEMENT IN THE FIELD (DEAD ON ARRIVAL)

Death pronouncement in the field may be utilized when either of the following categories apply:

1. Obvious - decapitation/decomposition (Requires no physical assessment)
2. Apparent - apneic, pulseless, asystole in 2 leads, dependant lividity, rigor mortis (requires minimal patient assessment).

If one decides not to give C.P.R. to a pulseless, apneic patient, one is essentially presuming that patient to be dead. This decision is to be made with medical direction from your On-line Physician whenever possible. Rhythm Strips should be made and forwarded to the base station whenever possible. C.P.R. has a low yield in trauma victims in cardiorespiratory arrest. Nevertheless, it may be warranted if it does not divert equipment and personnel from more salvageable victims. Advanced life support procedures instituted at the scene may be inappropriate when one is dealing with multiple victims. Please note that the pulseless, apneic, patient where transport to any kind of Advanced Cardiac Life Support will be measured in hours or days instead of minutes, requires a realistic assessment of likely patient outcome after lengthy C.P.R. As a general rule of thumb, patients who have not responded to 30 minutes of ACLS are considered non-viable.

If a valid advanced directive is present, no resuscitative measures are needed. An information patch should be made to the on-line physician if possible.

If an advanced directive is not valid, or you are advised that there is one and it is not available, begin BLS maneuvers and contact the On-line physician.

MEDICAL CONTROL OF A.L.S. AT THE SCENE

General Principles:

When an A.L.S. squad, 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 protocol. 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 paramedics 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, these treatment Guidelines will be followed.

ALS CALLS

A.L.S. providers shall contact the On-line physician for medical direction in the following circumstances, and under all circumstances where A.L.S. Guidelines need to be instituted.

MEDICAL CASES

- Chest Pain**
- Shortness of breath**
- Hematemesis, melena, or hematochezia**
- Altered Level of Consciousness**
- Loss of consciousness (syncope, seizures)**
- Possible drug overdose or ingestion of poisonous substances**
- Recent change in mental status**
- More than one acutely ill person**
- Painful, cold, pulseless, extremity**
- Acute abdominal pain**
- Terminal malignancy in distress**

TRAUMA CASES

- Motorcycle, auto vs. pedestrian or bicycle accidents**
- Suspected fractures of femur, pelvis, spine, or skull**

Extremity wounds with distal neurological and/or vascular compromise
Head injuries with history of loss of consciousness or presently impaired mental status
Penetrating wounds of head, neck, chest, abdomen, or thigh
Blunt trauma to abdomen or chest wall
Burns Injuries (>20% BSA)
Significant acute external blood loss
Water accidents and near drownings
Extrication problems
Multiple casualties

OBSTETRICAL-GYNECOLOGICAL CASES

Vaginal Hemorrhage
Childbirth
Pregnancy with abdominal pain

PSYCHIATRIC CASES

Suicide (attempts or verbalization)
Hallucinations with behavioral problem
Violent or dangerous patients (result of mental disorders)

GENERAL CASES

Signs of shock
Hypotension (systolic blood pressure of 90 or less in an adult)
Altered mental status
Weak, thready peripheral pulses
Cold, clammy extremities
D.O.A. patients
Any patient who, in the opinion of the A.L.S. personnel, would benefit from Base Hospital consultation.
Any patients with suspected medical or traumatic problems of an A.L.S. nature, who refuse treatment or transportation to a hospital.
Abnormal body temperatures
When there is a physician on the scene who wishes to take control of patient care.

A.L.S. RESPONDERS MUST PATCH IN ANY QUESTIONABLE OR UNUSUAL SITUATION

Environmental hazard
Security problem
When disagreements arise between responding E.M.S. providers or with law enforcement

COMMUNICATIONS

Radio or phone contact with the base hospital is necessary on all A.L.S. calls. Medical control contact on B.L.S. calls is at the Base Station's discretion. Regardless of the level of provider on scene, with critical patients, radio or phone communication should be made after the initial succinct primary survey, and after emergency standing orders are carried out.

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.)
4. Number of patients
5. Age and 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. Allow for a five-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 base 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.
8. Remember that many people are listening to your radio communications, so avoid use of patient names and unprofessional comments.
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.

TEN MINUTE RULE

The Ten Minute Rule simply states that when communication with the base hospital is not possible from the critical patient's side, the field providers should have the patient in the ambulance within ten minutes, so that hospital contact can be made. Since assessment and treatment of A.B.C.'s in most cases can be accomplished within ten minutes, running back and forth from the patient to the ambulance in order to communicate is an unacceptable alternative. There are exceptions to the Ten-Minute Rule such as when extrication problems exist.

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 Station. Any situation where procedures are performed, which by these treatment guidelines require a verbal order, and such verbal order is not obtained because of failure to establish radio contact, will be reviewed individually as to their appropriateness. You must be sure clear cut indications for procedures 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 or emergency department physician assistant or paramedic 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.
3. Communications with A.L.S. providers shall be completed in a timely, organized manner.
4. When a patient is to be transported to another receiving facility, immediately communicate all pertinent patient management information to the responsible physician or nurse at the receiving facility. If the receiving facility is also a Certified Base Hospital, direct communications with the A.L.S. unit rendering that care may be transferred to the receiving medical control authority at the discretion of the sending medical control authority, and with the knowledge and consent of the receiving medical control authority.
5. When relaying verbal directions/orders to field units, the intermediary shall identify by name the emergency

physician giving the orders transmitted.

BODY SUBSTANCE ISOLATION

All patients should be considered potentially infectious. Standard precautions should be followed in accordance with C.D.C., O.S.H.A., and base hospital guidelines.

TRANSPORTATION

The patient should go to the medical facility which best meets his/her medical needs. If not the closest hospital, this decision requires a verbal order when the patient is being transported by ground. The patient's choice of hospital should be considered when such a request does not adversely effect 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.

The patient's condition should not be made worse by the mode of transport, (e.g. consider elevation increase, bumpy roads, etc.).

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.

See Trauma Designation on page 23.

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 physician prior to leaving the sending facility. 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, and other pertinent information.
3. EMS personnel, when acting for an agency with a specified Base Station continues to operate under control of that Base Station. Any orders given to such medics on interfacility transfers must be in accordance with their treatment guidelines and must be reviewed and approved by their 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 E.M.T. or Paramedic, that patient must be accompanied by an R.N. or Physician as indicated by the patient's condition.

AT SCENE TRANSFER OF CARE

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

1. If A.L.S. care has been initiated, an A.L.S. provider 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. If the patient may exhibit cardiac problems enroute, and there is an A.L.S. provider at the scene with cardiac capabilities, that level of provider must accompany the patient to the receiving facility.
4. If there is a question as to which E.M.S. personnel member should transport the patient (E.M.T., I.E.M.T., Paramedic), the base hospital physician should be contacted and given the information to make an informed decision.
5. Upon transfer of patient care, pertinent field information should be relayed without unnecessarily delaying transport.
6. Refer to the Emergency Interfacility Patient Transportation and Physician Intervener at Scene Guidelines for further information.

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 Station. 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 skills.

REFUSAL OF TREATMENT AND/OR TRANSPORT

Once committed to the care of a patient, which may include identifying the need (without actually examining the patient), all health care professionals should follow up and do the utmost they can for the patient.

The following statements are points to consider when a patient is refusing treatment and/or transport.

1. Good medical judgement should always prevail. If an error is made, it should be made in favor of proper treatment for the patient.
2. Your attitude must remain professional, even in the face of the most hostile patient.
3. Your communication skills are the most important tool you have. If the patient is not responding to you in a positive manner, consider changing places with your partner and letting him/her try.
4. If in your opinion a patient who is refusing treatment should receive medical attention, never leave the patient without contacting your base hospital and discussing the situation with the physician on duty. Use all your resources. Consider requesting the mental health resources in your community to assist your efforts or possibly commit the patient.
5. The patient has rights. You can only consider transporting the patient against his/her will if you can determine that the patient is unable to make an informed decision, such as a minor whose parent or guardian is not present or a person who cannot understand why treatment is necessary or the risks of not accepting treatment. Such factors as mental illness, serious injury or illness, drugs and alcohol are examples of factors which could impair a person's ability to understand the nature and consequences of accepting or rejecting medical help. Have the police at the scene assist you.
6. If the patient refuses treatment, against all advice, have the patient sign a refusal of treatment form. The refusal of treatment form should have the information concerning your assessment of the patient and the possible problems that could occur from refusing treatment directly on it. Make sure it is dated.
7. For the patient who needs medical care, but refuses, good documentation - history, physical, and refusal of service forms - is extremely important and may protect the medical team should legal questions arise. The following information should be documented.

- a. Patient name and age
- b. Chief Complaint
- c. Vital signs
- d. History of present illness
- e. Description of mental status
- f. Physical assessment and (recommended care)
- g. Reason patient is refusing care
- h. Specific risks of refusing care
- i. Patient verbalizes understanding of risks
- j. Name of patch physician if patch is possible
- k. Names and signatures of witnesses, patient, other agency personnel, if possible
- l. Time patient left & patient condition
- m.. Brief statement as to why any or all of the above information is unobtainable
- n. Statement verifying risk of refusal was explained to patient and the patient understood these risks

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 verbal order. 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.
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 Guidelines and the use of the nationally recognized Incident Management System 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. Call for additional resources:
 - a. From your agency;
 - b. Consider:
 - (1) Aircraft assistance
 - (2) Mutual aid
 - (3) Specialized needs (i.e. Haz/Mat, School buses, Law Enforcement 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 hospitals.
5. When additional resources become available:
 - a. Assign per I.C.S. (i.e. Triage, Transportation, Staging, Safety, etc.).
 - b. Start/Triage patients
 - * Immediate(Red)= Most critical (To be transported first)
 - a. **R**espiration-over 30
 - b. **P**ulse-No Radial Pulse
 - c. **M**ental Status-Unable To Follow Simple Commands
 - * Delayed (Yellow) = Moderately critical
 - a. other patients unable to walk on their own
 - * Minor (Green) = Least critical
 - a. Patients that can walk on their own.
 - * Dead/Dying (Black) = Obviously dead or determined to be non-salvageable with resources available.
 - a. No Resp. After Head Tilt/OPA

- c. Provide for scene safety and 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. Set up assembly areas for Immediate, Minor, and Delayed:
 - a. Mark areas with flags or tape with color designation for ease of locating proper areas.
 - b. Move patients to proper assembly area.
 - c. Leave Dead/Dying victims where they are, if they are obviously dead and not in the way; use resources to help those patients who are viable.
 - d. Treat patients in assembly 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 patients.
- 8. Ambulance 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 therapy of choice in situations of hypovolemia is to stop volume loss and initiate volume replacement. Use of the P.A.S.G. to stabilize pelvic and lower extremity injuries is an accepted practice. Application of the P.A.S.G. should not delay patient transport. Indications for use of the P.A.S.G. vary, but, in general, the following apply:

1. Systolic BP of 90mm/Hg or less with accompanying symptoms and signs of shock when the presumed cause is hypovolemia and fluid therapy is not able to be established or is not effective.
2. For stabilization of presumed pelvis and lower extremity fractures.
3. Consider prophylactic application (without inflation) in situations where the development of hypovolemic shock is a potential (i.e. multiple trauma) with prolonged transport.

Contra-indications to the use of the P.A.S.G. are:

1. Pulmonary edema
2. Penetrating wound of the chest.

Conditions requiring limited use:

1. Pregnant patients (inflate leg compartments only).
2. Patient with an impaled object (do not inflate section over object).
3. Patient with open wound to abdomen with evisceration or organs visible (inflate leg compartments only).
4. Patient with compromised breathing for any reason (don't exacerbate by inflating abdominal compartment).

NOTE: A P.A.S.G. inflated at a low altitude or in a cold environment will increase pressure when flown or moved to a higher altitude or warmer environment, and vice versa. You must monitor P.A.S.G. pressure and patient BP constantly! Keep PASG pump readily available with patient.

DEFLATION: When the P.A.S.G. has been inflated, they may be deflated only under a physician's direction. **SUDDEN DEFLATION MAY RESULT IN A PATIENT'S DEATH!**

TREATMENT GUIDELINES

MEDICAL-GENERAL

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: question as for Chief complaint.
3. Relevant past medical history
4. Allergies
5. Medications and drugs: chronic
6. Survey of surroundings for evidence of drug abuse, mental functioning, 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, F.B. ability to maintain airway

BLS TREATMENT

1. If compromised or absent airway, or patient unresponsive:
 - a) Position the airway
 - b) Insert OPA/NPA
 - c) Suction PRN
 - d) Remove dentures
 - e) Always consider C-spine injury

ALS TREATMENT (BLS TREATMENT PLUS)

2. Consider Endotracheal or Nasal intubation
3. Consider needle or surgical cricothyrotomy S.O. (**Last resort**)

BREATHING:

Assess: Rate, apparent tidal volume, effort, ability to speak, symmetrical movement, breathe 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.

BLS TREATMENT

1. Position of comfort (e.g. head elevated, legs down) when appropriate
2. Oxygen as appropriate (2 liters - 100%)*
3. Assist with Bag-Valve
4. Oximetry if available - oxygen therapy as indicated

ALS TREATMENT (BLS TREATMENT PLUS)

5. Nasogastric tube if stomach distention compromising breathing S.O.

***Use of supplemental oxygen**

Appropriate use of supplemental oxygen requires thought and consideration as does the use of any medication.

The flow rate and method of administration vary with the situation.

Critical patients in extremis require 100 % oxygen i.e. mask with oxygen reservoir inflated. Otherwise oxygen administration should be appropriate to patients needs. Use of the pulse oximeter has greatly simplified the assessment of patient oxygenation and is a standard of care. Less critical patients should be provided with supplemental oxygen to maintain saturation of 95% - 98%. The only exception to this is the patient with chronic obstructive lung disease; in this patient target saturation is 90% - 92%.

CIRCULATION:

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

BLS TREATMENT

1. Control active external bleeding with direct pressure, splint major fractures.
2. IV NS; consider volume support. (If appropriately trained.)

ALS TREATMENT (BLS TREATMENT PLUS)

3. Monitor Rhythm
4. Drug therapy as indicated and appropriate level of training.

VITAL SIGNS

1. Obtain first quantitative set of vitals within five minutes if practical (pulse, blood pressure, respiratory rate, pulse oximetry if available)
2. Repeat according to patient's condition. At least one more set prior to transport or enroute.
3. Note neurological status: monitor level of consciousness particularly. See Neuro Assessment

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. It is readily learned, has little observer-to-observer variability, and accurately reflects cerebral function. Proper patient management also requires observation of other parameters; vital signs, respiratory status, pupillary responses, symmetry of motor function, and sensory deficits.

The following are the important observations to be made as part of neurological assessment in the field. A flow sheet is useful to follow and identify changes rapidly. Do not use poorly understood terminology like: lethargic, semicomatose, semi-conscious, stuporous. Errors and confusion are minimized when precise responses to specific stimuli are recorded instead. For the same reason always record specific responses rather than just numbers of the Coma Scale, even when it is used by protocol in your region. In areas where numerical assignment of scores is not a formal procedure, the observations of the Coma Scale still provide an excellent basis for field neurological examination.

A.	Level of Consciousness:	Glasgow Coma Scale
	1. Eye opening:	
	Never	1
	To pain	2
	To speech	3
	Spontaneously	4

2. Best verbal response	
None	1
Garbled	2
Inappropriate	3
Confused	4
Oriented	5
3. Best motor response	
None	1
Extension	2
Abnormal flexion	3
Withdrawal	4
Localizes pain	5
Obeys commands	6

Total = 3-15 possible

B. 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

C. Eyes:

1. Direction of gaze.
2. Size and reactivity of pupils.
3. Visual Field Loss

D. Motor Function and Coordination:

1. Observe whether all four extremities move equally well.
2. Facial Droop

E. Speech and Language

1. Real words, but slurred enunciation
2. Unable to use correct words and/or unable to comprehend simple questions and commands

F. 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. Applied noxious stimuli must be adequate to the task but not excessive. Initial mild stimuli can include light pinch, dull pinprick, or light sternal rub. If these are

unsuccessful at eliciting a pain response, pressure with dull object to base of nailbed, stronger pinch (particularly in axilla), or stronger rub will be necessary to clearly define your patient's best motor response.

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. A detailed physical exam should not delay transport of the severely injured patient.

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

The head-toe assessment should include these areas whenever merited according to the complaint/injuries of the patient, and the situation at hand.

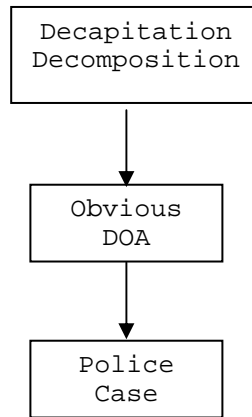
1. Complete set of vital signs.
2. Head:
 - a) Inspect and palpate scalp, face, ears, nose, eyes.
 - b) Check pupils for size, equality, reaction to light, accommodation.
3. Neck:
 - a) Inspect and palpate location of trachea.
 - b) Check jugular veins.
 - c) Palpate cervical spine.
4. Chest/Back:
 - a) Inspect, palpate, auscultate chest and back.
5. Abdomen/Pelvis/Buttocks:
 - a) Inspect, palpate, auscultate abdomen.
 - b) Perform 3 point pelvis check.
6. Lower Extremities
 - a) Inspect and palpate both legs and feet.
 - b) Check circulation, sensation, and motor function in both feet.
7. Upper Extremities:
 - a) Inspect and palpate both arms and hands.
 - b) Check circulation, sensation, and motor function in both hands.

8. Neuro:
 - a) Glasgow Coma Scale
9. EKG Monitoring/12 Lead.
10. Pulse Oximetry.
11. Glucose Determination.
12. History

Dead On Arrival

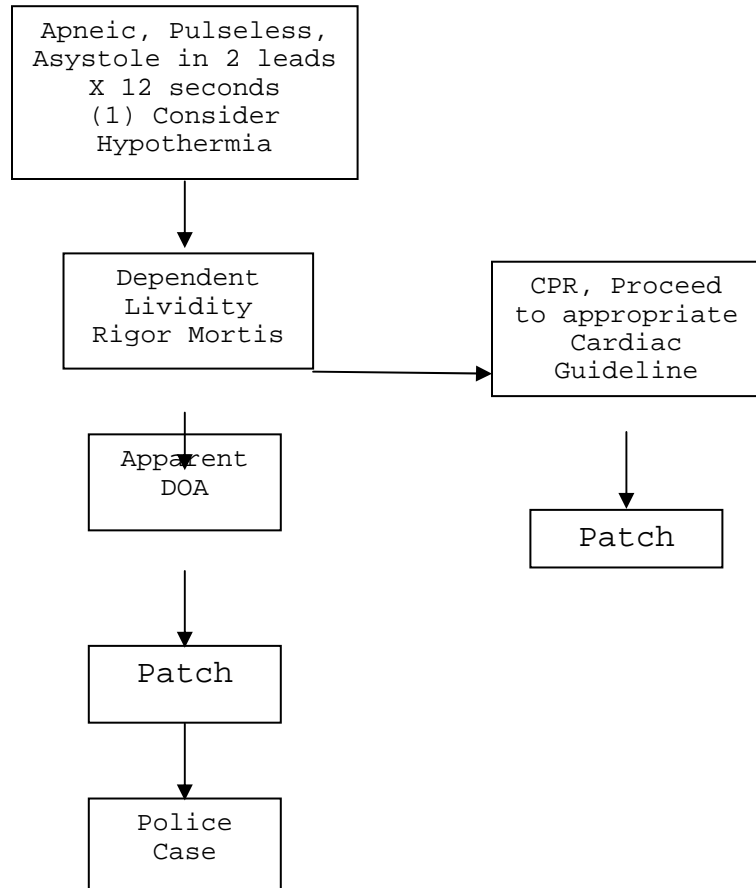
Divided into two categories: Obvious and Apparent, based on findings (2)

Obvious DOA Category



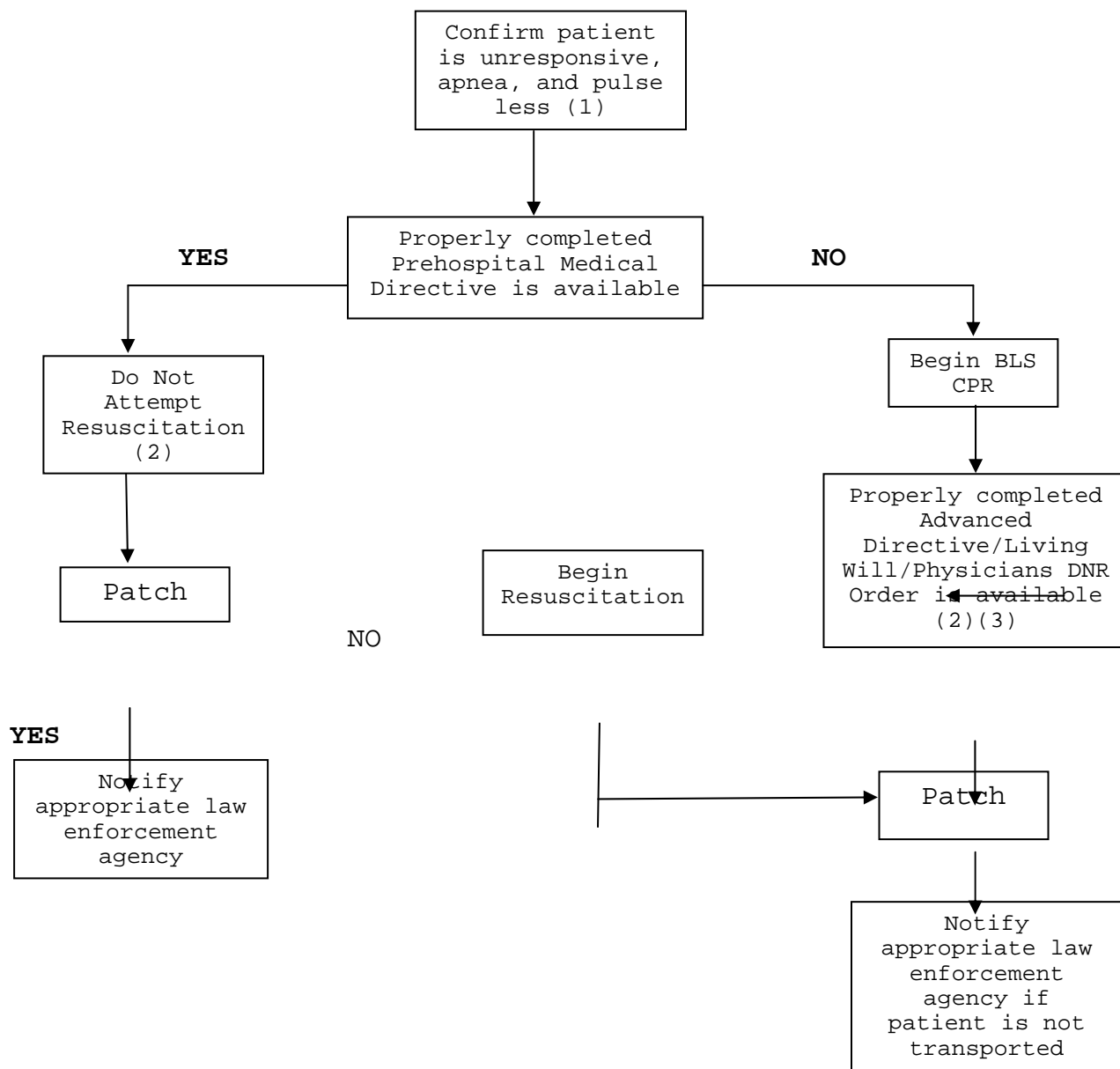
Apparent DOA Category

NO



- (1) In situations where hypothermia may be consideration, hypothermia guidelines should be followed, and Medical Control input sought.
- (2) These categories are for the purpose of delineating two different levels and actions based on those assessments not for documentation.

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 advanced directives, begin basic CPR 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.

TRAUMA DESIGNATION⁽¹⁾⁽²⁾

Physiologic Criteria:

Respiratory compromise
Glasgow Coma Scale < 13
Systolic Blood Pressure < 90 adult
Signs of shock in pediatrics

AND/OR

Anatomic Criteria

Penetrating injury to the head, neck, chest, or abdomen.
Blunt abdominal trauma with hypotension
Blunt chest trauma, flail chest, pneumothorax
Amputation above wrist or ankle

Description- **Trauma Critical Patient**

Anatomic Criteria:

Burns to face, airway, >20% BSA
Blunt chest trauma, rib fractures, pulmonary contusion
Polytrauma > 60 y.o. or < 6 y.o.
Two or more long bone Fx's
Unstable pelvic Fx
Open or depressed skull Fx
Spinal cord injury, limb paralysis
Severe head injury
Pregnancy > 3 months

Mechanism of Injury Criteria:

Fall > 20 feet (adult)
Fall > twice patient's height (peds)
Pedestrian vs. motor vehicle > 5 mph
MCA, ATV > 20 mph
MVA > 20 mph- unrestrained
MVA > 40 mph restrained
High speed rollover
Ejection from vehicle
Death in the same compartment
Passenger compartment intrusion > 18"
Extrication > 20 minutes
Bicycle > 5 mph with injury

Description- **Trauma Patient**

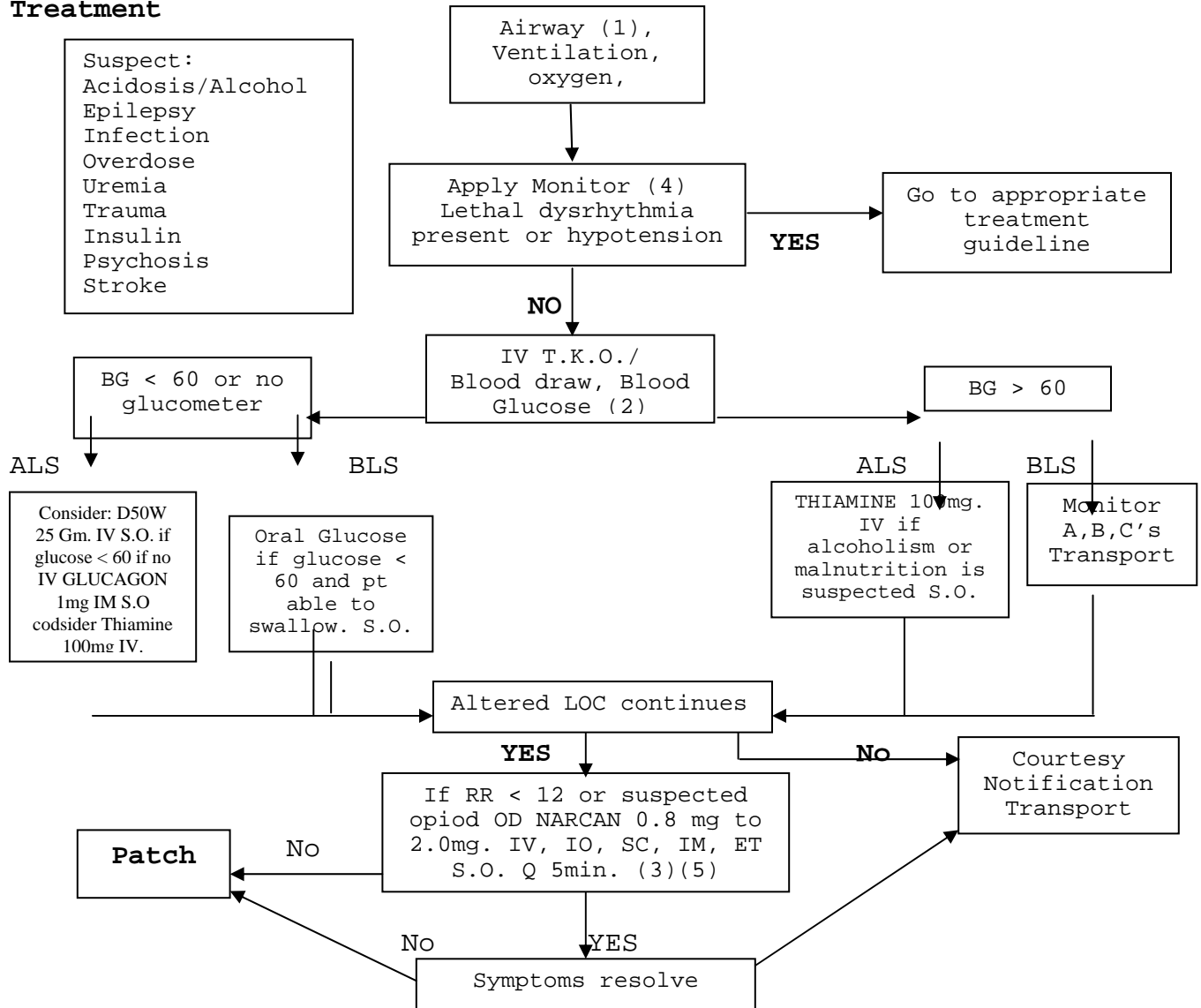
During CN or Patch describe criteria

(1) This guideline is for the purpose of having consistent criteria for communication between Prehospital Providers and Emergency departments so that appropriate staff is available at the receiving facility.
(2) Some receiving hospitals may not use this terminology.

MEDICAL: 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 apart of current event. Obtain information from family, friends, etc.

Treatment



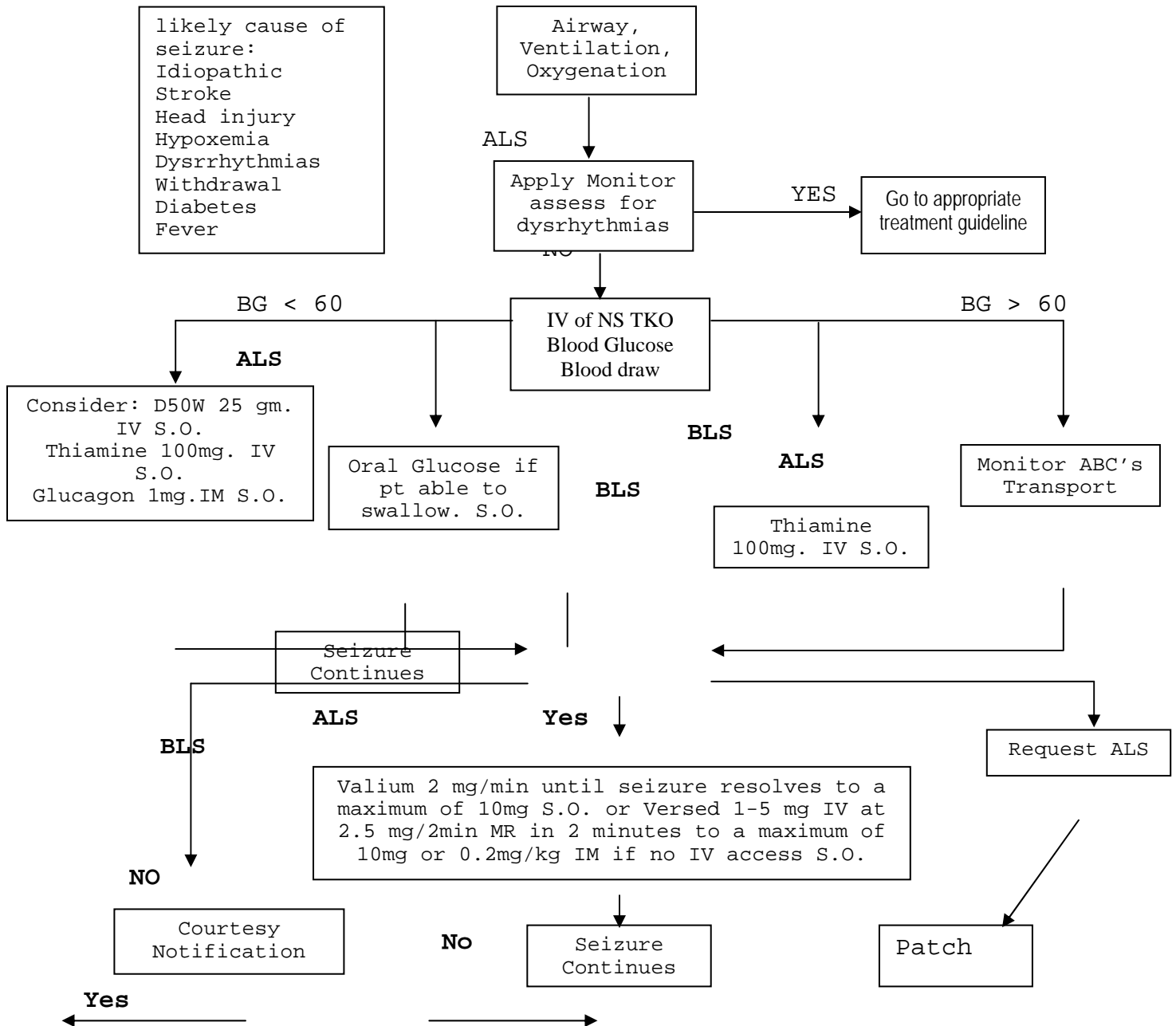
Notes:

1. Be attentive to airway compromise, or loss of the airway. Difficulty with secretions and vomiting are common.
2. Hypoglycemia may be present and may appear as focal neurological deficit or coma (stroke-like picture) in elderly persons.
3. If no change in LOC repeat glucose. Remember onset of action for Glucagon is 5 - 15 minutes.
4. Consider 12 lead
5. If Patient becomes Highly agitated contact medical control for administration of a mild sedative for safety, Midazolam 2mg IV or 5mg IM.

SEIZURES

Emergency personnel are often called to care for an individual with a known or usually controlled seizure disorder. If they are conscious and competent to make decisions, they may elect not to be transported. Always document your assessment of a normal level of consciousness, stable vital signs, and the absence of other injuries. Consult with your medical control for refusal.

Treatment



Note:

Patch to Base Hospital must be made if medications administered.

Airway Breathing Emergencies

DIFFICULTY BREATHING

In most cases, a patient with respiratory insufficiency will complain of dyspnea. Its causes are varied, to say the least. The patient may also be hypoxemic because of head or chest trauma, or because of insufficient respiratory drive due to drugs.

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Level of consciousness.
2. Note any signs of respiratory distress: nasal flaring, intercostal retractions. If you have trouble assessing tidal volume, then the patient needs assistance. Lung sounds: clear, wet, wheezing, equality?
3. Number of words in sentence?
4. Patient position. Does lying down make breathing worse?
5. Cyanosis
6. Signs and symptoms of upper airway obstruction, i.e. stridor.
7. History of event: Onset-gradual or abrupt? Pain-is it continuous or intermittent? Cough-productive or dry? Trauma? Drugs?
8. Is the patient strongly allergic to anything?
9. Has he been bitten or stung by anything?

ASTHMA

Asthma is a narrowing of the airways or bronchioles in reaction to numerous stimuli. It is both potentially fatal and usually reversible. The stimuli may be exercise, an inhaled irritant, an infection, emotional stress, or cold air.

The patient usually has a history of allergies, will be found sitting up and utilizing accessory muscles to breathe, and will be found to have a hyperinflated chest. Wheezing is pathognomonic, but realize that a tiring asthmatic may not move enough air to wheeze.

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Level of consciousness: altered L.O.C = high flow oxygen. Consider respiratory assist.
2. History of event.
3. Can the patient speak in full sentences?
4. Lung sounds: wheezes, hyperresonant chest, use of accessory muscles to breath?

COPD

Chronic Obstructive Pulmonary Disease (COPD) is a diffuse

obstruction to air flow within the lungs. It is most common in adult smokers and takes the form of either chronic bronchitis (excessive mucus production in the bronchial tree) or emphysema (distention of the alveolar walls).

The chronic bronchitic often has a productive cough, rales, wheezes, and associated right heart problems. They will often appear cyanotic, and have been referred to as "blue bloaters".

The emphysemic patient will usually not have a productive cough, not appear cyanotic, and have hyperresonant lungs. They have been referred to as "pink puffers".

Most patients will exhibit signs of both diseases and will have summoned emergency help because of decompensation due to a recent respiratory infection. Although these patients are often on hypoxic drive you must never withhold high flow oxygen if the patient is exhibiting signs of hypoxemia such as an altered level of consciousness. If they stop breathing-bag them. If they wake up from high flow oxygen-turn it down to 2 liters. If they are talking to you-2 liters is enough initially.

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Level of consciousness-altered LOC-oxygen 100%
2. History of the event - hang your hat here.
3. Can the patient speak in full sentences?
4. Is the patient barrel-chested, or exhibiting a prolonged expiratory phase of exhalation (pursed lips)?
5. Lung sounds - wet or hyperresonant?
6. Cough - dry or productive?

CHF

Diagnosis should be considered in any patient with shortness of breath. However, it should be very high on the list of possibilities; particularly in elderly patients with a history of heart disease, and in dialysis patients.

The differential diagnosis in the patient with SOB is very long. Any patient with a history of cardiac disease, chest pain, or on dialysis, with physical findings that include rales in any of the lung fields should be considered a candidate for Congestive Heart Failure. JVD and pedal edema are not specific findings.

MEDICAL: **OBSTRUCTED AIRWAY**

General Principle:

If you can't get air in then all is for naught!

BLS/ALS Treatment

BLS Treatment

If pt. conscious but cannot speak or cough give abdominal or chest thrusts until obstruction is relieved or pt. Becomes unconscious.

If pt. is Unconscious and not breathing begin CPR. Look into mouth when opening the airway during CPR. If object is visualized sweep from side of mouth.

Unsuccessful

Successful

ALS Treatment

Attempt direct laryngoscopy and removal of foreign body with Magill Forceps.

Successful

Check breathing and pulse and provide rescue breathing or CPR as necessary

Unsuccessful

Or trachea closed due to injury or edema, consider surgical/needle cricothyrotomy. (1) **ALS S.O.**

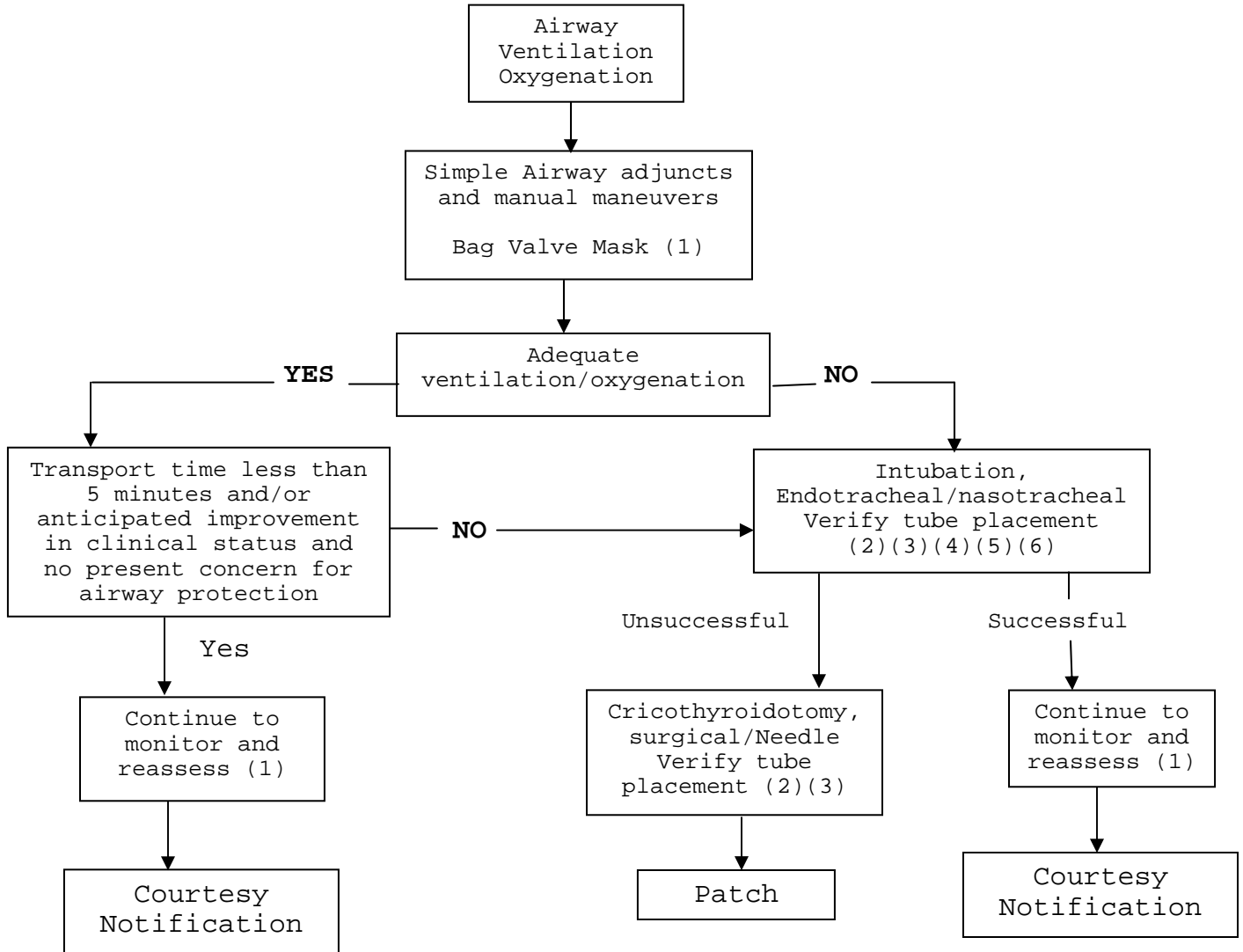
Notify Base Hospital. Provide additional care as needed.

PATCH

Note:

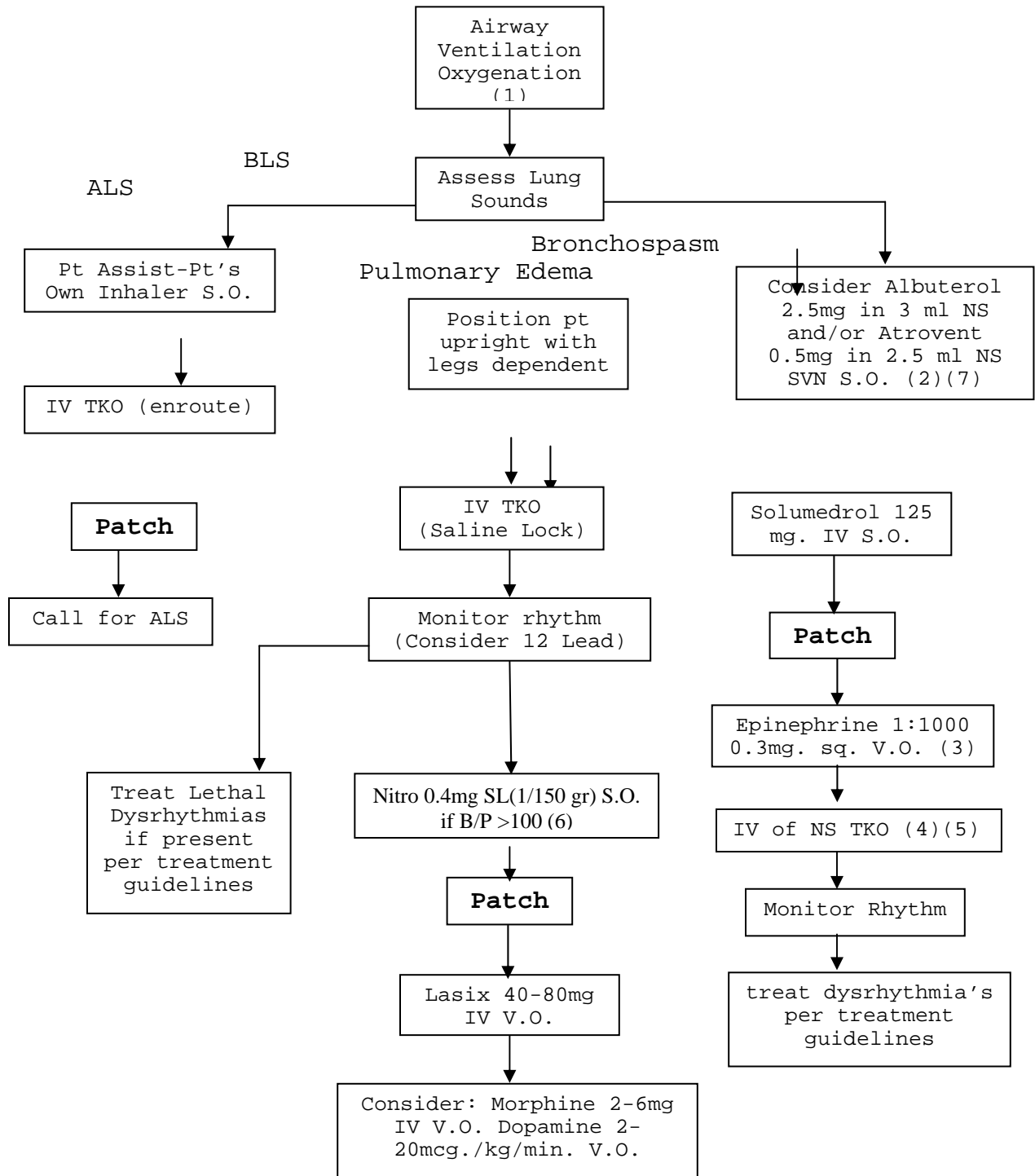
1. Verify proper tube placement

Adult Airway Airway Compromise



- (1) Consider NG/OG tube for gastric decompression in situations of prolonged ventilation.
- (2) Medical Control contact is not mandatory, however, the medic is encouraged to discuss with medical control if he/she anticipating a cricothyroidotomy and the clinical situation is such that there is time for medical control contact.
- (3) Verify proper placement by visualization of the cords and the tube passing through, bulb tube check/air aspiration or EtCO₂ detector/monitor, chest wall rise, good breath sounds, absence of gastric sounds, clinical improvement in patient and oximetry if available.
- (4) Consider Combitube if difficult airway and endotracheal intubation unsuccessful.
- (5) If jaw is clenched or patient combative, contact medical control to administer Morphine 10 mg IV and Diazepam 20 mg IV or Midazolam 10 mg IV.
- (6) Unsuccessful is not determined by only one attempt. Several attempts may be appropriate as long as changes made after each attempt appear to improve chances of a successful intubation rather than going to a more invasive procedure such as cricothyroidotomy.

Respiratory Arrest or Insufficiency



- (1) Administer high flow O2 to all patients in respiratory distress.
- (2) Consider the use of SVN therapy via inline BVM system for patients with decreased tidal volume.
- (3) The use of Epinephrine in patients greater than 45 years old or with known coronary disease requires medical control input.
- (4) Do not delay definitive treatment to establish IV
- (5) Consider IO if no IV access and patient is in extremis

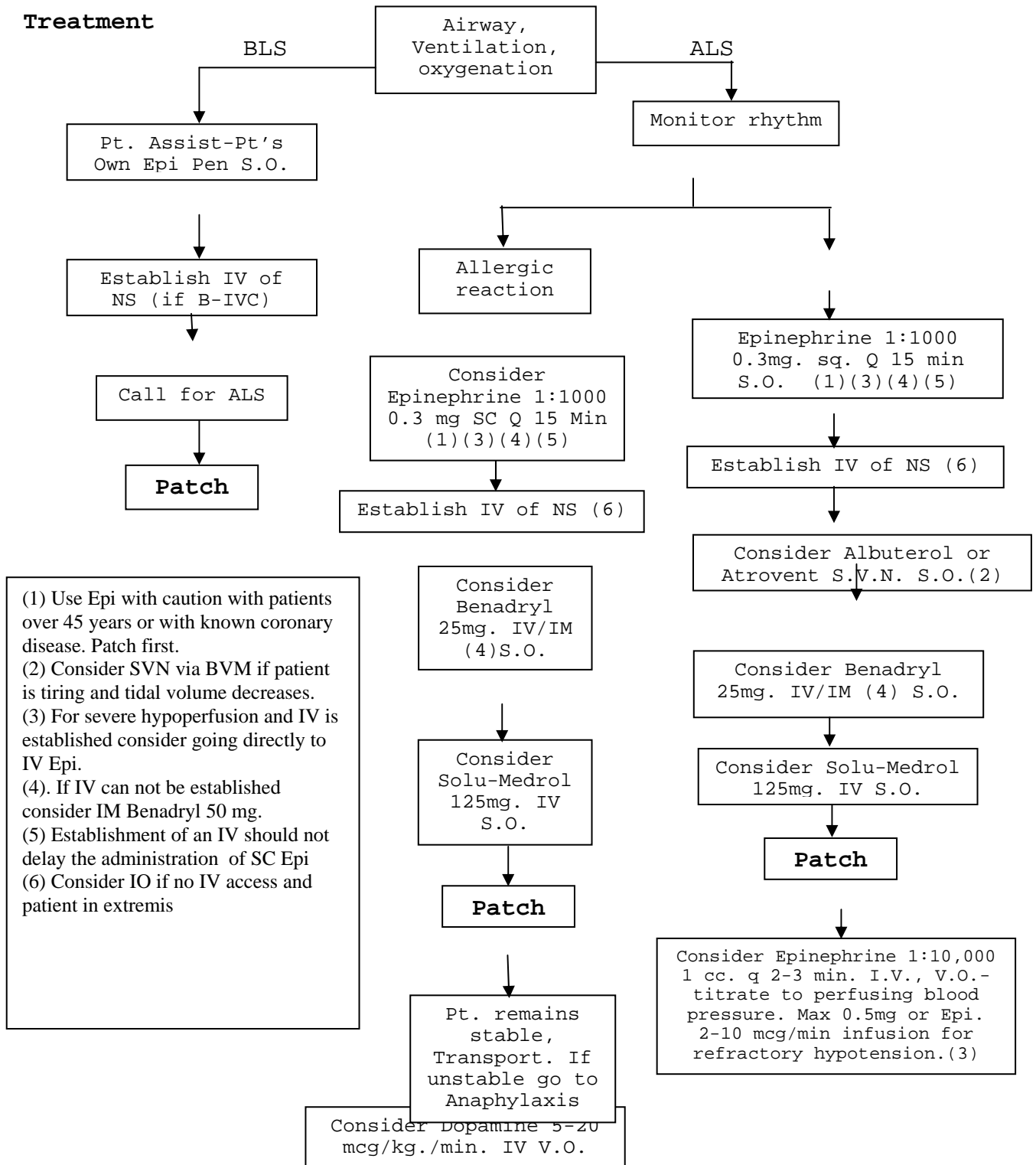
- (6) Repeat vital signs and lung auscultation before and after administration of NTG.
- (7) Albuterol first dose and Atrovent or albuterol/Atrovent Mix second dose.

Allergic Reaction/ANAPHYLAXIS

Allergic reaction: Applies to patients presenting with systemic allergic reaction e.g. diffused urticaria, angioedema, abdominal cramping, nausea or vomiting without anaphylaxis.

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

Treatment



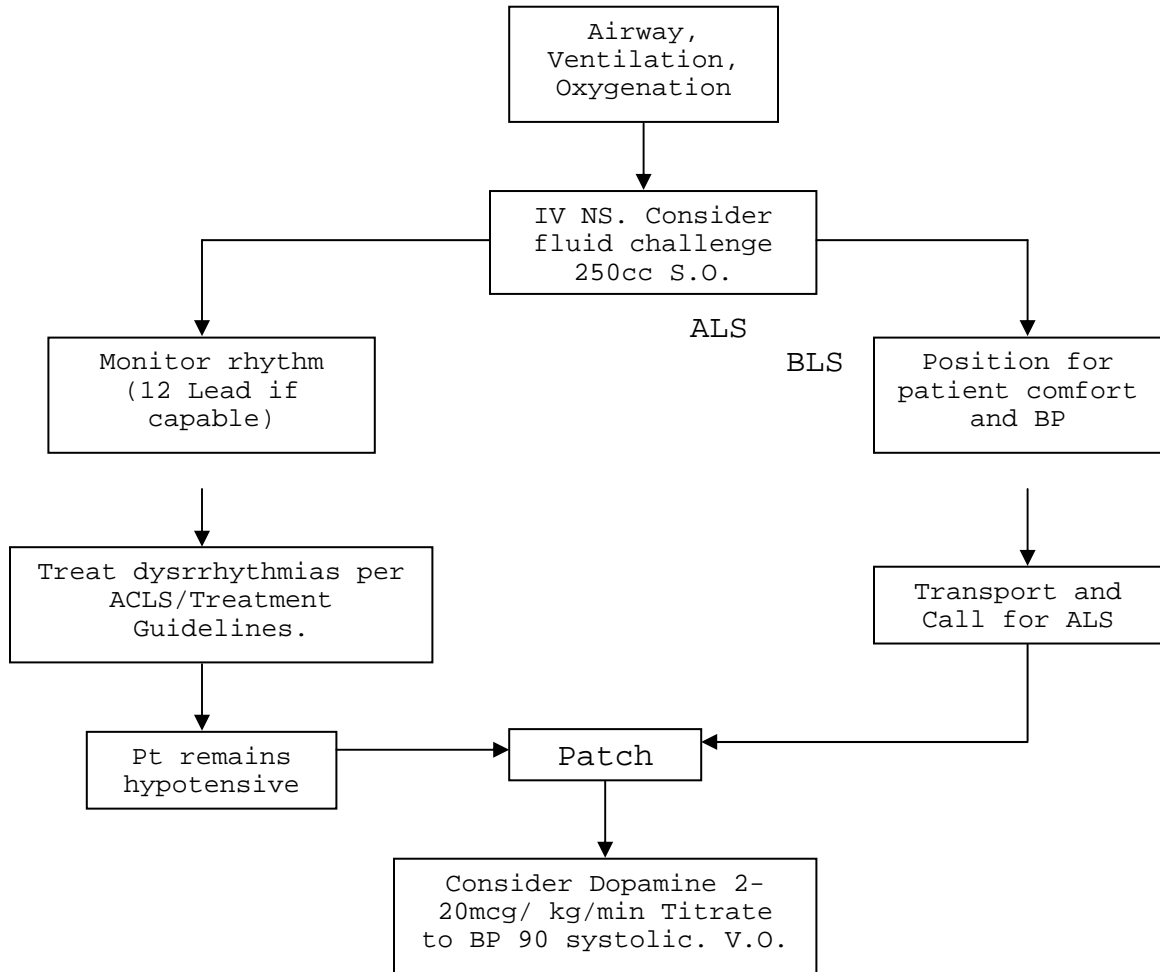
ADVANCED CARDIAC LIFE SUPPORT GUIDELINES

CARDIOGENIC SHOCK

Differential Features:

- A. Setting: Acute M.I., chest trauma (particularly blunt).
- B. Findings:
 - 1. Hypotension
 - 2. Signs and symptoms of CHF may also be present.
 - 3. Assess for and rule out hypovolemia and trauma.
 - 4. Assess lung sounds.

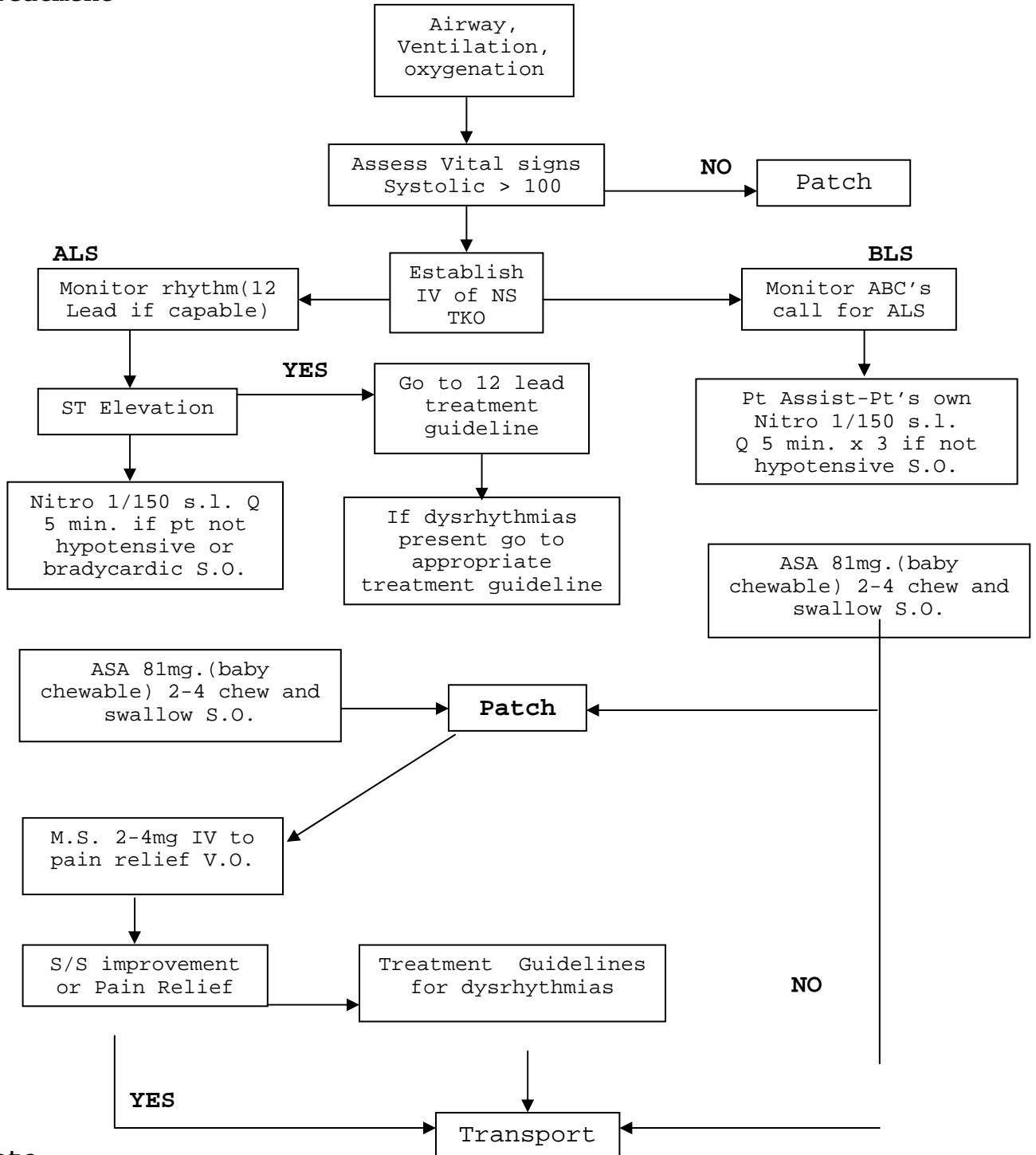
Treatment



CHEST PAIN

ACLS should be accessed when available. Rapid transport is indicated if MI or other serious cardiac condition is suspected. Look for conditions where your skills can make a difference i.e. tension pneumothorax.

Treatment



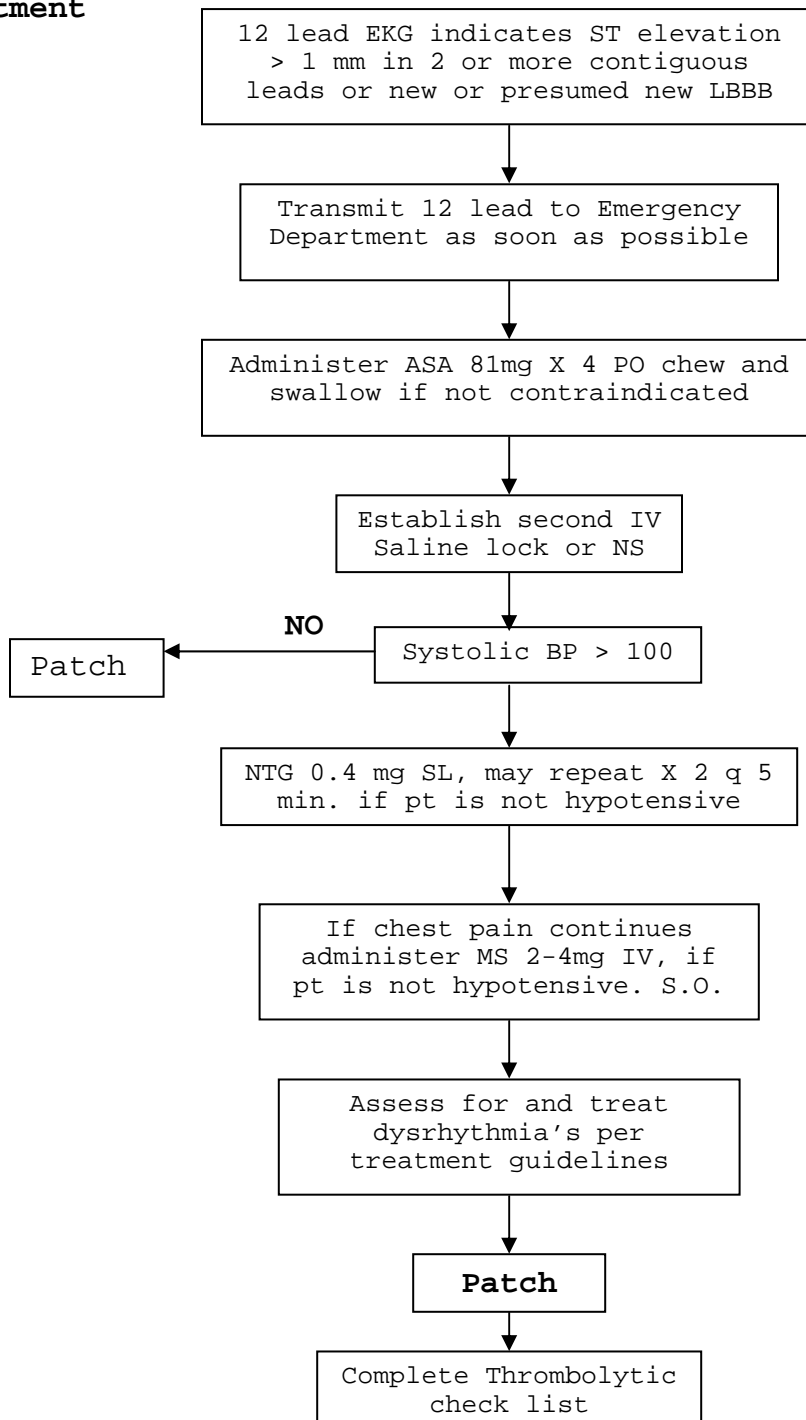
Note

Nitroglycerin is contraindicated in patients that have taken Sildenafil (Viagra) or similar medications in last 24 hours.

CHEST PAIN-12 EKG WITH ST ELEVATION (ALS Providers Only)

Chest pain suggestive of possible myocardial ischemia

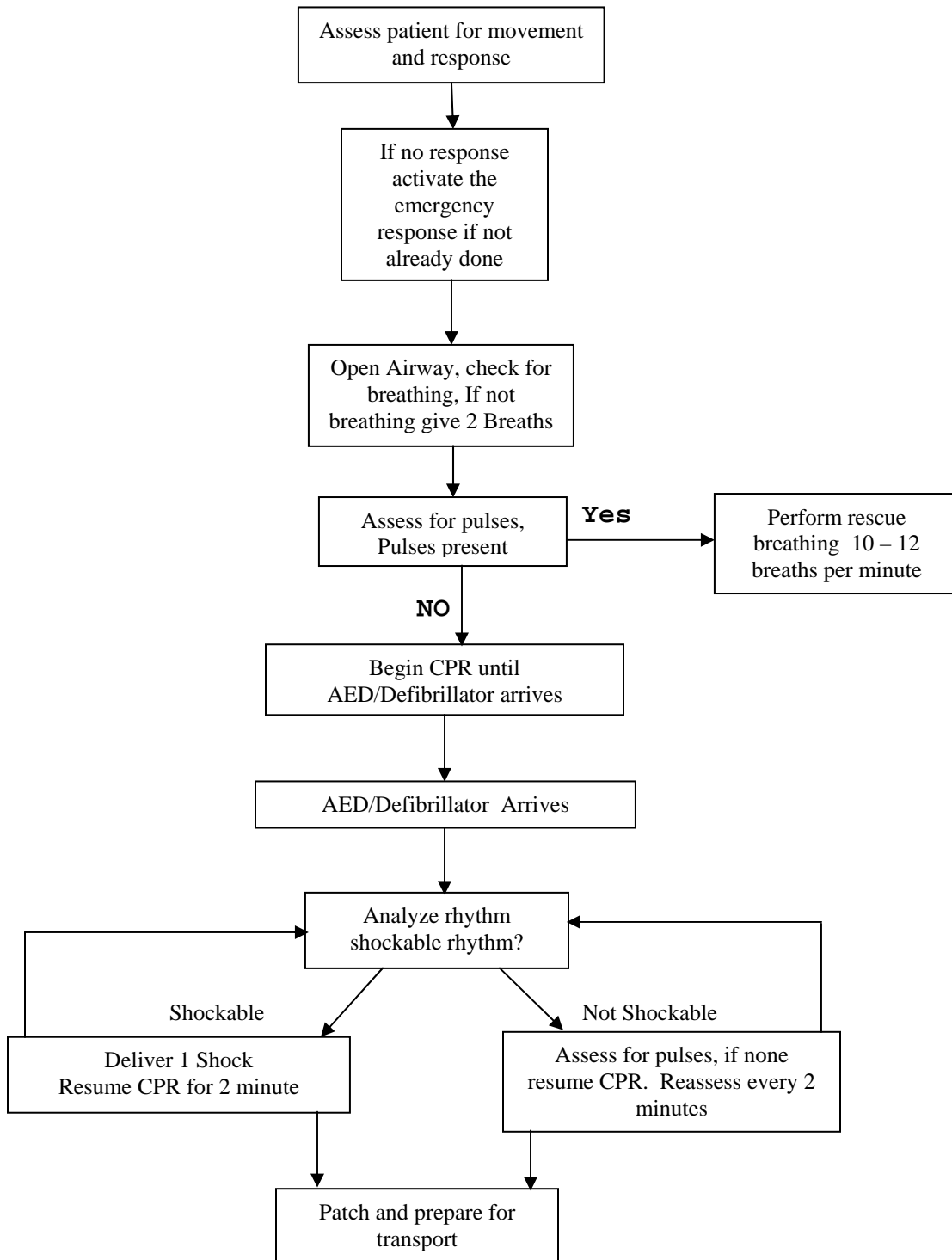
Treatment



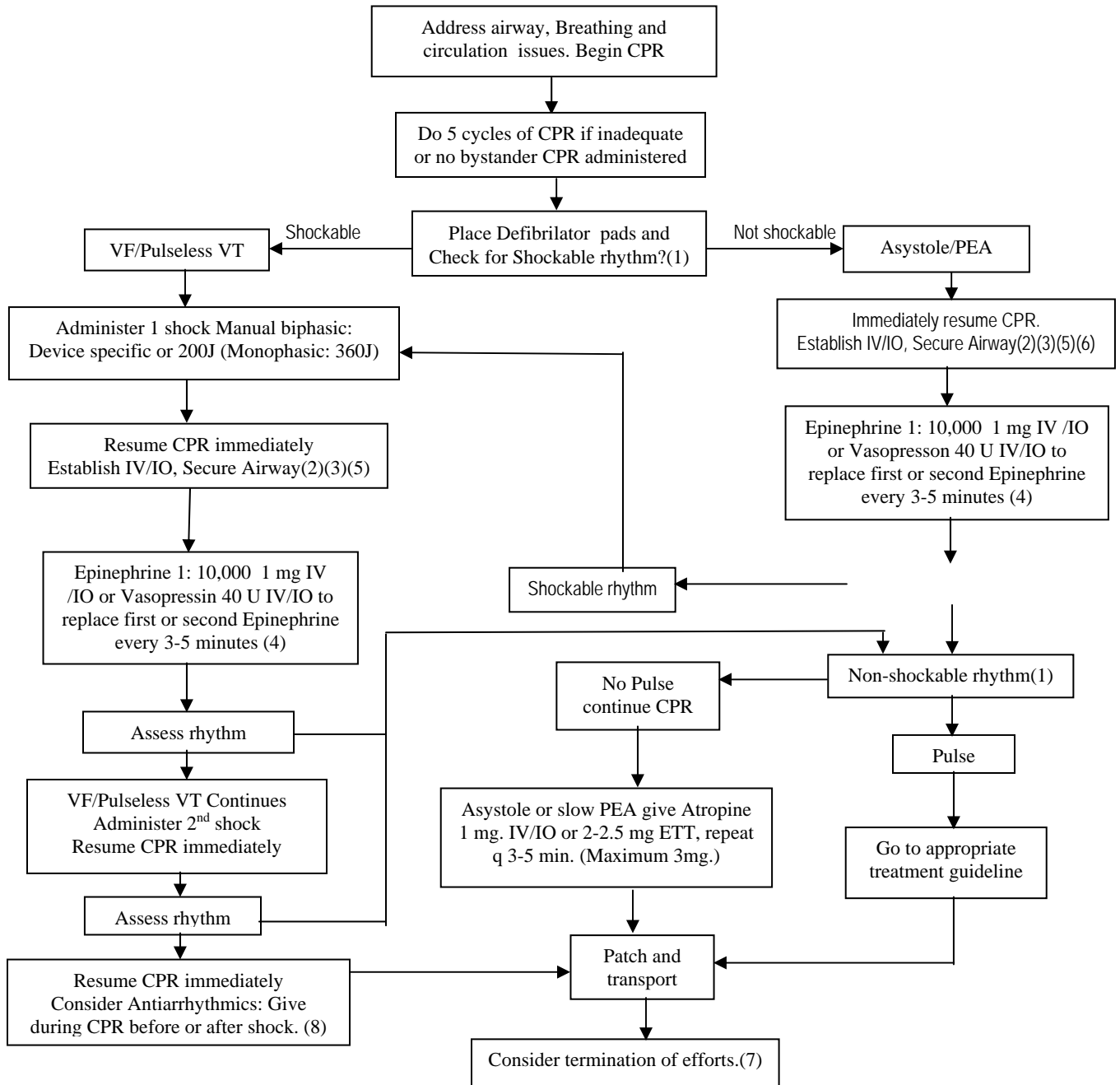
Note

Nitroglycerin is contraindicated in patients that have taken Sildenafil (Viagra) or similar medications in last 24 hours.

ADULT CARDIOPULMONARY ARREST - BLS Algorithm



ADULT CARDIOPULMONARY ARREST - Pulseless Arrest
 If history or evidence of trauma, proceed to Trauma Treatment Guideline

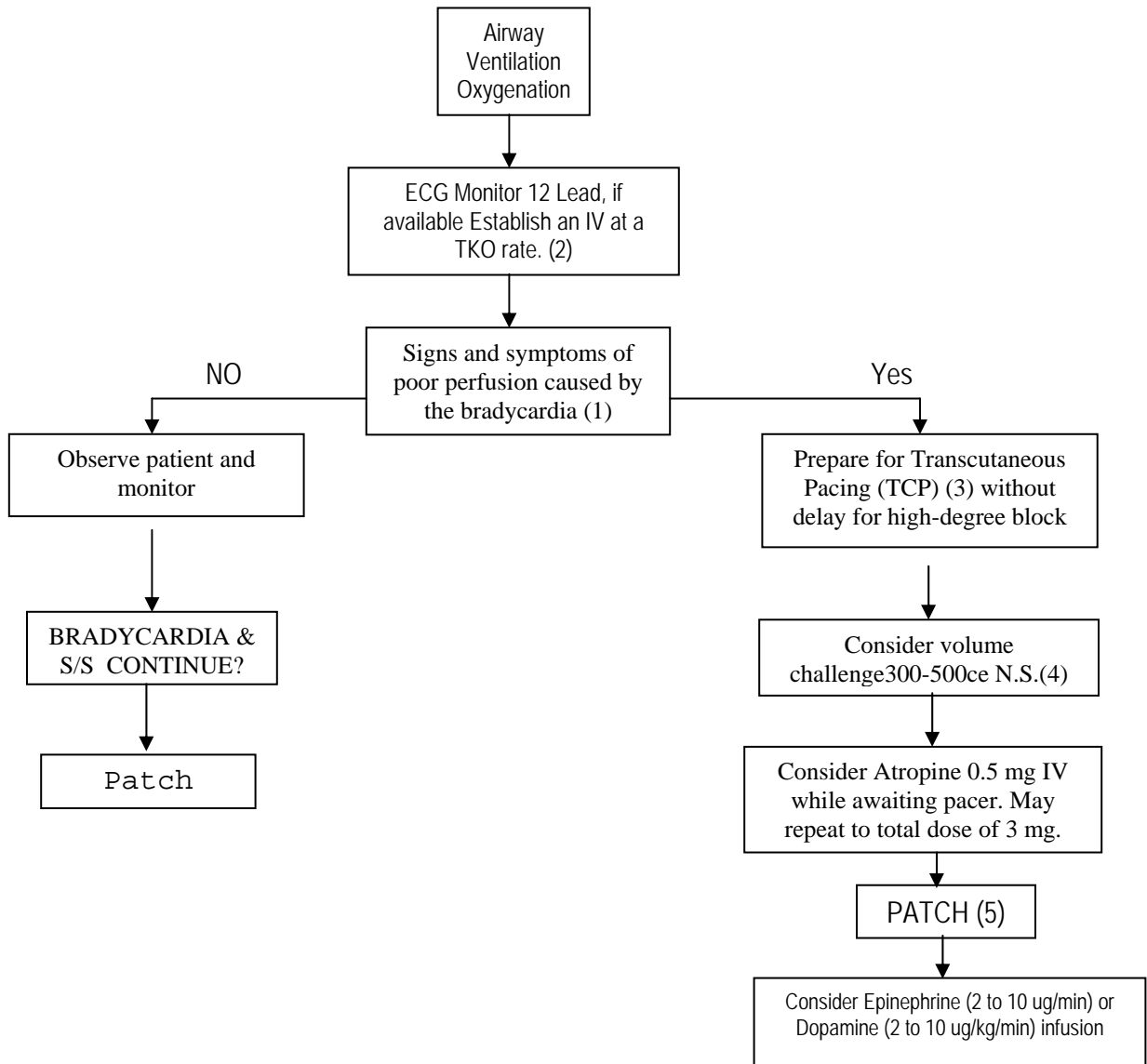


- (1) Only check pulses if an organized rhythm is present and ECG indicates a possible per fusing rhythm. Limit interruption to chest compressions.
- (2) Do not interrupt CPR for any longer than necessary. Verify proper tube placement, bulb tube check/air aspiration, chest wall rise, good breath sounds, absence of gastric sounds, clinical improvement in patient, and use of ETCO2 and oximetry if available.
- (3) After ETT verification do not interrupt chest compressions for ventilations, do continuous compressions at a rate of 100 per minute, and ventilate at a rate of 8 – 10 breaths per minute.
- (4) For ETT doses may use Epinephrine 1: 1,000 2 - 2.5 mg diluted with N S to a total volume of 10 cc's.
- (5) Consider IO if no IV access is obtained.
- (6) Consider possible causes Hypovolemia (volume infusion); hypoxia (ventilation/re-evaluation); acidosis (ventilation/re-evaluation); tension pneumothorax (needle decompression); hypothermia; 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) Administer Lidocaine 1.5 mg/kg IV/IO/ET may repeat with 0.75 mg/kg IV/IO to a maximum of 3mg/kg. Consider magnesium sulfate 1-2 Gm IV for torsades de point. If conversion is successful start an infusion of 2-4 mg/kg/min.

ADULT BRADYCARDIA, UNSTABLE

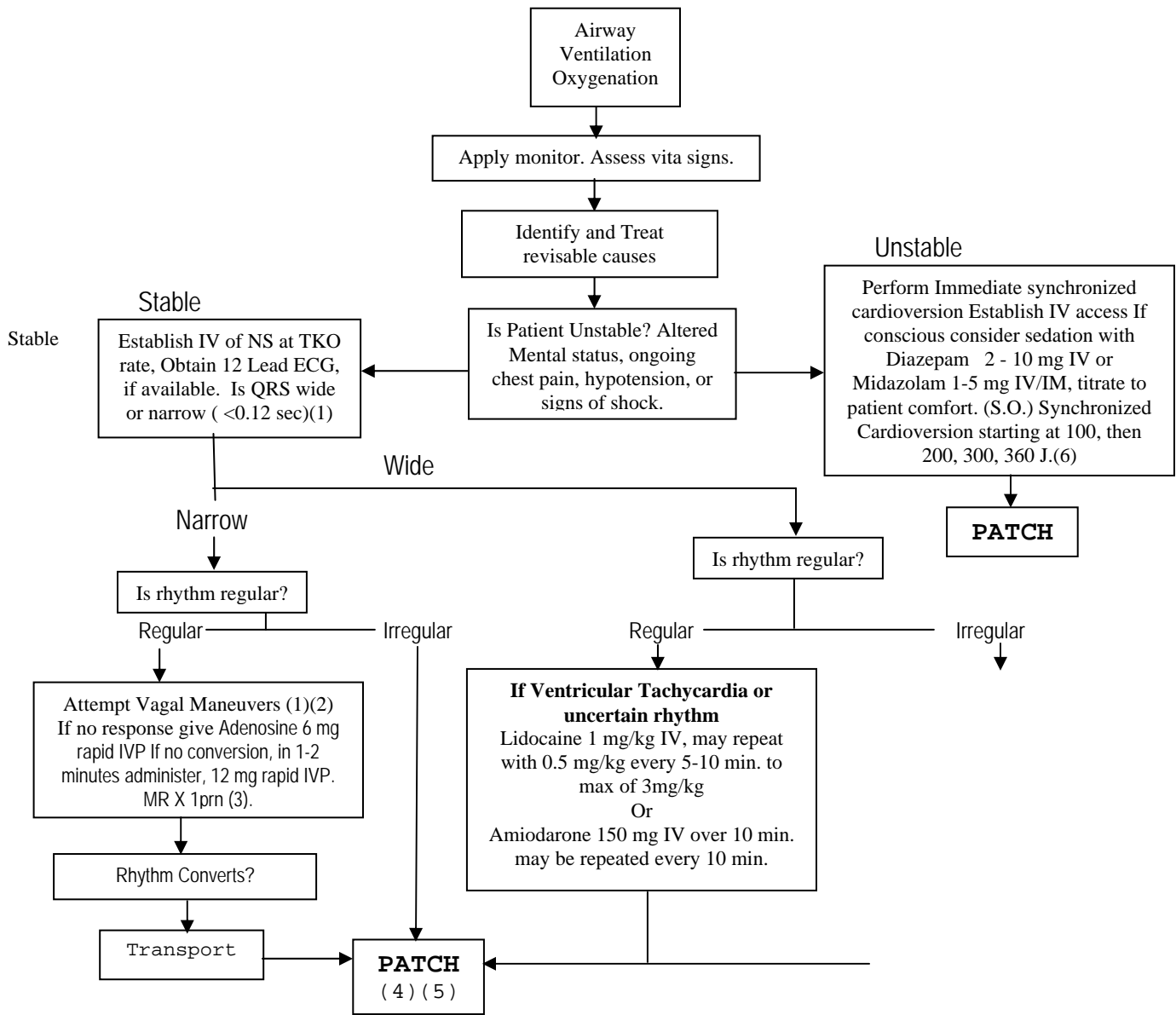
Heart rate <60 minute with accompanying signs/symptoms of hemodynamic compromise, i.e., chest pain, hypotension.

If history/evidence of trauma, proceed to Trauma Treatment Guideline.



- (1) Signs/symptoms of an unstable patient may include chest pain, shortness of breath, decreased LOC, hypotension, shock, pulmonary edema, congestive heart failure, and acute myocardial infarction.
- (2) This should not delay definitive treatment.
- (3) If pacing is used and patient is conscious, consider sedation with Diazepam 2 - 10 mg or Midazolam 1-2 mg slow IV, titrate to patient comfort and systolic BP > 100. Post patch must be done to Base Hospital to generate a telemetry form if Diazepam/Midazolam is administered prior to regular patch.
- (4) Repeat vital signs and lung auscultation before and after fluid administration
- (5) Contact Medical Control to consider administration of Dopamine 5 -20 mcg/kg/min and/or Epinephrine 2-10 mcg/min.

**ADULT TACHYCARDIA with a Pulse
(HR > 150/MIN)
Narrowed QRS complex; regular rhythm.**



(1) If at any time serious S/S develop, proceed to "Critically Unstable"

(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 a history of hypertension. If ordered by Medical Control, verify absence of carotid bruits.

(3) The medic should consult Medical Control and consider reducing the Adenosine dosage in patients who are on Dipyridamole (Persantine) and Carbamazepine (Tegretol)

(4) Contact Medical Control to administer Verapamil 2.5 - 5 mg IV, if patient's systolic blood pressure remains above 100 and no signs of CHF. Consider pre-medication with Calcium Chloride 1-3 mL prior to Verapamil administration. Or Consider Diltiazem 0.25 mg/kg, May repeat in 15 minutes with 0.35 mg/kg, OR consider Amiodarone 150 mg over 10 minutes. Or Consider cardioversion.

(5) Consider 12 lead EKG.

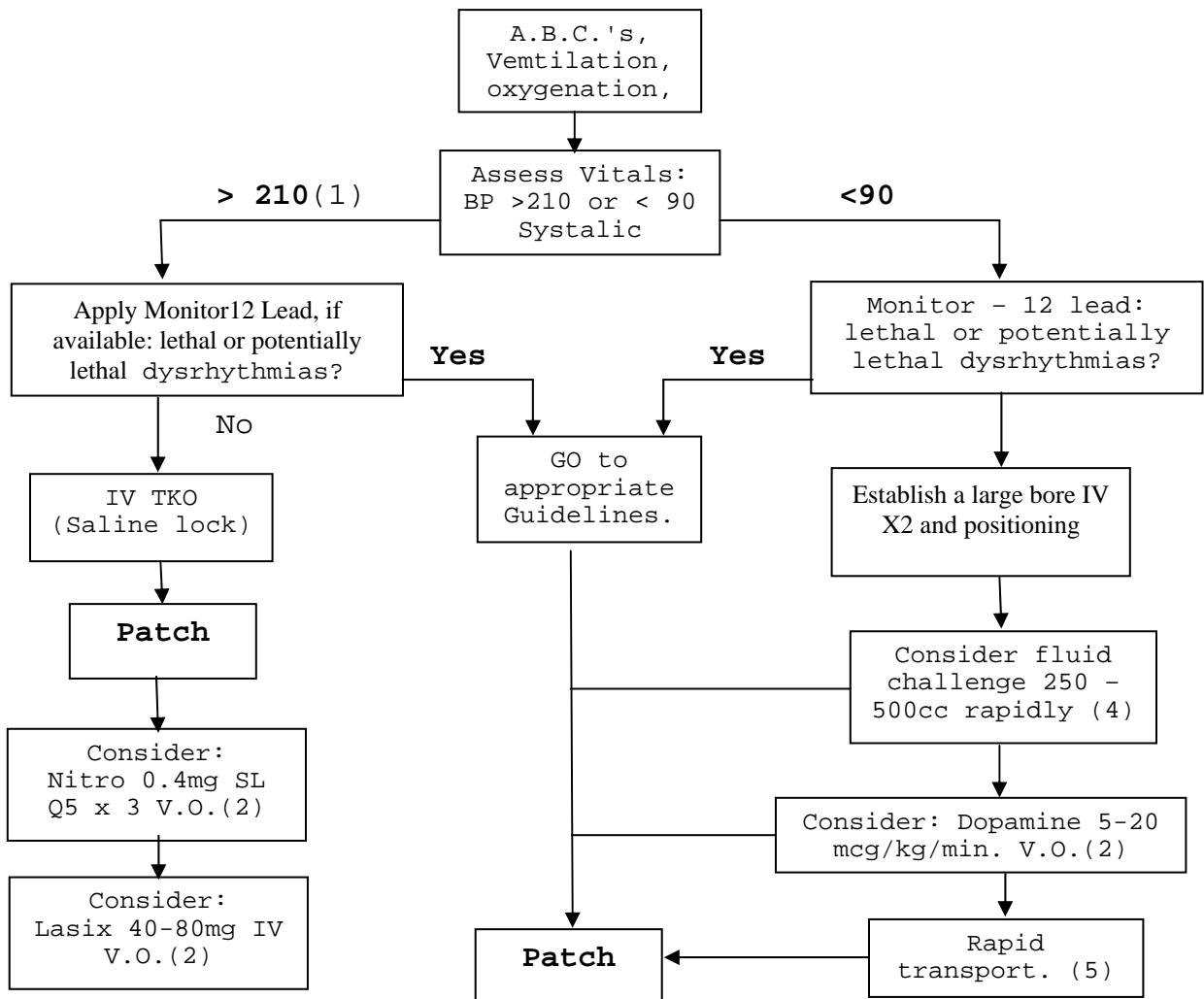
(6) If Delay in synchronization occur or rhythm is polymorphic VT go immediately to unsynchronization at 200J. Or biphasic equivalent.

HYPERTENSION/HYPOTENSION, NON TRAUMATIC(3)

Hypotension is defined as B/P < 90 systolic with signs and symptoms of hypoperfusion. Consider PMH and medications, (e.g. ulcers, aneurysm, alcoholism, cardiac disease); dehydration (i.e. vomiting, diarrhea, uncontrolled diabetes, fever); blood loss (i.e. GI bleeding, vaginal bleeding, ruptured ectopic pregnancy).

Remember that most hypertension does **NOT** require immediate intervention. Acute hypertensive crisis is defined as a resting blood pressure in the >210 systolic and >110 diastolic, and symptoms of end organ dysfunction i.e. altered LOC, seizures, CHF and/or chest pain. Consider medication therapy if signs and symptoms are present.

TREATMENT



- (1) BP should be assessed three times to establish criteria for hypertension
- (2) Contact Medical control prior to drug administration if possible.
- (3) PMH and patient's medication may be key to index of suspicion for cause of Hypotension.
- (4) Repeat vitals signs and lung auscultation before and after fluid administration
- (5) If pulsatile abdominal mass present or suspected AAA/TAA, move patient with care and patch.

TRAUMA, Multi-system

General Principles:

Trauma often presents with an obvious mechanism of injury. Nevertheless, one should remember that a less obvious medical problem, e.g. myocardial infarction, hypoglycemia, CVA, etc., may also be present.

The most obvious trauma is not necessarily the most significant. Always evaluate A.B.C.'s initially. Many trauma victims have died from simple mechanical airway obstructions while their more dramatic injuries were attended to.

Sometimes the patient must be separated from the environment (gasoline, electric lines, smoke, CO, etc.) that constitutes a major threat to victim and rescuer. This may have to take precedence over all other life support measures.

Trauma incidents often involve multiple patients. One must quickly assess the scene and determine if the resources available are adequate, or if other resources need to be activated.

Critically injured patients often need early surgical intervention. Therefore, rapid transport may be an essential part of treatment. Reasonable time on scene should be limited to extrication, immobilization, A.B.C.'s, and only necessary treatment intervention. Secondary non life saving interventions should be accomplished enroute. Consider the use of air transport early for rapid transport to an appropriate facility.

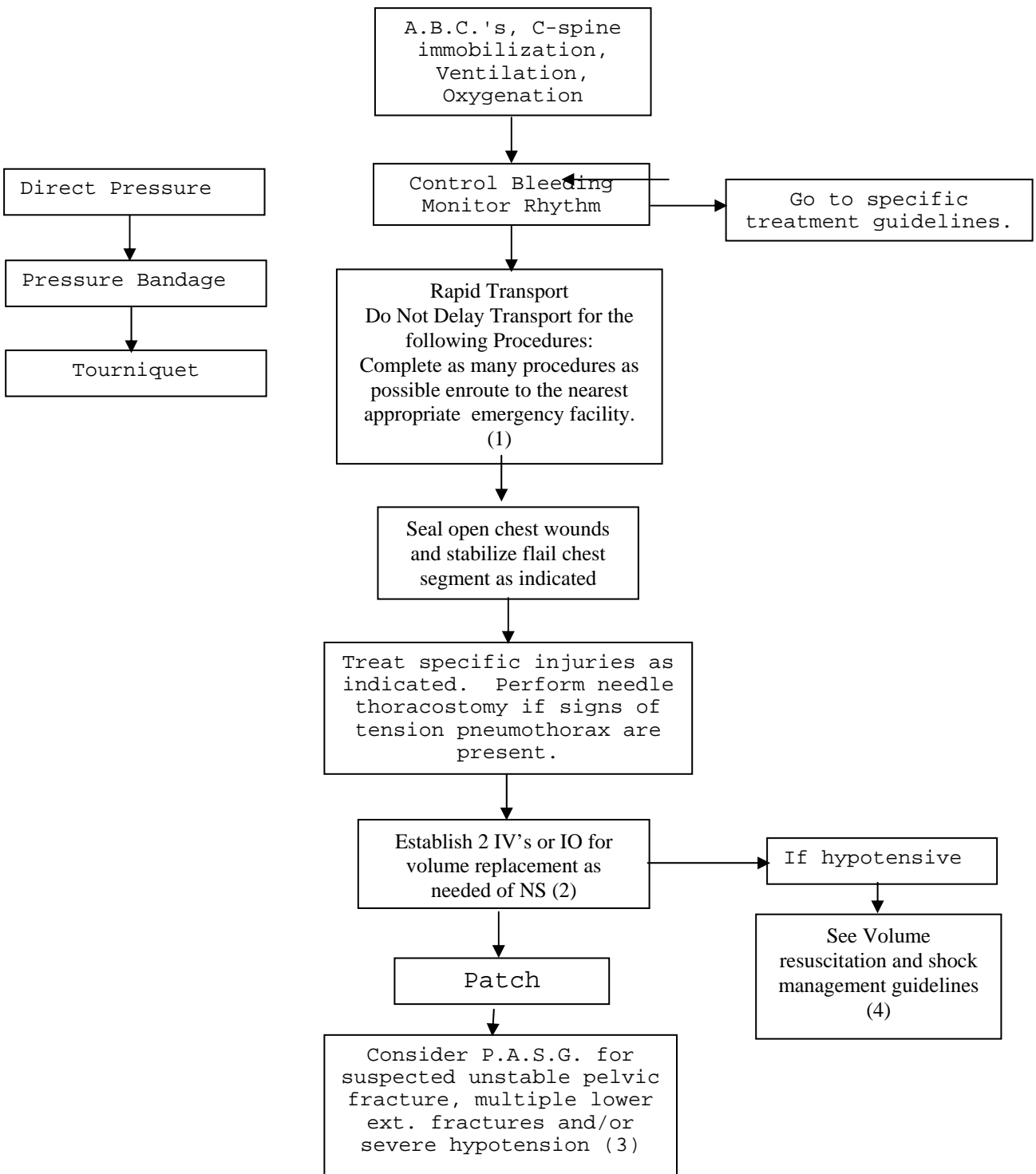
IV should be large bore and macrodrip tubing used. (enroute)

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Is the scene safe for personnel?
2. What is the mechanism of injury?
3. Do you have adequate resources available enroute?
4. Is the environment presenting a challenge to the patient or rescuers?
5. Consider air craft assistance early. Will provide for more ALS and rapid transport.
6. Scene time Should not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
7. Consider IO or central line placement if no peripheral IV access is obtained.
8. PASG/MAST is contraindicated in penetrating chest trauma and is relatively contraindicated in isolated blunt chest trauma.
9. Careful consideration should be given to the amount of fluids infused in the field.

(TRAUMA, Multi-system CONT.)

Treatment General



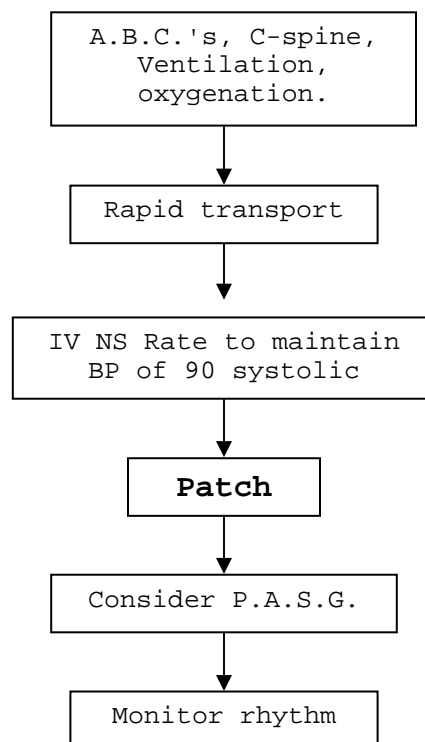
- (1) The goal for time on scene is not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop. Patients with penetrating injuries to the thorax or head with unstable vital signs should be transported immediately
- (2) Consider IO administration if no IV access is obtainable.
- (3) PASG/MAST is contraindicated in patients with penetration chest trauma and is relatively contraindicated in isolated blunt chest trauma.
- (4) Careful consideration should be given to the amount of fluids infused in the field.

TRAUMA: ABDOMEN

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Must always suspect with events that suggest possible abdominal trauma i.e. MVA, fall, etc.
2. If Signs and symptoms are present with suggestive mechanism and without outward signs of hemorrhage suspect abdominal injury. Signs and symptoms are often subtle.
3. Any chest injury below the nipple line may also involve the abdomen
4. Consider air craft assistance early. Will provide for more ALS and rapid transport.
5. Scene time Should not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
6. Consider IO or central line placement if no peripheral IV access is obtained.
7. PASG/MAST is contraindicated in penetrating chest trauma and is relatively contraindicated in isolated blunt chest trauma.
8. Careful consideration should be given to the amount of fluids infused in the field.

Treatment:



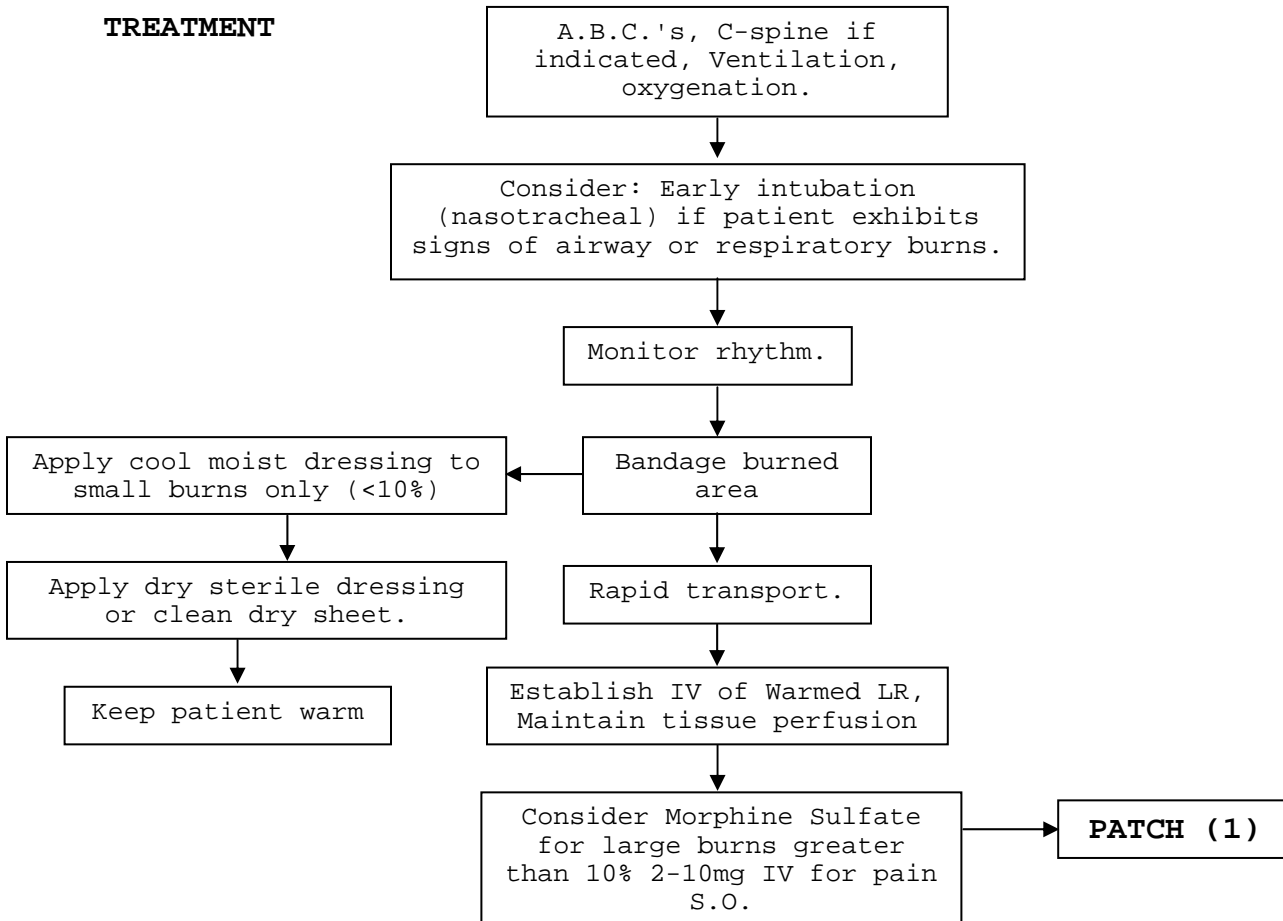
TRAUMA: BURNS

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS:

1. A.B.C.'s and scene safety. Always evaluate for possible airway injury.
2. Evaluate for associated injuries i.e. traumatic injuries (C-spine, fracture, pulmonary).
3. Is there evidence of inhalation injury: burns around mouth or nose, soot in sputum, or hoarseness and coughing, and increased respiratory rate.
4. Using "Rule of 9's", estimate percentage of partial thickness and full thickness burns.
5. Assess for entrance and exit wound if burn electrical or lightning.
6. Assess for decontamination necessity if burn is chemical. Flush chemical burns for 20 minutes.
7. Find out if pt has other medical condition that will affect burn treatment.
8. Protect Patient from hypothermia.
9. Cool burn site if superficial and small (<10%).
10. Remove jewelry.
11. Consider air transport to a burn center.

BURNS

TREATMENT



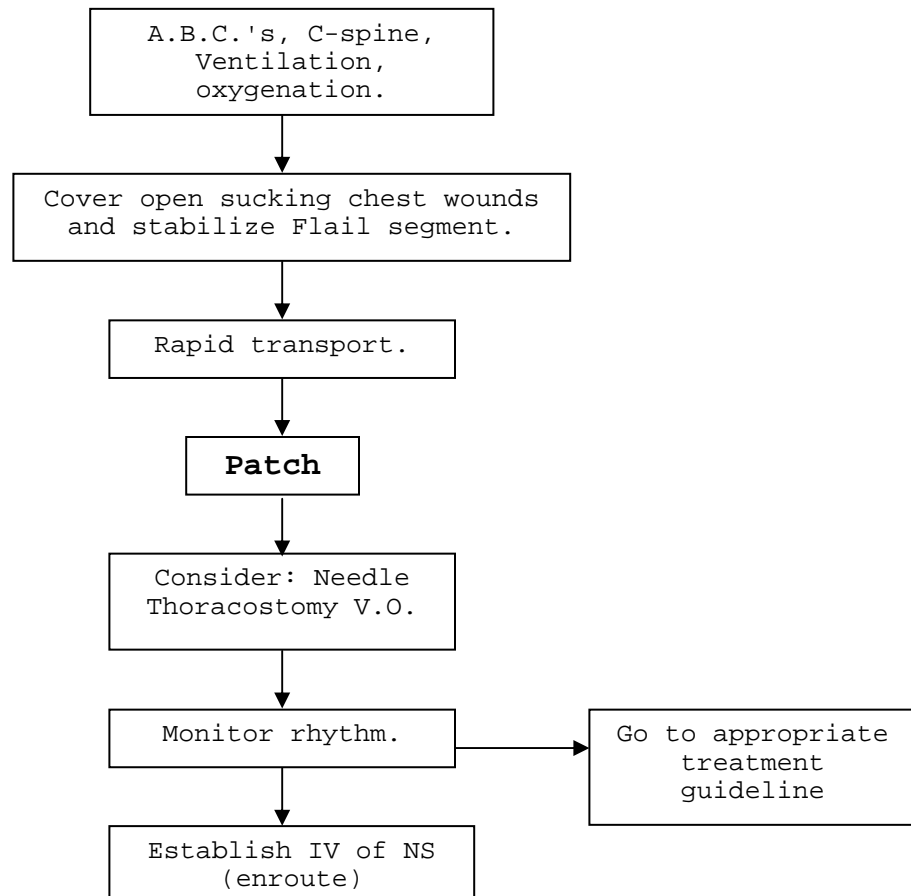
(1) Patch must be completed for to generate telemetry for Morphine Administration.

TRAUMA: CHEST INJURY

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Is the scene safe for personnel?
2. What is the mechanism of injury?
3. What is the pt's level of consciousness? Glasgow coma scale.
4. Can the pt speak in full sentences and maintain their own airway?
5. Observe the pt's respirations, palpate thorax for instability of the ribs or spine, look for paradoxical movement, subcutaneous air.
6. Auscultate breath sounds. At minimum, listen to apices and bases. Compare equality of sound from one side to the other.
7. Observe for or rule out (R/O):
 - a) Sucking chest wound.
 - b) Flail chest.
 - c) Pneumothorax/Hemothorax
 - d) Tension pneumothorax progressive SOB and decreasing BP.
 - e) Cardiac tamponade or hemorrhage into pericardial sack (neck veins may fill, heart sounds may be muffled, and pulse pressure may narrow, i.e. systolic and diastolic will move together).

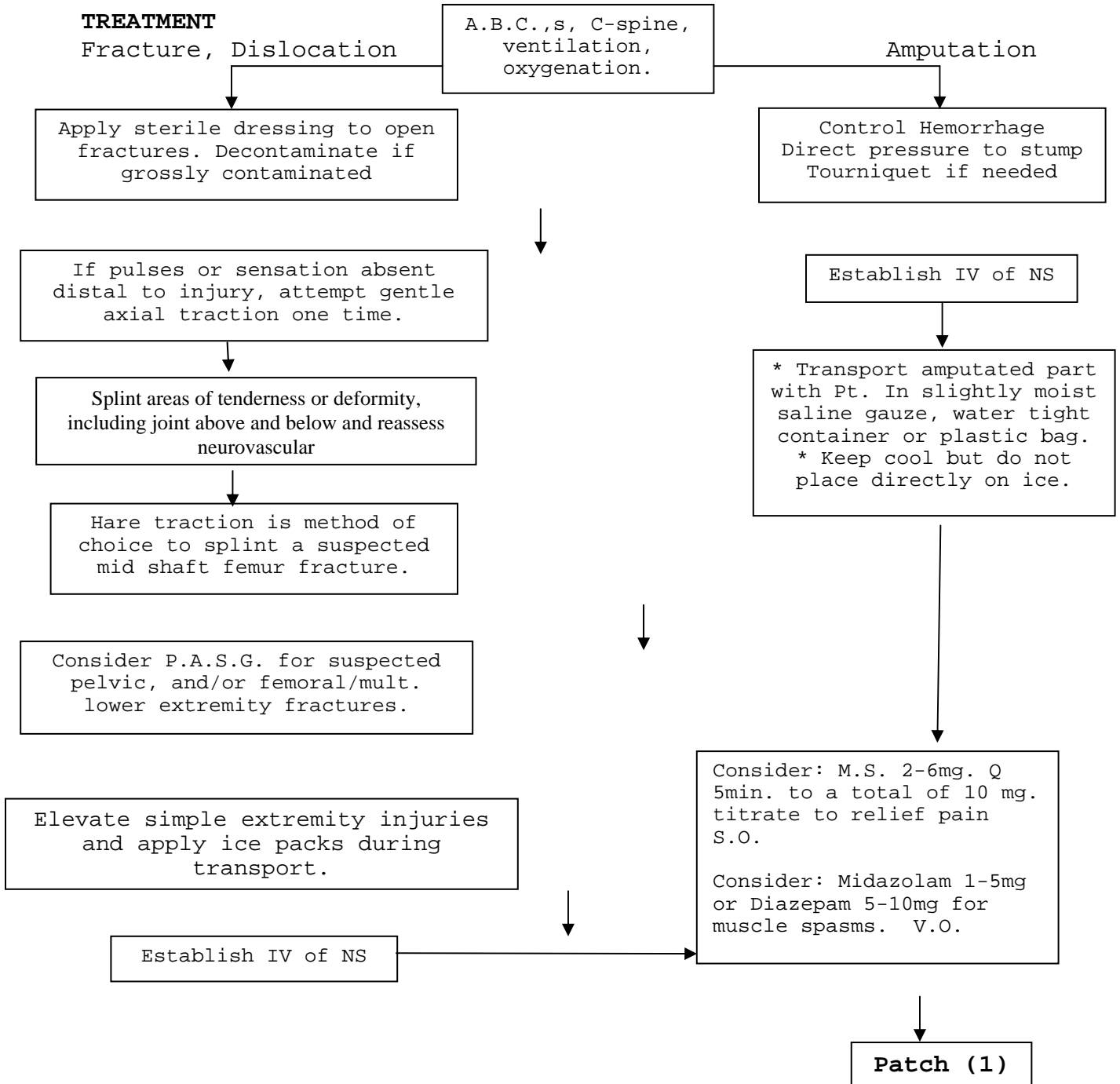
TREATMENT



TRAUMA: Extremity Trauma

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Assess localized swelling, discoloration, angulation, lacerations, exposed bone ends, or crepitus.
2. Loss of function, guarding, or pain.
2. Quality of distal pulses, sensations, movement.



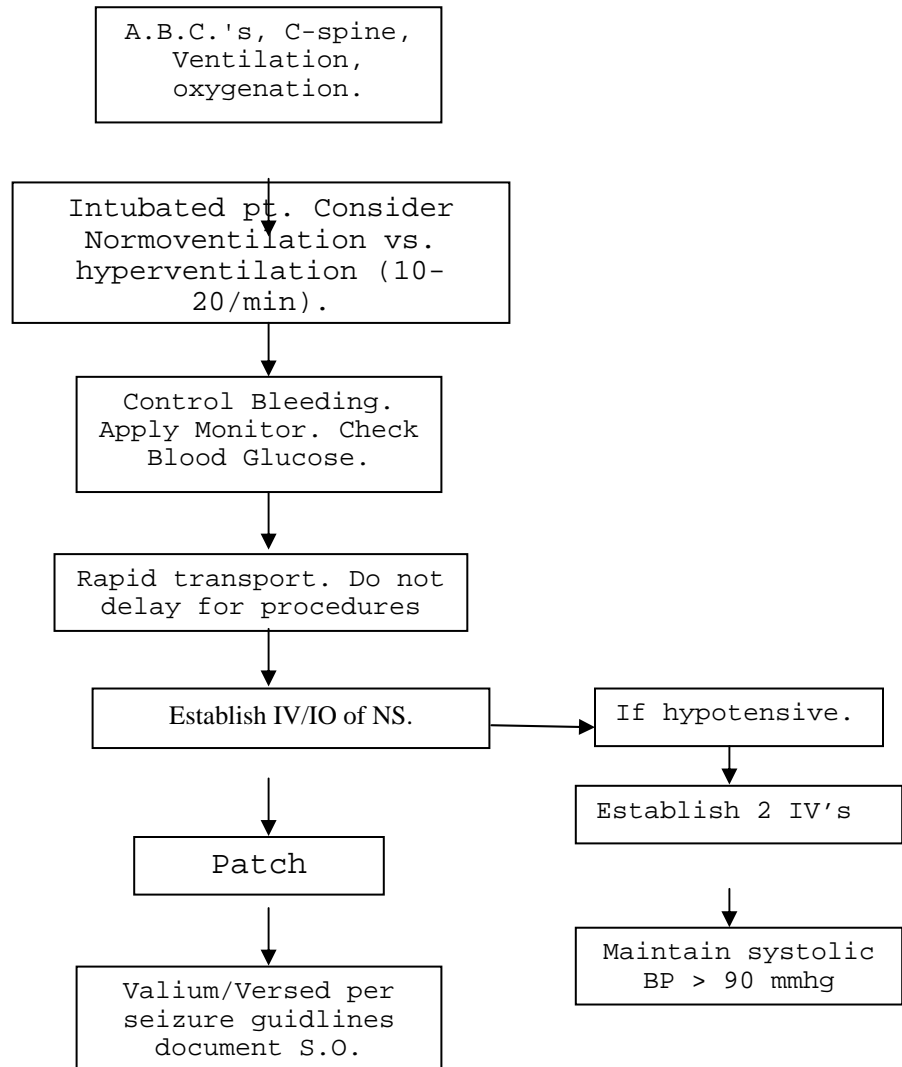
1) Patch must be completed for to generate telemetry for Morphine Administration.

TRAUMA: HEAD INJURY

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Patients with an GCS of 8 or < should be considered to have a severe head injury.
2. Controlled hyperventilation with 100% O2 at 20 BPM should only be used in patients with signs of impending central herniation; unconscious, unresponsive patients with extensor posturing or no motor response; asymmetric or dilated and unreactive pupils; GCS decreases 2 or more points from patients prior best score when patient had initial GCS of 9 or less, after correction of hypoxemia, hypotension, and hypoglycemia. Normoventilation is 10 bpm in the adult.
3. Scene time is not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
4. Consider IO placement if no peripheral IV access is obtained

Treatment

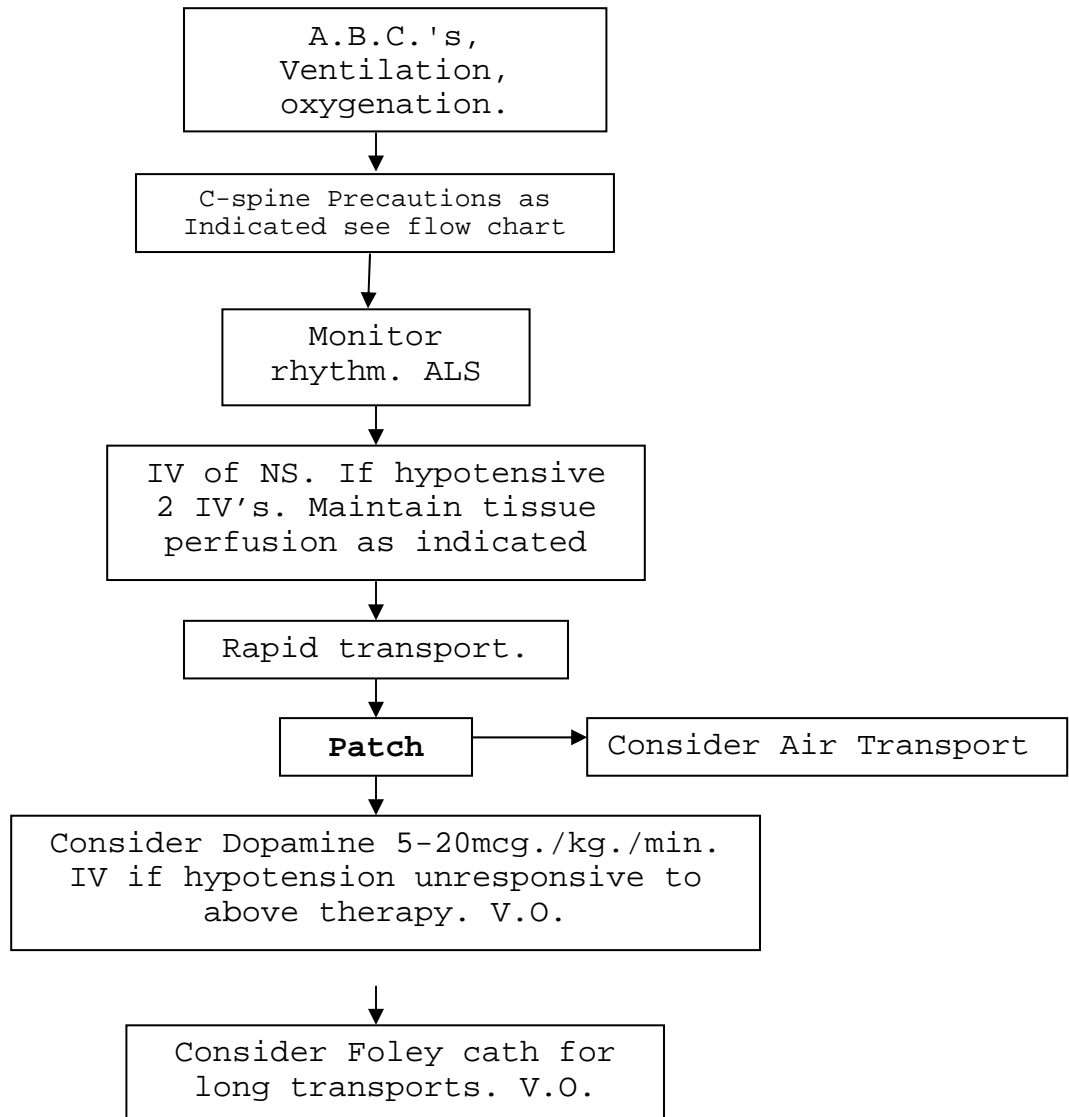


TRAUMA: SPINAL INJURY

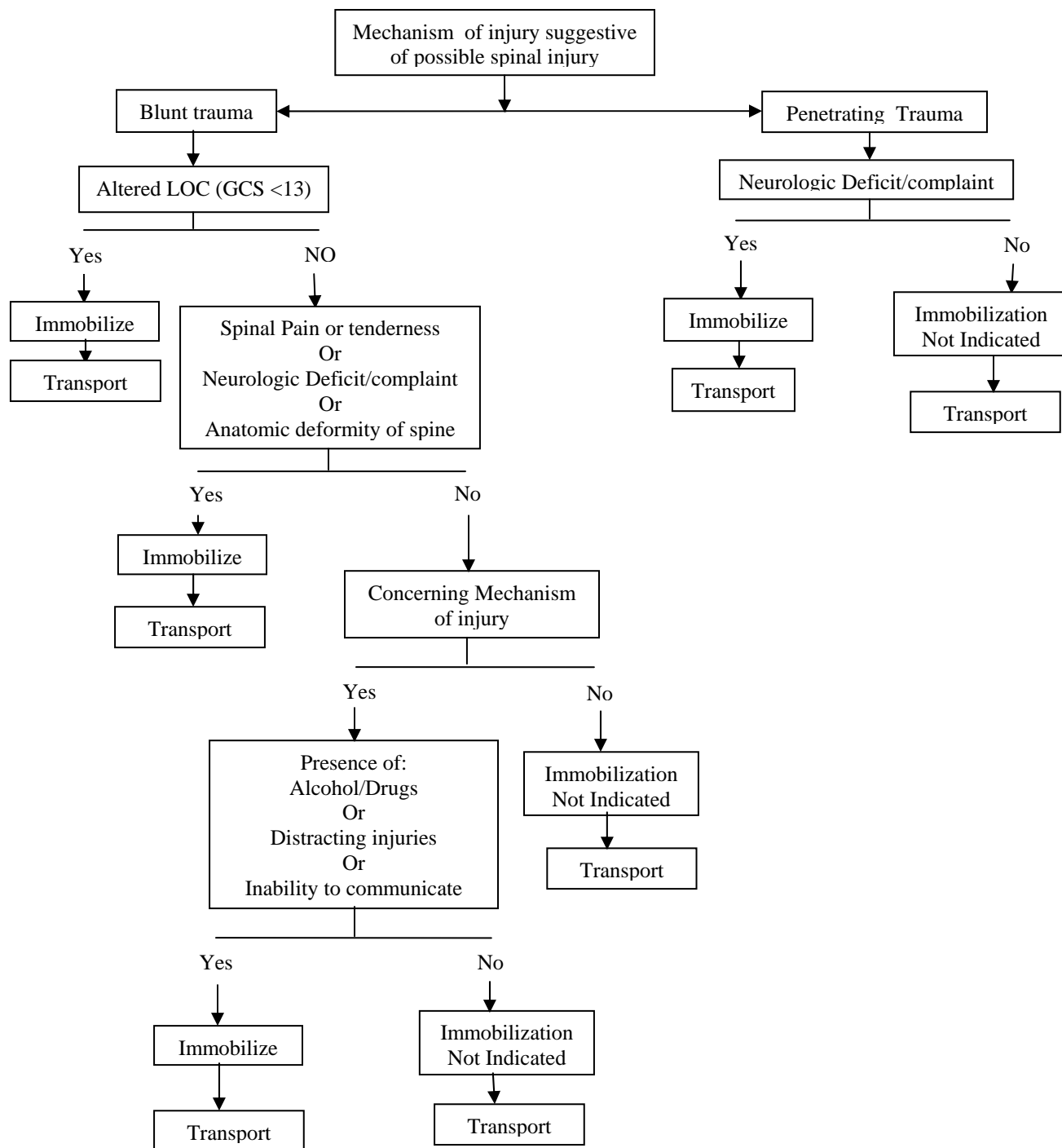
SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Note position in which pt is found and document. Some positions indicative of spinal injury: forearms flexed to chest with hands half closed, stick 'em up position, etc.
2. Assess for motor or sensory deficits or parasthesias in extremities.
3. Vital signs: hypotension in warm flushed pt and use of abdominal muscles for breathing may both be indicative of spinal injury.
4. Examine spine for deformities.
5. Note level of sensory deficit on pt if applicable. T-10 is level of umbilicus, etc.
5. Note presence of priapism in male patients.

Treatment:



Trauma: Indications for Spinal Immobilization



**"USE CLINICAL JUDGEMENT.
IF IN DOUBT IMMOBILIZE"**

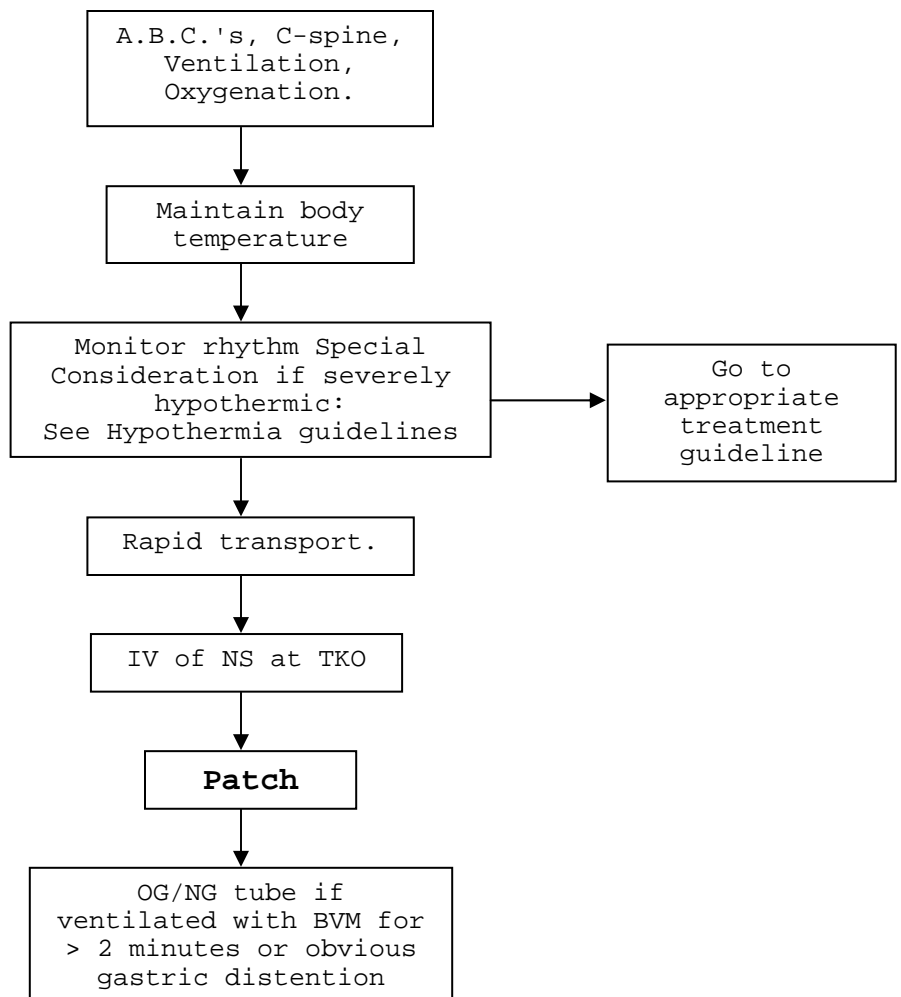
TRAUMA: Submersion incident - ADULT

Applies to a patient with or without respirations and pulse or with significant Alteration of LOC

SPECIAL GENERAL ASSESSMENT CONSIDERATIONS

1. Rescuer Safety
2. Mechanism of injury: Consider water temperature, and potential for C-spine injury or medical cause for drowning,
3. How long was the patient submerged?
4. A.B.C.'s: Assess lungs for fluid. Protect and maintain airway.
5. Vital signs: Include core temperature. Maintain body temperature if hypothermic, discuss rewarming with medical control.

TREATMENT



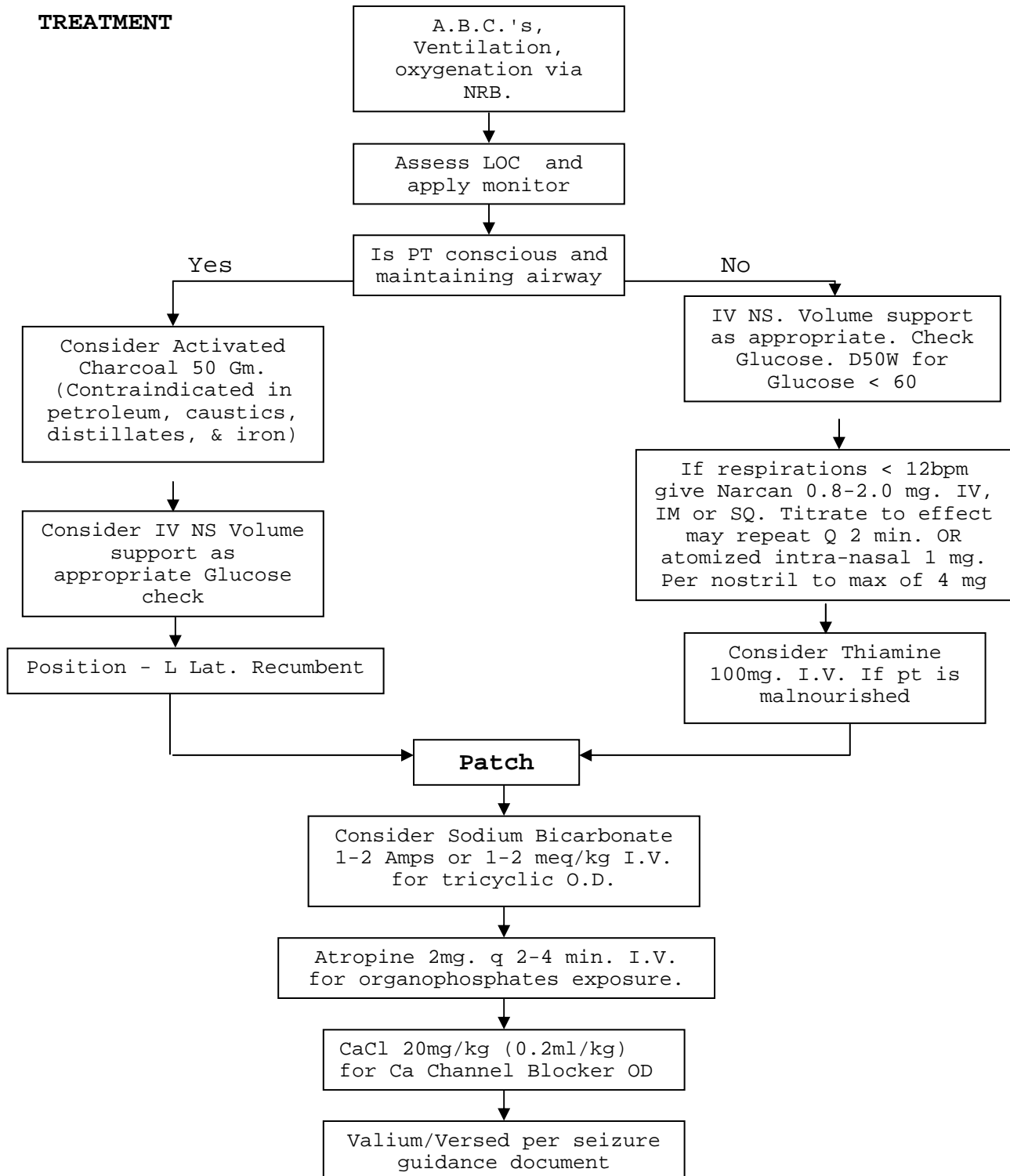
General Medical

POISONING/OVERDOSE - GENERAL

Pts who are suspected or known to have ingested substances with suicidal intent may not refuse transport.

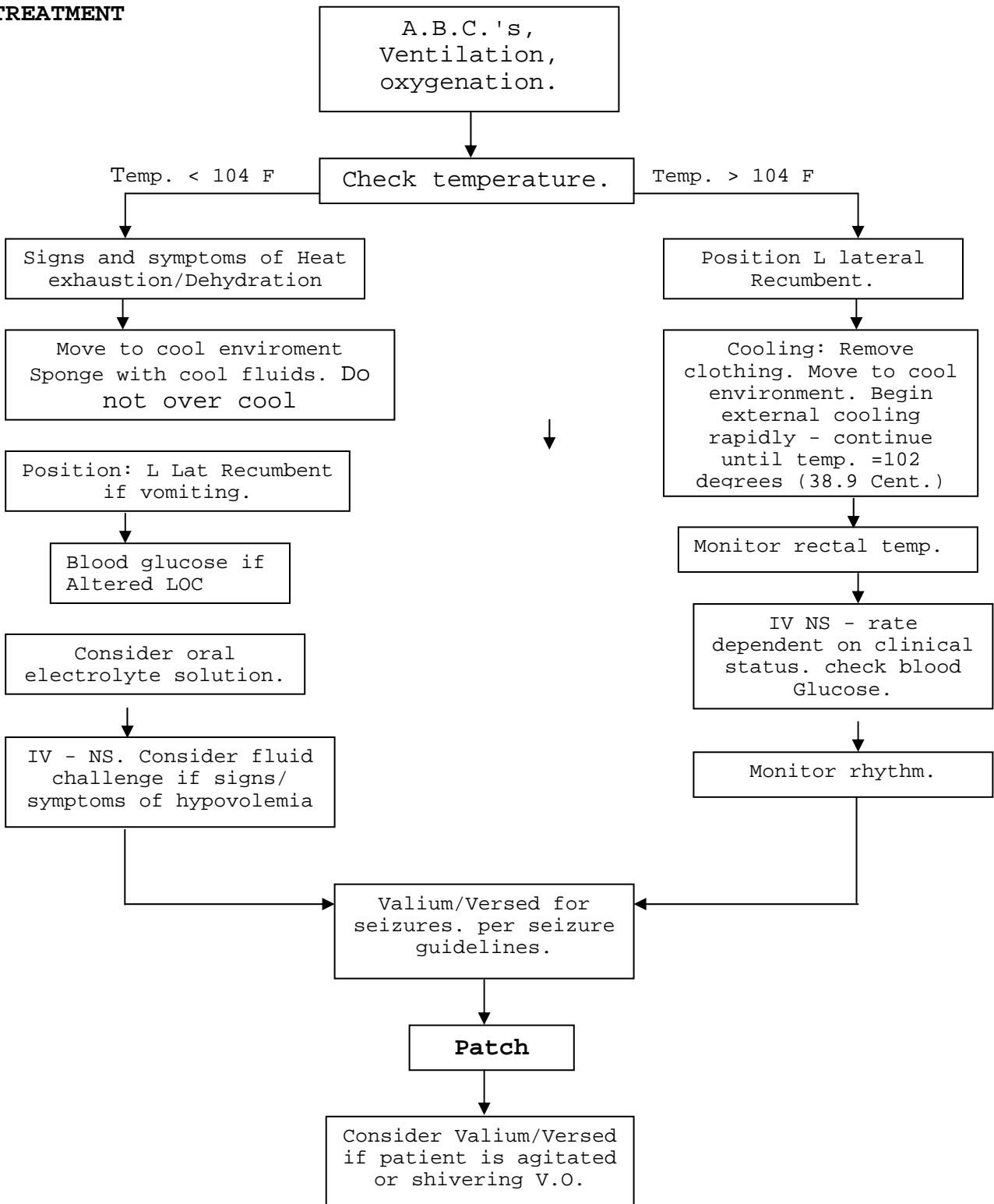
POISON CONTROL: 1-800-362-0101 (University of Arizona, Tucson)
1-602-253-3334 (Samaritan Regional Poison Center)

TREATMENT



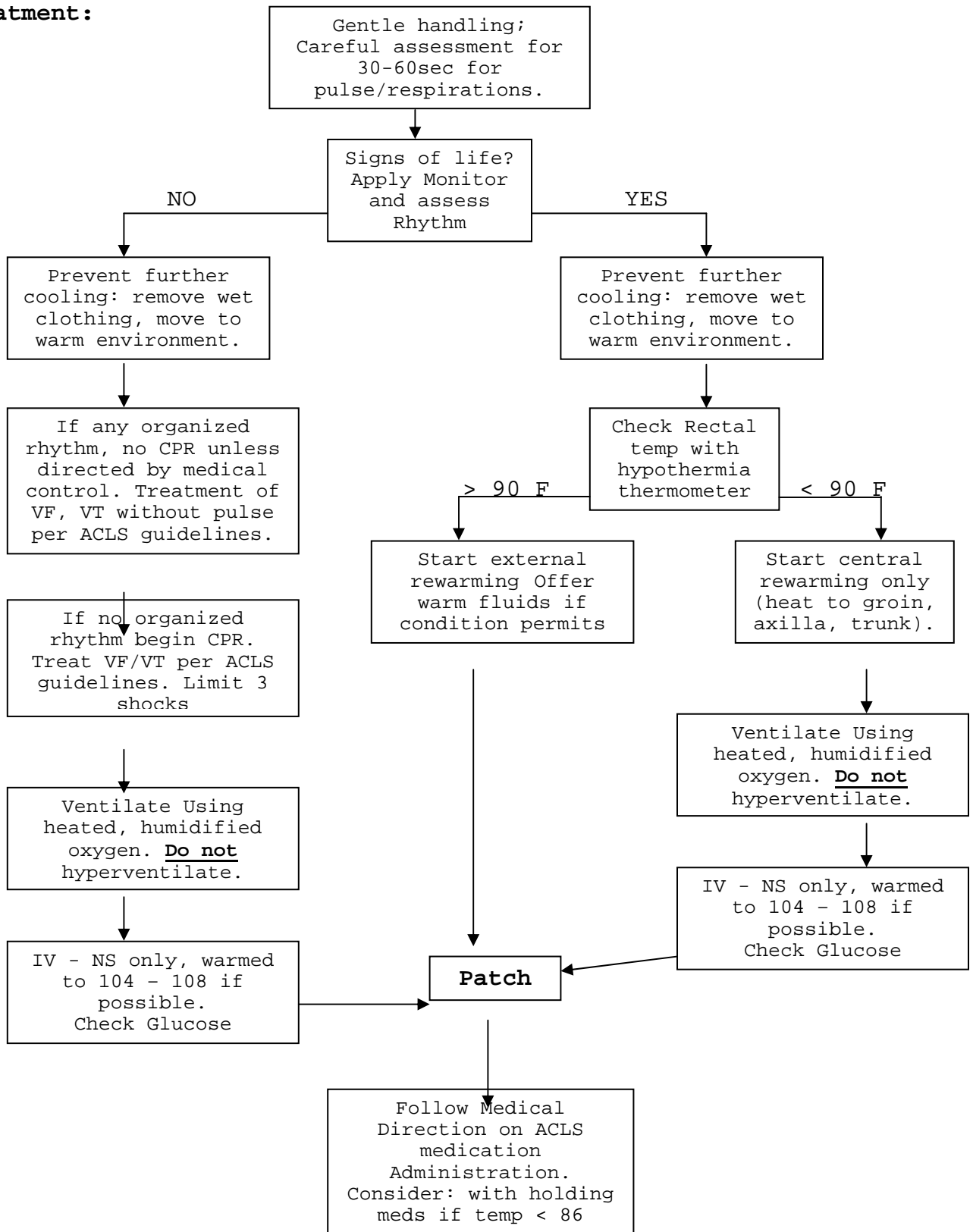
HEAT EXHAUSTION/HEAT STROKE

TREATMENT



HYPOTHERMIA

Treatment:



OBSTETRIC GUIDELINES

The normal process of pregnancy may be altered on occasion by either underlying medical problems e.g., diabetes and heart disease, complications arising from the pregnancy itself, or poor understanding of the labor and delivery process by mother or support personnel.

Assume that a female of childbearing age may be pregnant. Remember airway, breathing, and circulation. Always anticipate the potential for excessive bleeding (large bore IV).

Remember a third trimester uterus can compress the inferior vena cava when patient is supine. This can result in decreased cardiac output and hypotension in the mother with severe consequences to the fetus secondary to decreased blood flow. These patients will need to be transported positioned left lateral recumbent or via some means of keeping the uterus off the inferior vena cava.

HISTORICAL ASSESSMENT

PHYSICIAN'S NAME:

Obstetrician or family doctor.

HISTORY OF PREGNANCY:

Due date or last menstrual period and any problems such as swelling of the face or extremities, pain, bleeding, etc.

MOTHER'S OBSTETRICAL HISTORY:

Number of children and pregnancies (para and gravida), any problems with past pregnancies.

MOTHER'S MEDICAL HISTORY:

Medication, allergies, medical problems (e.g. diabetes, AIDS, herpes, kidneys), drug or alcohol abuse?

CURRENT SITUATION:

Have the membranes ruptured? If yes, what tinge, color, and odor of fluid? Contractions: frequency, and duration? Remember that contractions are measured from the beginning of one contraction until the beginning of the next.

PHYSICAL ASSESSMENT

1. A.B.C.'s.
2. Vital Signs: Include cardiopulmonary status and fetal heart tones, if possible.
3. Neurologic status of mother.
4. Abdomen: size of uterus, height of fundus, time

- contractions.
5. Genitalia: Bleeding? Protruding tissue? Draining fluid? Crowning? Remember to provide for the pt.'s privacy if necessary.

TRANSPORT DECISIONS

Remember to ask how many babies she has had before. The average labor is 14 hours for first delivery. If transporting a woman in labor be calm and reassuring. Instruct mother to take slow deep breaths during the contraction. Instruct mother to "pant breathe" if she feels the urge to push.

TRANSPORT IMMEDIATELY

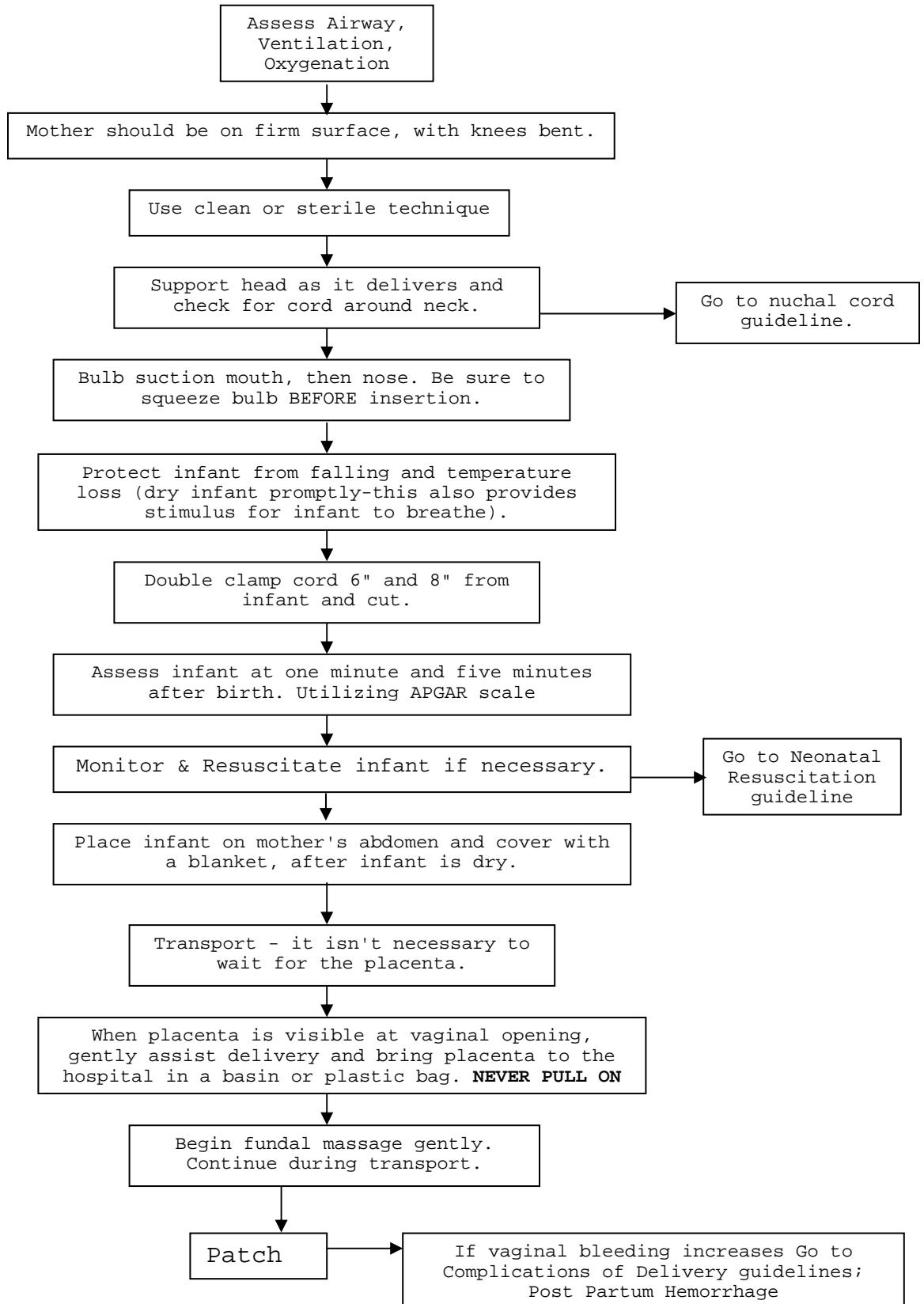
1. First pregnancy if delivery not imminent and second or later pregnancy with contractions measured more than two minutes apart.
2. Mothers with previous Caesarian section.
3. If twins or multiple births are likely.
4. If there is abnormal vaginal bleeding.
5. If there is breech presentation.

PREPARE FOR IMMEDIATE DELIVERY IF:

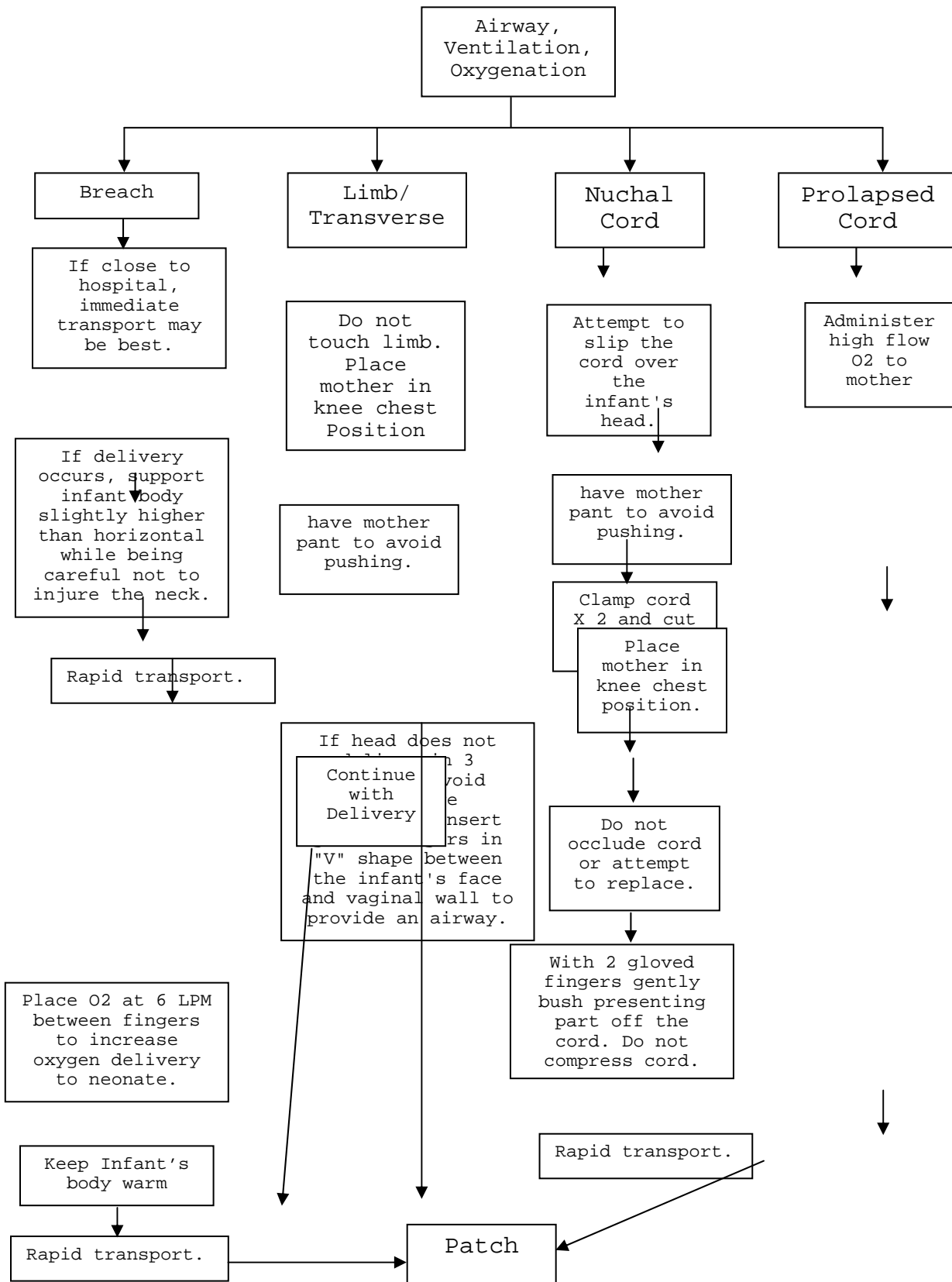
1. Contractions are less than two minutes apart.
2. Perineal bulge obvious and scalp becomes visible (crowning).

OBSTETRIC Delivery:

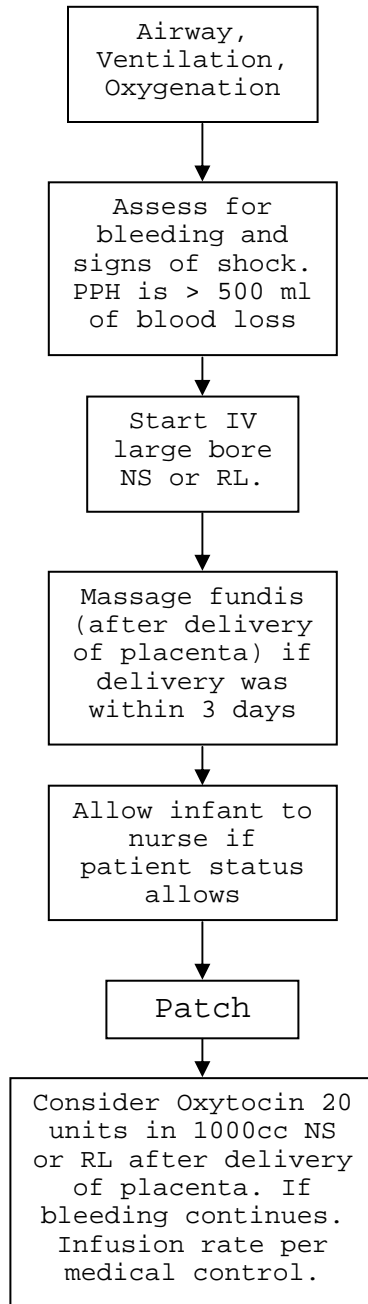
TREATMENT



**OBSTETRICS COMPLICATIONS OF DELIVERY
ABNORMAL PRESENTATIONS**

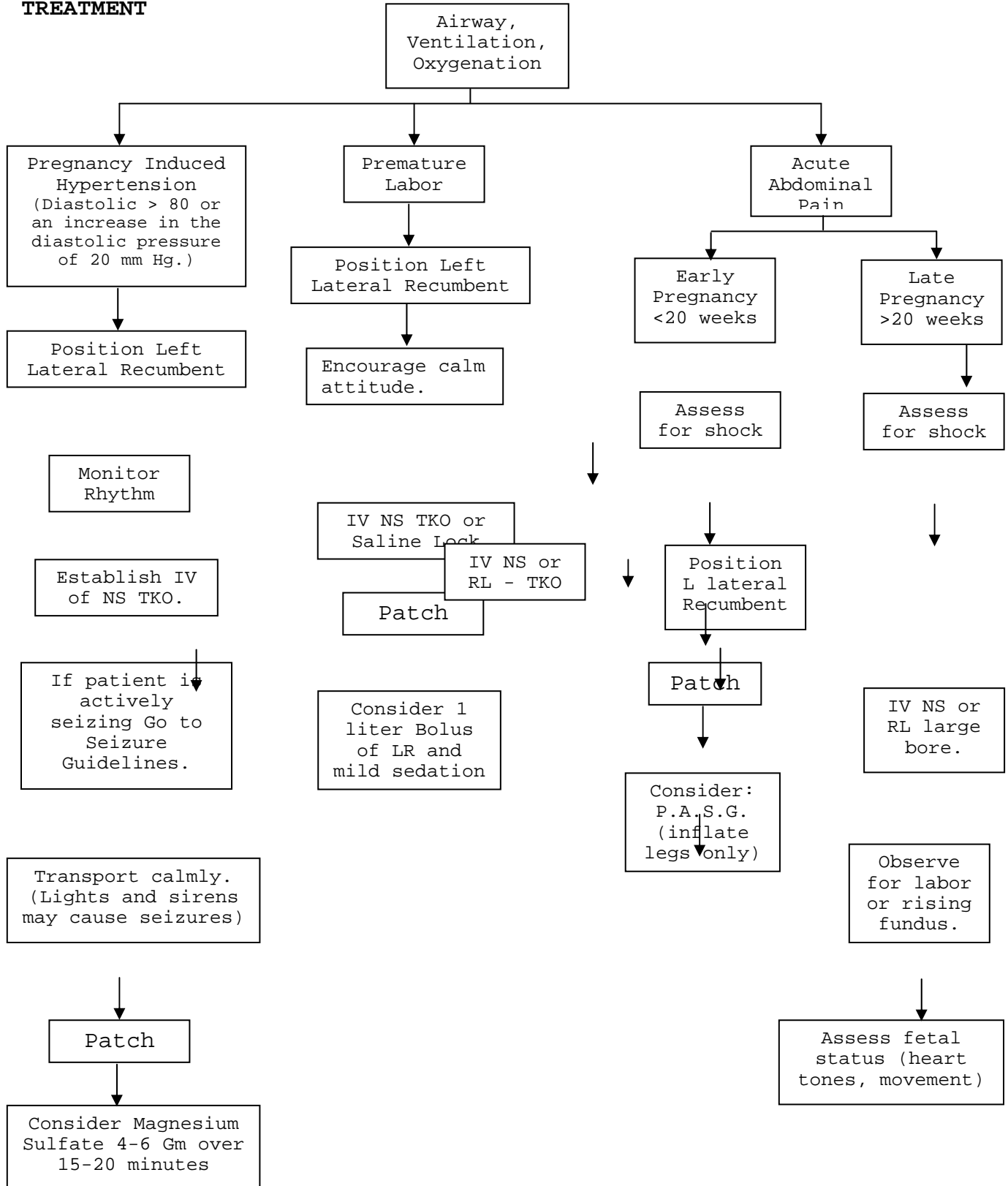


OBSTETRICS COMPLICATIONS OF DELIVERY
Post Partum Hemorrhage



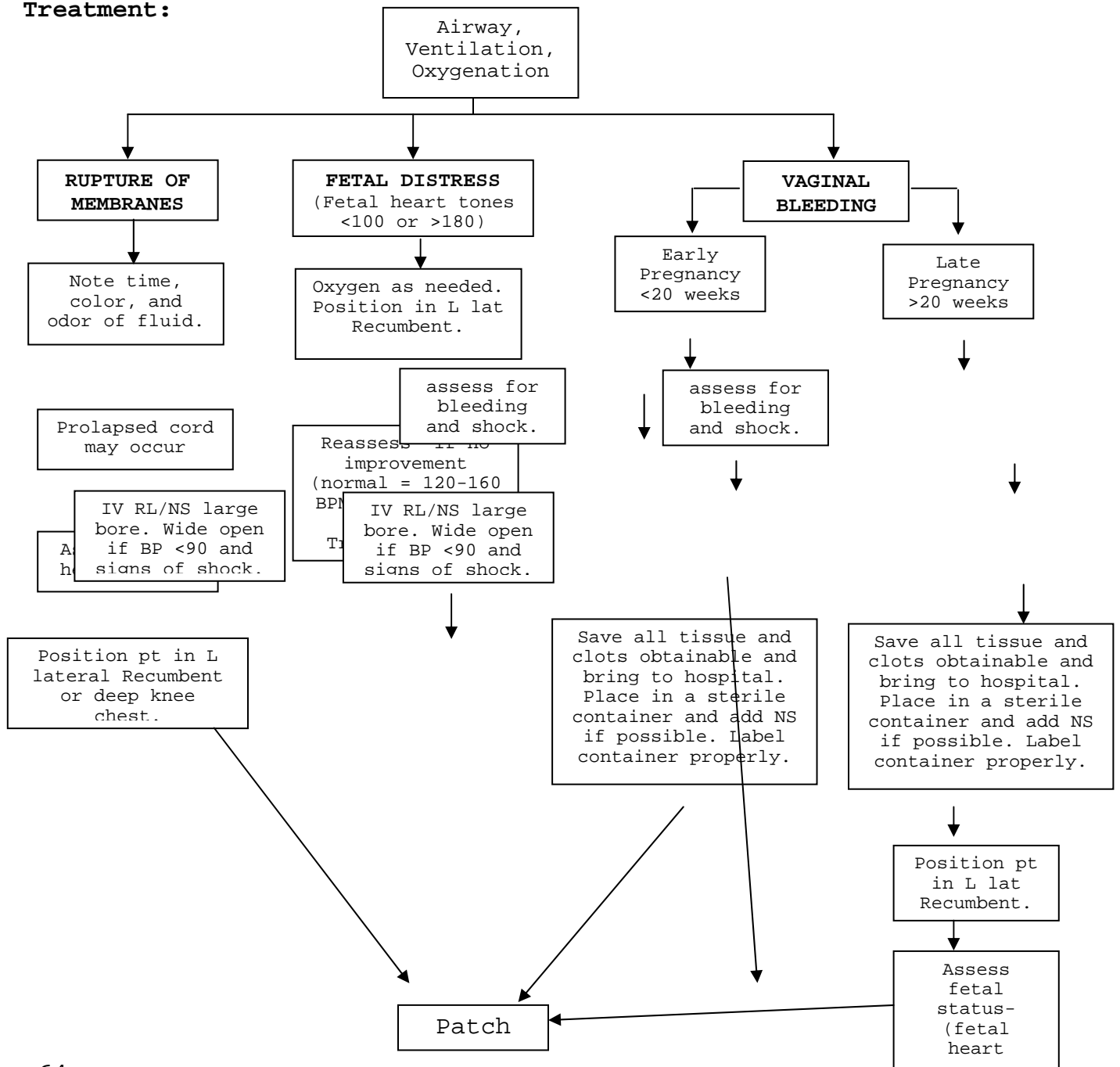
OBSTETRICS COMPLICATIONS OF PREGNANCY

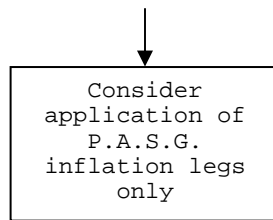
TREATMENT



OBSTETRICS COMPLICATIONS OF PREGNANCY (CON'T)

Treatment:





TRAUMA IN THE PREGNANT PATIENT

Be aware that the pregnant patient who is traumatized is a case of two patients at risk. High flow oxygen and supportive care are the treatments of choice. Rapid transport is critical.

Normal physiological alterations in the pregnant patient include:

- * Pulse rate is 10-15 beats/min faster (should not exceed 100).
- * BP is 10-15 mm Hg lower with widened pulse pressure.
- * Mother has 20-45% greater blood volume.
- * 10-20% more oxygen demand in late pregnancy.

The pregnant patient may not tolerate laying on her back. The fetus can press against the inferior vena cava and produce hypotension from decreased blood return to the heart. Patients of gestation >20 weeks should be positioned to avoid uterine pressure on the vena cava (i.e. L lat Recumbent or wedge under the right side of the board and the uterus pushed to the left).

Remember that predicted transport time is an essential factor in decisions regarding treatment needed. The patient who is 5 minutes from the hospital may need little more than rapid transport, whereas the patient who is an hour from the hospital may need ALS interventions.

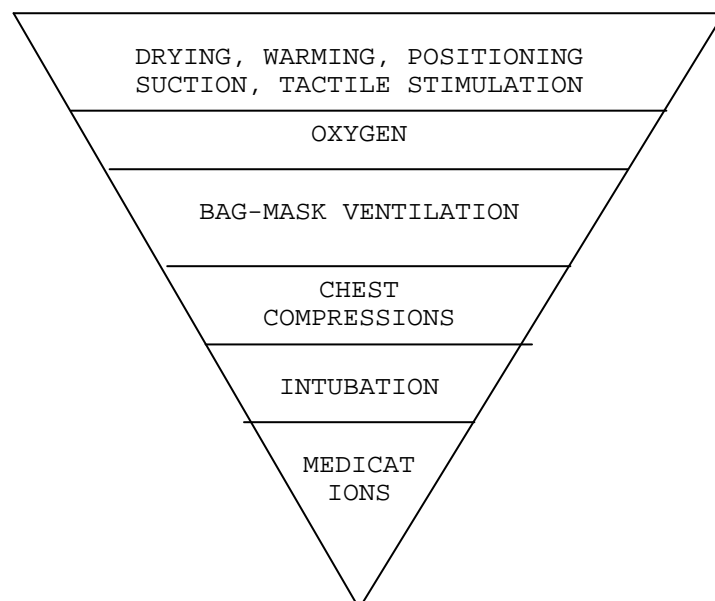
NEONATAL RESUSCITATION

General Principles

Most newborns do well. Clearing the airway, drying, warming, and stimulation, are simple, noninvasive measures to assist the newborn in making the transition from the intrauterine environment to the extrauterine environment.

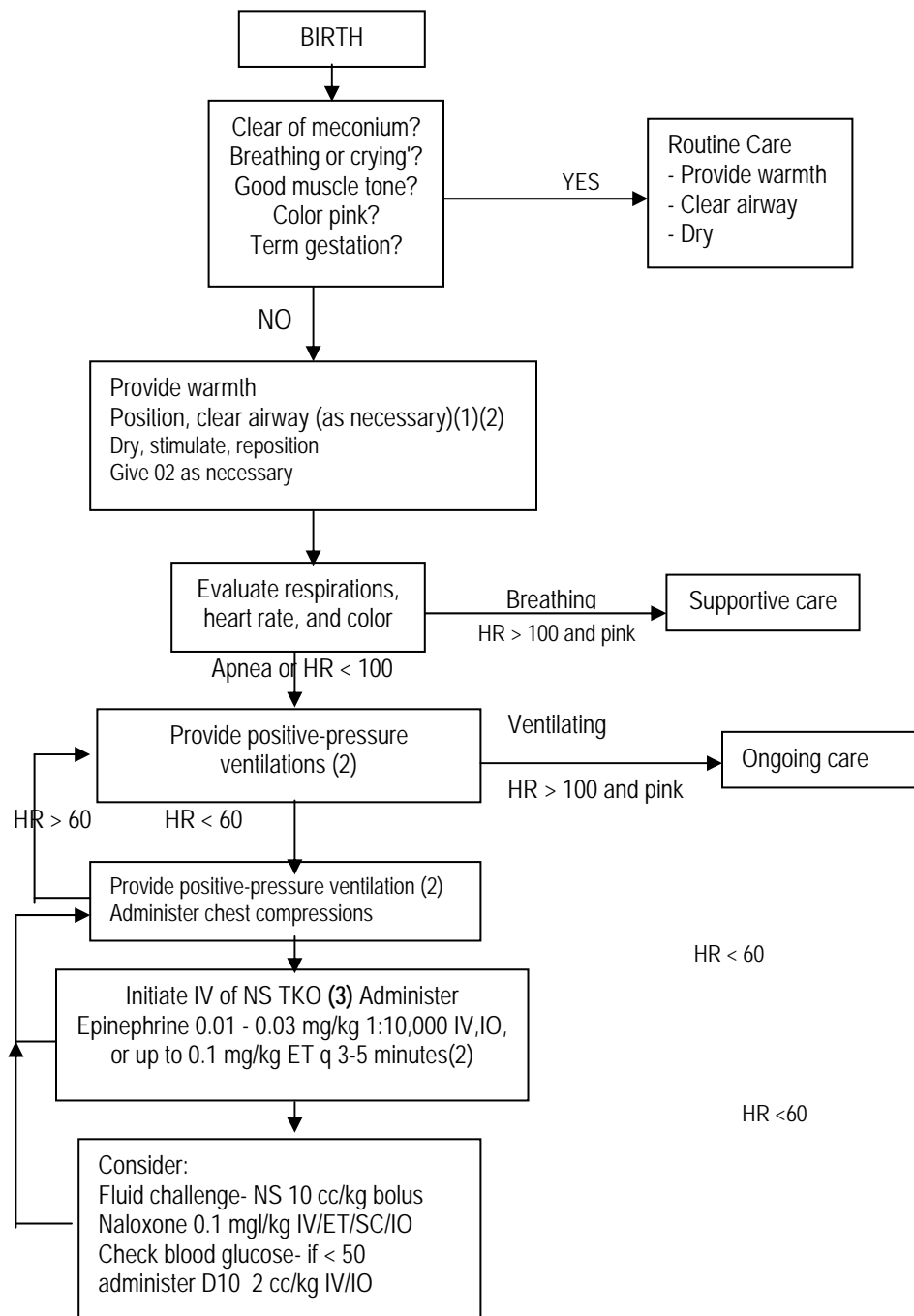
Any newborn that presents with poor color, poor respiratory effort, weak pulses and/or poor tone is very stressed. Most stressed newborns respond to administration of 100% oxygen with bag-valve mask assist for 60-90 seconds. However, if one does not see good improvement (improvement in color, heart rate, and respiratory effort), vigorous resuscitation is in order. One must constantly reassess the newborn that is doing poorly. Perform interventions in response to changes as they occur and transport to the hospital rapidly.

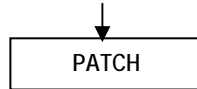
Inverted pyramid: reflects the approximate relative frequencies of neonatal resuscitative efforts.



Note that a majority of infants respond to simple measures. Most infants requiring compressions will usually require intubation and these efforts are often performed simultaneously.

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 umbilical vein if peripheral IV sites inaccessible.

PEDIATRIC/NEONATAL

GENERAL PRINCIPLES

Primary cardiac arrest in young children is uncommon. Establishment and maintenance of a patent airway and maintenance of adequate ventilation are the most important components of BLS.

1. AIRWAY

A. The airway in the infant or child is much smaller than that of the adult. In children younger than 10yrs., the narrowest portion of the airway is below the cords, at the cricoid cartilage.

B. If the child is somnolent or unconscious, the airway may become obstructed by a combination of neck flexion, relaxation of the jaw, posterior displacement of the tongue, and collapse of the hypopharynx.

2. BREATHING

Assess use of accessory muscles, rate, effort, lung sounds (inspiratory vs. expiratory). Use pulse oximetry.

3. CIRCULATION

Proper size B/P cuff is 2/3 the width of the upper arm. Fluid overload can easily occur.

4. TEMPERATURE

Maintenance is a critical issue.

5. GLUCOSE

Small infants and ill children have limited stores. Monitor in all children who fail to respond to standard resuscitation measures.

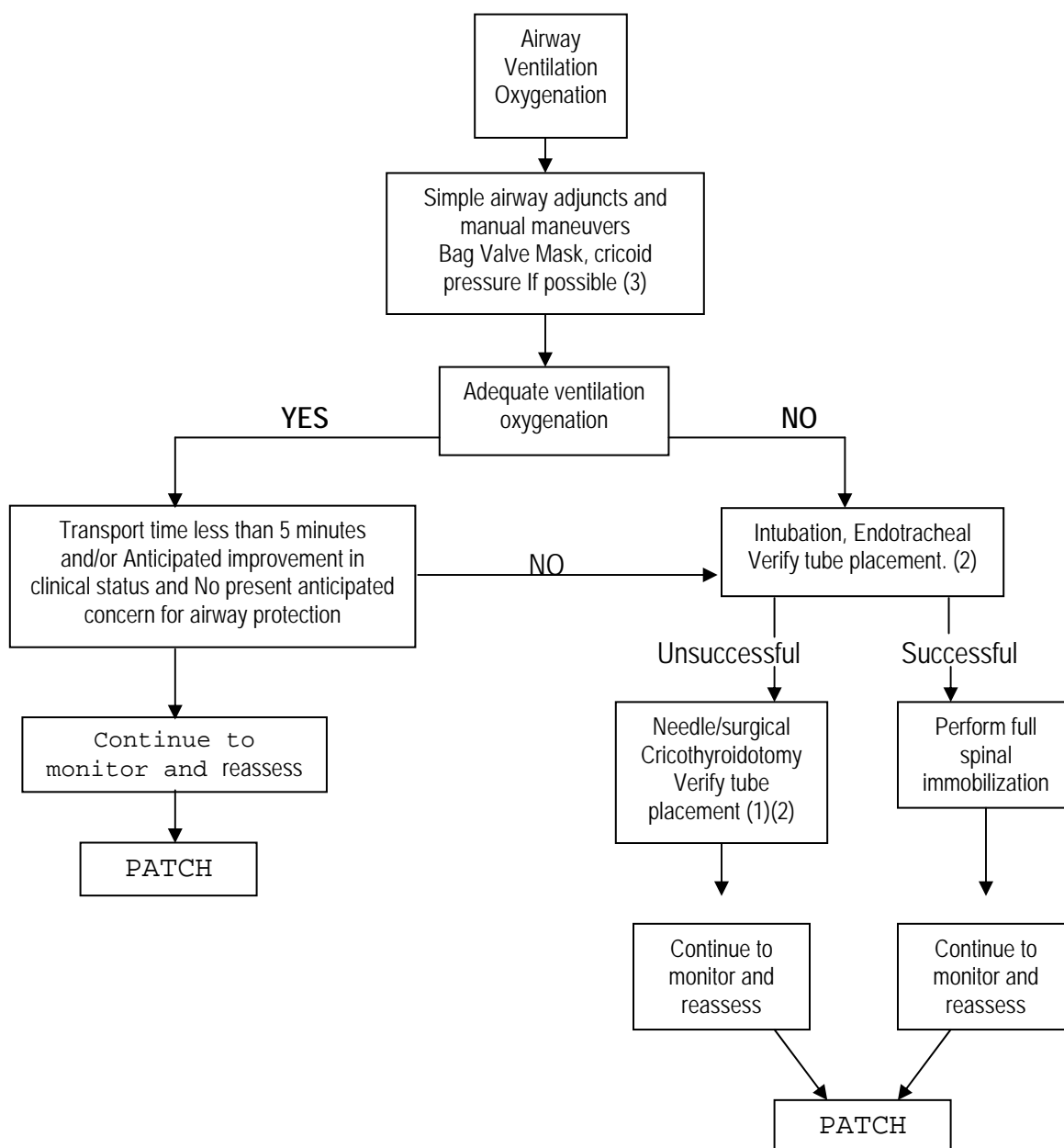
6. LOC

Difficult to assess. (See Pediatric Glasgow Coma Scale)

7. SUSPICION OF CHILD ABUSE

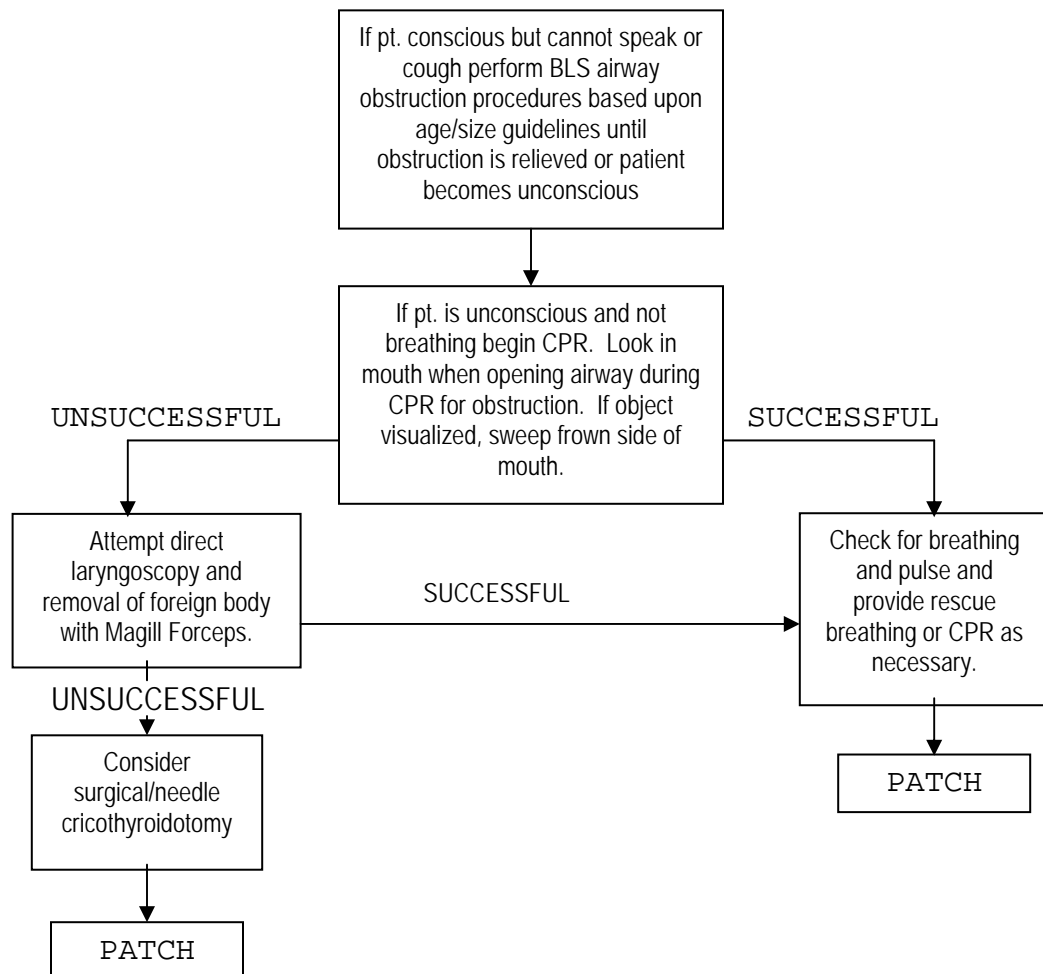
Treat pt for specific injuries. It is your responsibility to privately communicate any suspicion or concerns about possible child abuse to the receiving physician. Make a special effort to objectively document any signs, symptoms and interaction between child and parent while in your presence. It is important to document any objective findings.

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 cricothyroidotomy 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, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient. Surgical cricothyroidotomy contraindicated in children < 8 years old.
- (3) 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.

PEDIATRIC AIRWAY Obstructed



- (1) Verify proper tube placement by bulb tube check/air aspiration (if patient > 5 years old), chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient. Surgical cricothyroidotomy is contraindicated in patients < 8 years old.

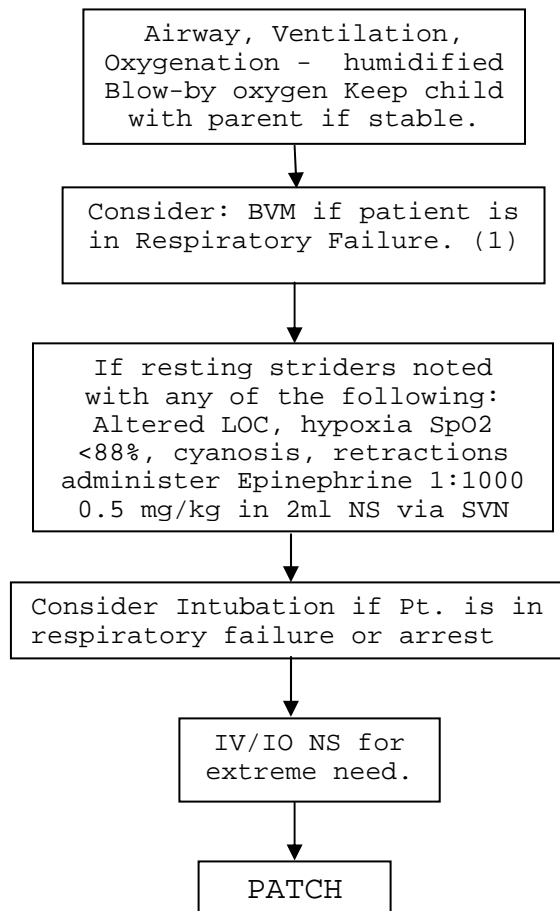
CROUP

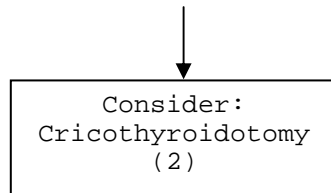
Croup (laryngotracheobronchitis) is a viral infection at the upper airway that causes a child to have a metallic barking cough and stridor. Illness usually is one with a gradual onset and becomes worse at night.

EPIGLOTTITIS

A bacterial infection of the epiglottis which may swell and completely obstruct the airway. It causes pain on swallowing, drooling, high fever, muffled voice, (not a barking cough).

Treatment:



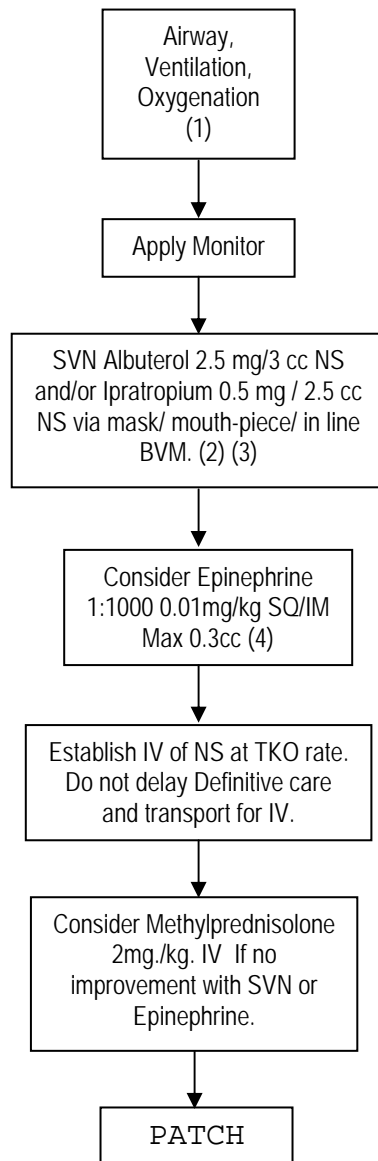


- (1) BVM with reservoir with 100% oxygen is Usually adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
- (2) In patients 8 years old and under only needle cricothyrotomy with transtracheal jet insufflation should be used.

Respiratory arrest or insufficiency - Bronchospasm

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

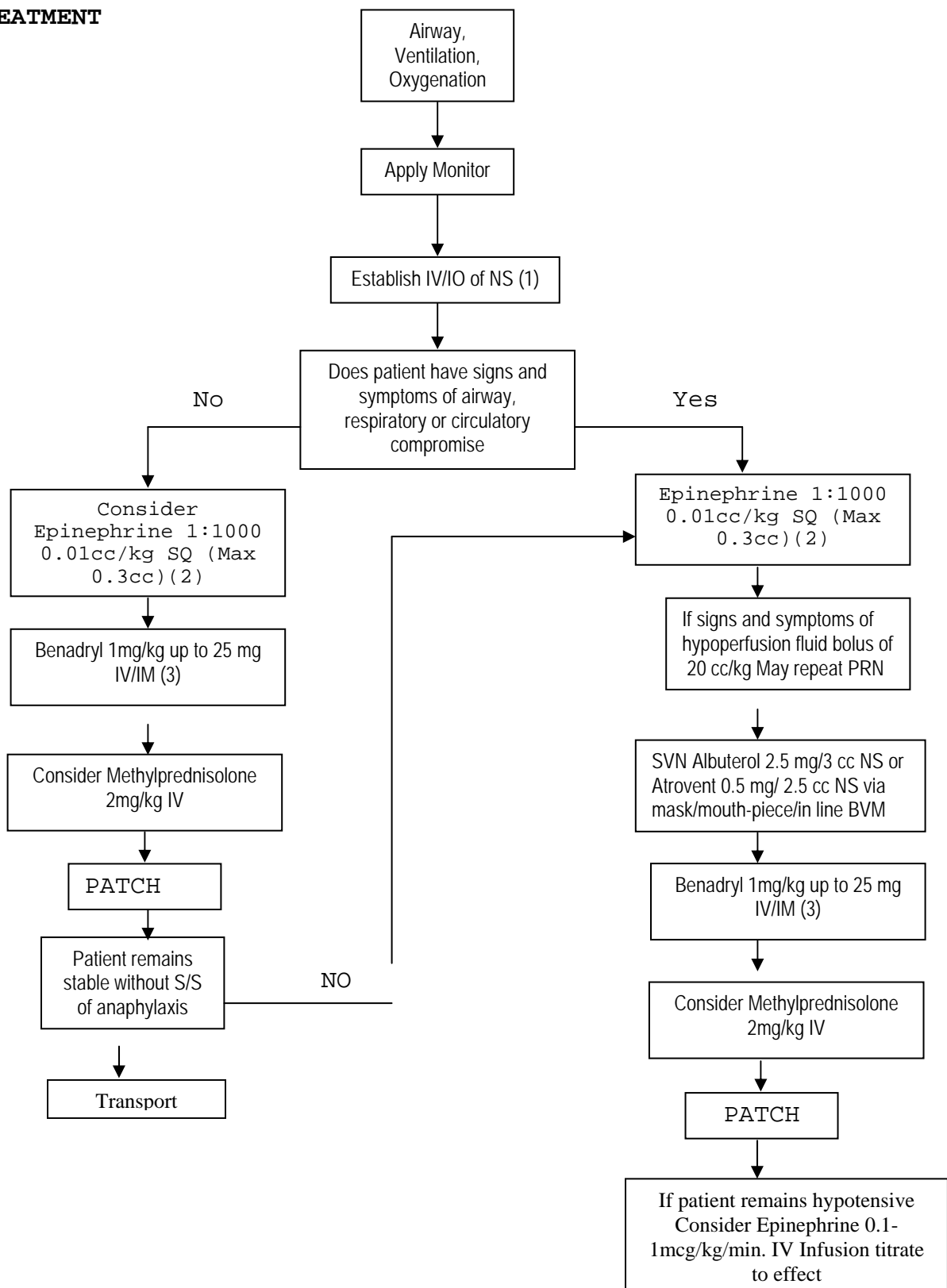
TREATMENT



- (1) Administer Oxygen 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 Ipratropium dose to 0.25 mg in 1.25 cc NS (1/2 unit dose)
- (4) Consider Epinephrine use in patients with poor tidal volumes or poor response to SVN

ALLERGIC REACTION/ANAPHYLAXIS - PEDIATRIC

TREATMENT

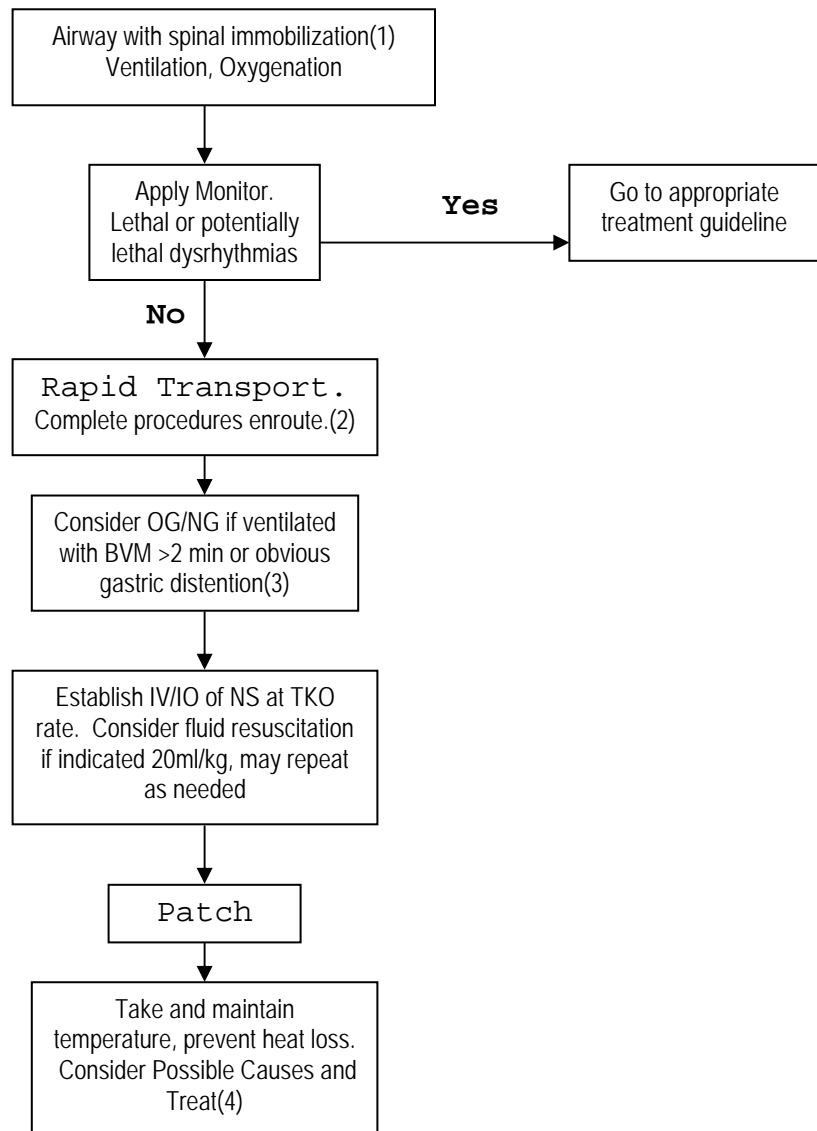


- (1) Establishment of an IV should not delay the administration of SQ Epinephrine to a patient in extremis.
- (2) Consider acuity of onset of symptoms and history of prior anaphylactic reaction. May repeat every 10- 15 minutes.
- (3) If IV cannot be established administer Diphenhydramine IM as soon as possible after Epinephrine SC.

PEDIATRIC - SUBMERSION INCIDENT - CATEGORY 1

Patient with no spontaneous respirations, absent HR, Altered LOC;
HR returns with resuscitation; respiratory status may or may not
improve.

TREATMENT

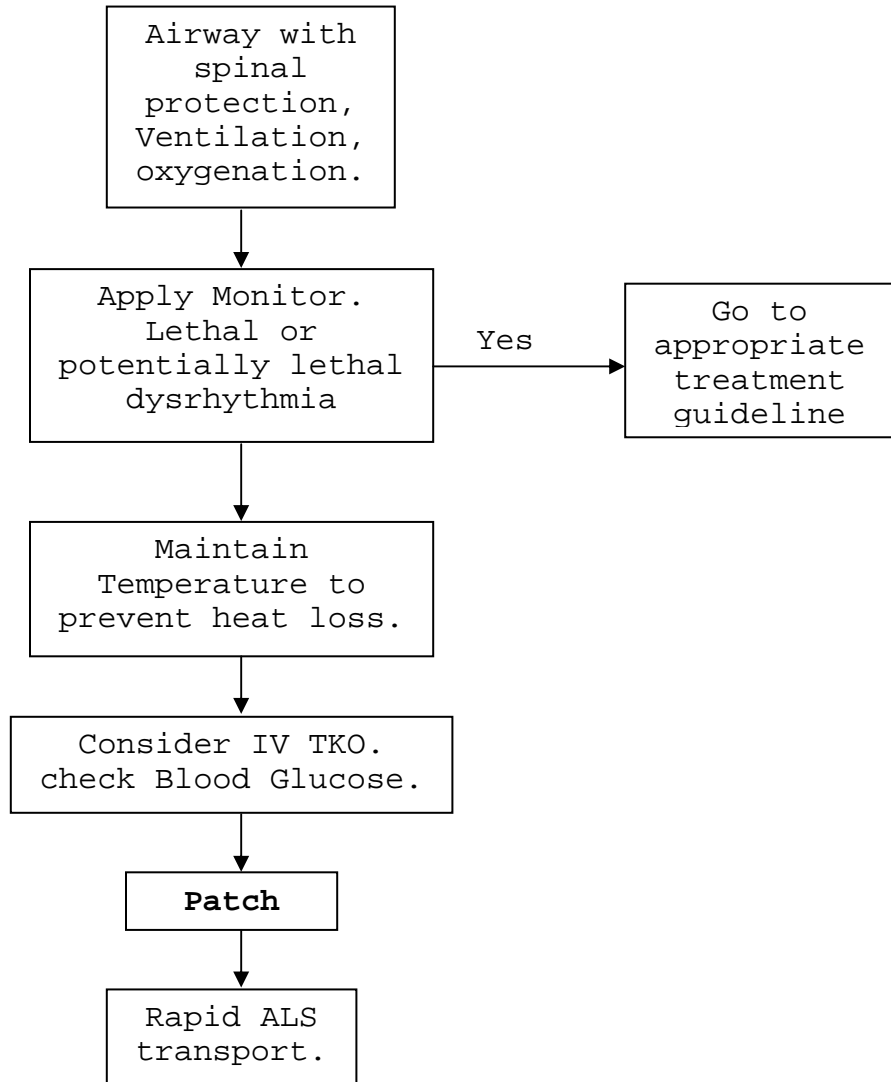


- (1) BVM with reservoir with 100% O₂ may be adequate to provide ventilation and Oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation. 100% Oxygen should be used on all patients
- (2) Rapid transport is of the utmost importance. Advanced life support procedures should be attempted at the scene, but if unsuccessful within a short period of time, the patient should be transported to the nearest appropriate facility without further delay.
- (3) Gastric decompression allows adequate pulmonary tidal volume. Insert 10-16 Fr. NG/OG catheter.
- (4) Hypoxia (ventilate/ re-evaluation): Acidosis (Ventilation/Re-evaluation, Consider orders for Sodium Bicarbonate 1 mg/kg); Tension Pneumothorax (needle decompression); Hypothermia (go to Hypothermia Guideline); Trauma-hypovolemia (volume infusion); Hypoglycemia (check blood sugar).

PEDIATRIC - SUBMERSION INCIDENT - CATEGORY 2

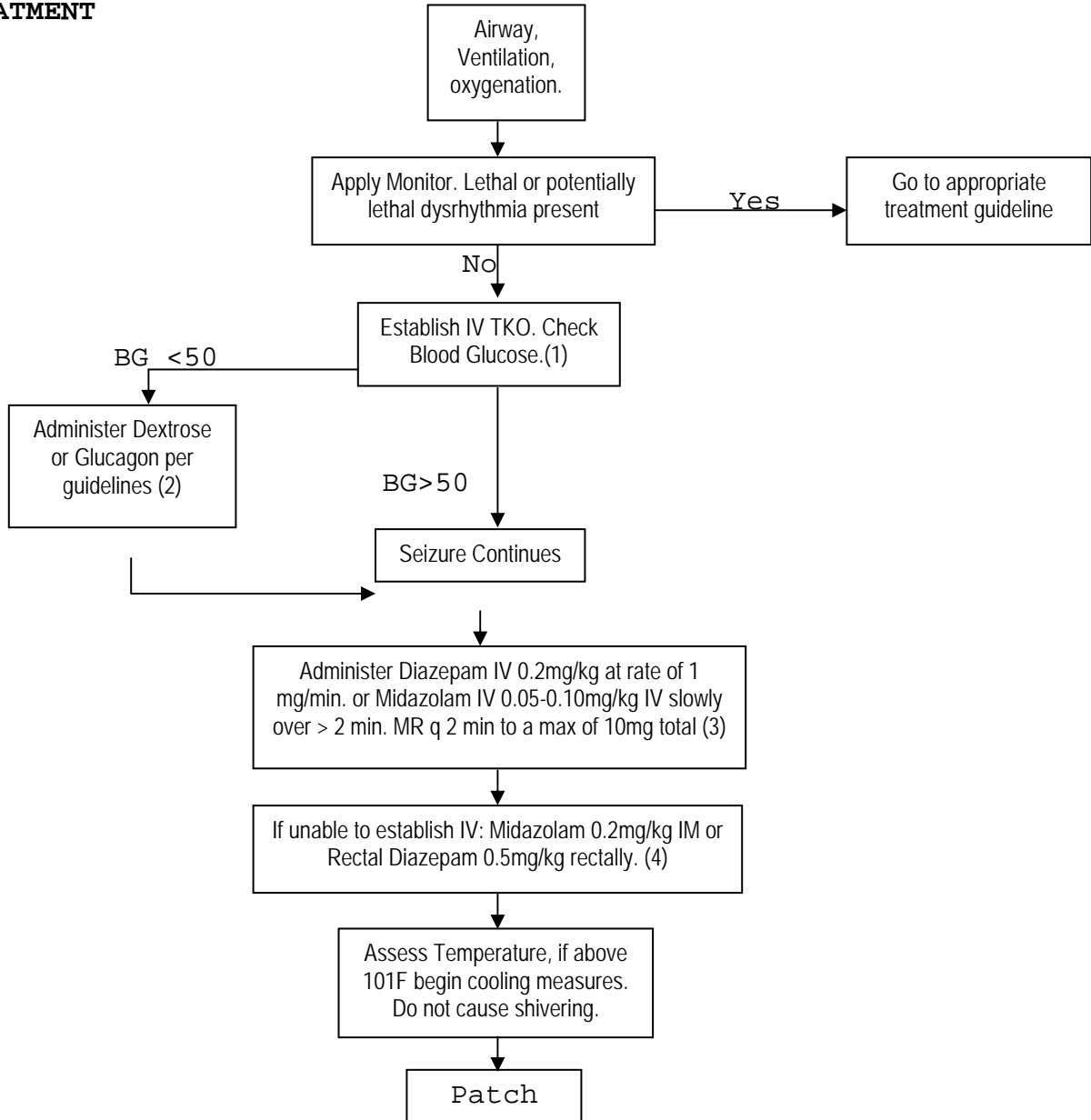
Patient with spontaneous respirations, HR, History of ALOC.
These children require further medical evaluation. Patient
should be transported by ALS ambulance.

TREATMENT



PEDIATRIC - SEIZURES OF UNKNOWN ETIOLOGY
Prolonged, Repetitive, or Status Epilepticus

TREATMENT



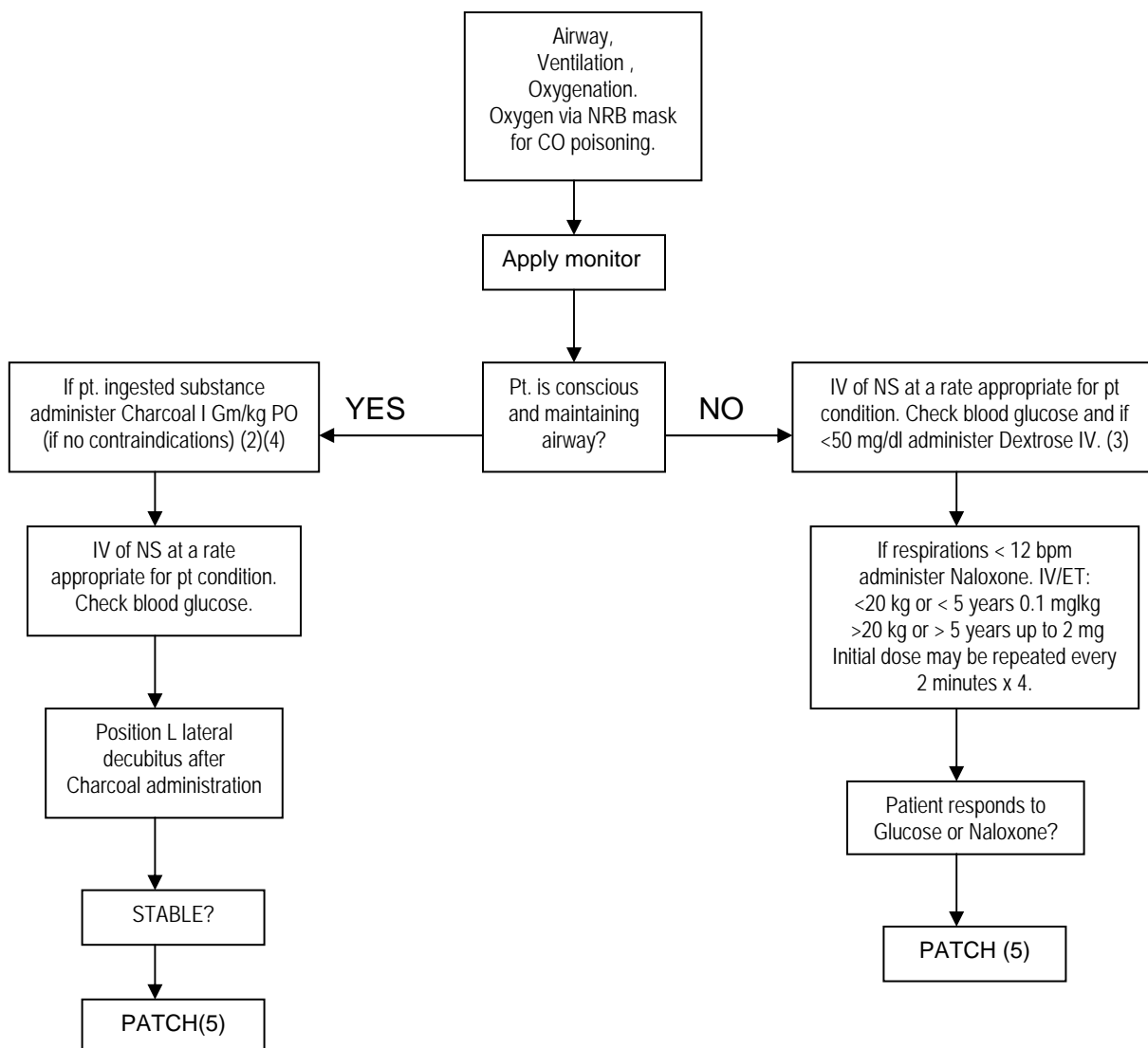
(1) Obtain blood sample if possible.

(2) Administer 0.5 – 1 Gm/kg of Dextrose. For Neonates to one month old administer D10 2cc/kg. For children one month to one year of age administer D10 5-10cc/kg. For children 1-8 years of age, use D25 2-4cc/kg. If unable to establish IV, give Glucagon 0.5 mg IM.

(3) Patch is required to Base Hospital.

(4) Midazolam IM is preferred over rectal Diazepam. Do not delay decision as onset of action is 5-15 minutes.

PEDIATRIC POISONING/OVERDOSE (1)



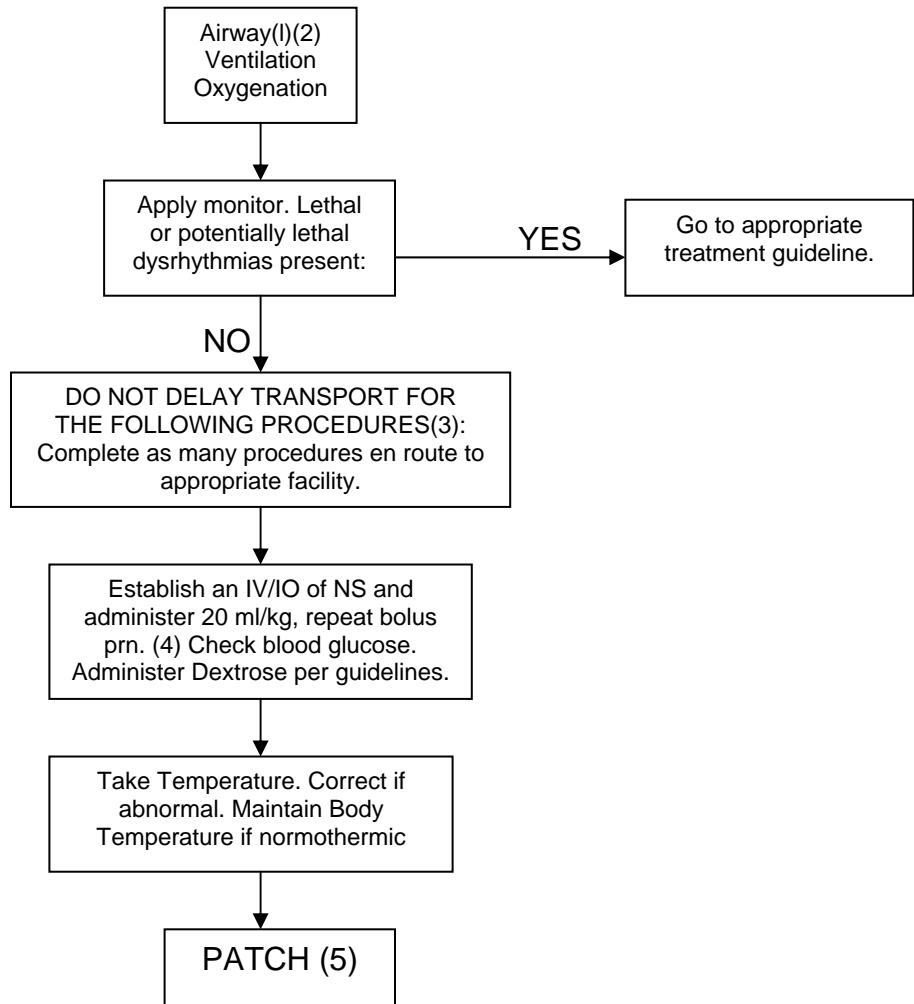
(1) Patients who are suspected or known to have ingested substances with a suicidal intent may not refuse transport.
 (2) Contraindications include caustics and hydrocarbons. Although not contraindicated, charcoal is not effective in pure Lithium or Iron ingestion's.

(3) Administer 0.5 - 1 Gm/kg of Dextrose. For Neonates administer D10 2 cc/kg. For children less than one year of age administer D10 5 -10 cc/kg. For children 1-8 years of age, use D25 2-4 cc/kg. If unable to establish IV, give Glucagon 0.5 mg IM.

(4) Bring bottles/containers if possible. INSPECT SCENE.

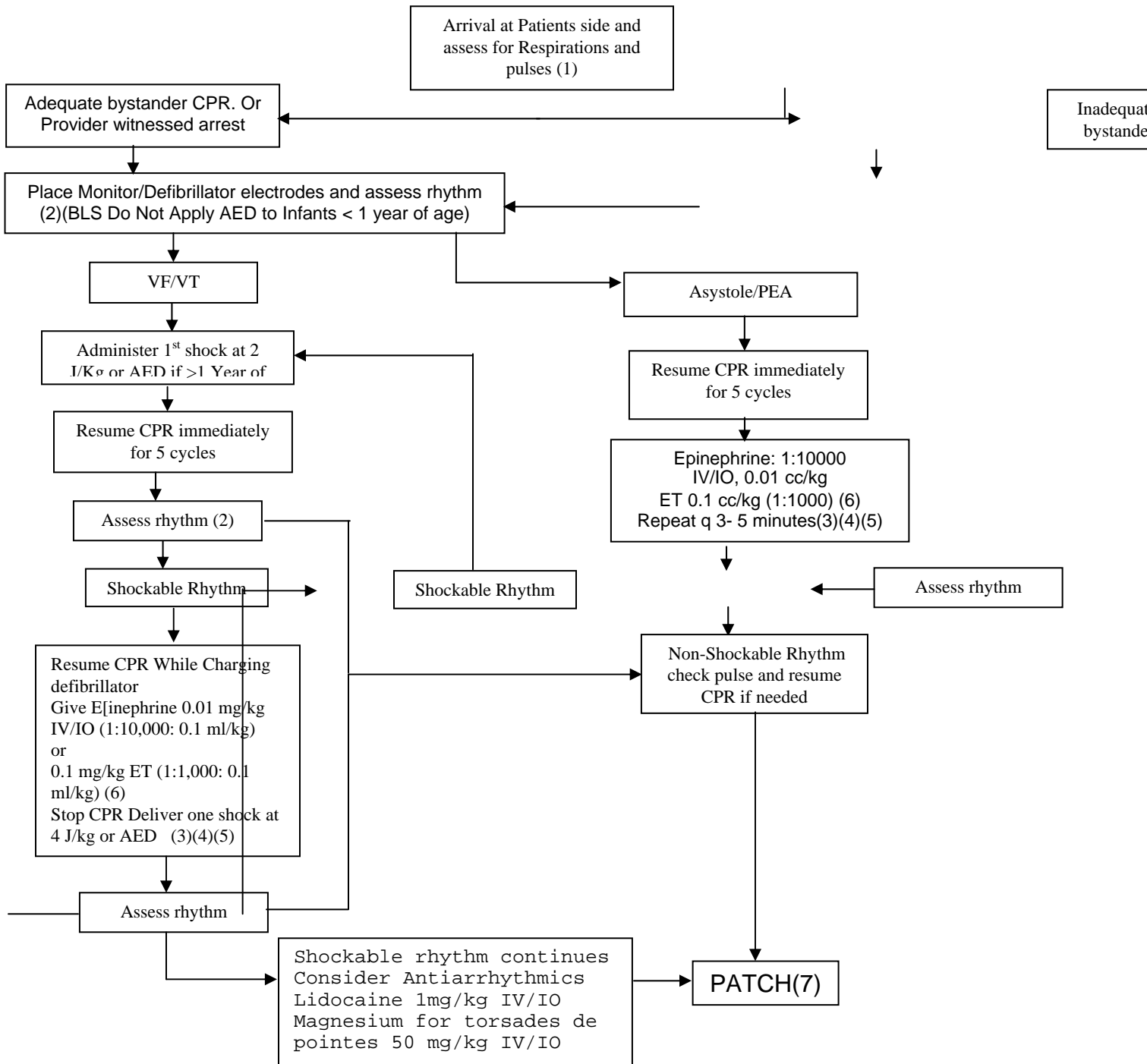
(5) Consider Medical Control input for Sodium Bicarbonate 1-2 mEq/kg for TCA overdose, Calcium Chloride 0.2 cc/kg very slow for calcium channel blocker overdose, Atropine 0.05 mg/kg q 2-4 min. for organophosphate exposure.

**PEDIATRIC-Cardiopulmonary
HYPOTENSION/SHOCK, NON-TRAUMATIC**



- (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. OGING 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 within 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 and/or Epinephrine infusion 0.1-1 mcg/kg/min.

PEDIATRIC- PULSELESS ARREST



(1) If rigor mortis and/or dependent lividity proceed to DOA protocol or consult with base due to family grief reaction.

(2) Assess rhythm with quick look and only check pulse if an organized rhythm is present..

(3) If airway managed with BMV for > 2 minutes, insert 10-18 Fr. OG/NG tube. Gastric decompression allows adequate pulmonary tidal volumes. Intubate if necessary, limit interruptions to CPR

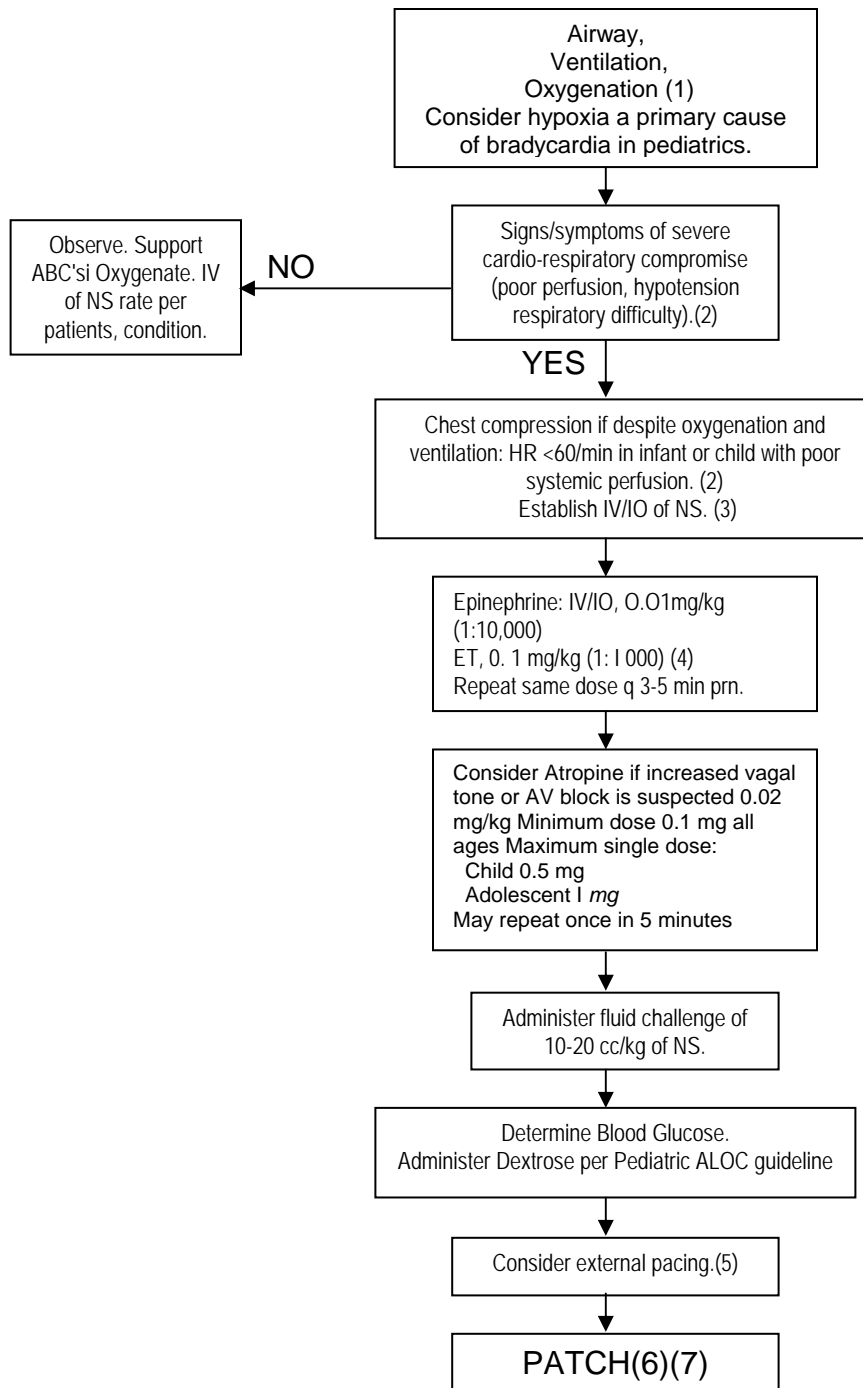
(4) Possible causes and treatment for PEA: severe hypoxemia (ventilate), severe acidosis (ventilate, consider sodium bicarbonate 1 mEq/kg for known metabolic acidosis), severe hypovolemia (fluid bolus 20 ml/kg repeat prn), tension pneumothorax (needle decompression), cardiac tamponade (fluid challenge), profound hypothermia (warm patient, monitor temperature), OD (examine scene).

(5) Consider IO use if IV access unavailable,

(6) Dilute Epinephrine 1:1000 in 3-5 ml of NS and flush.

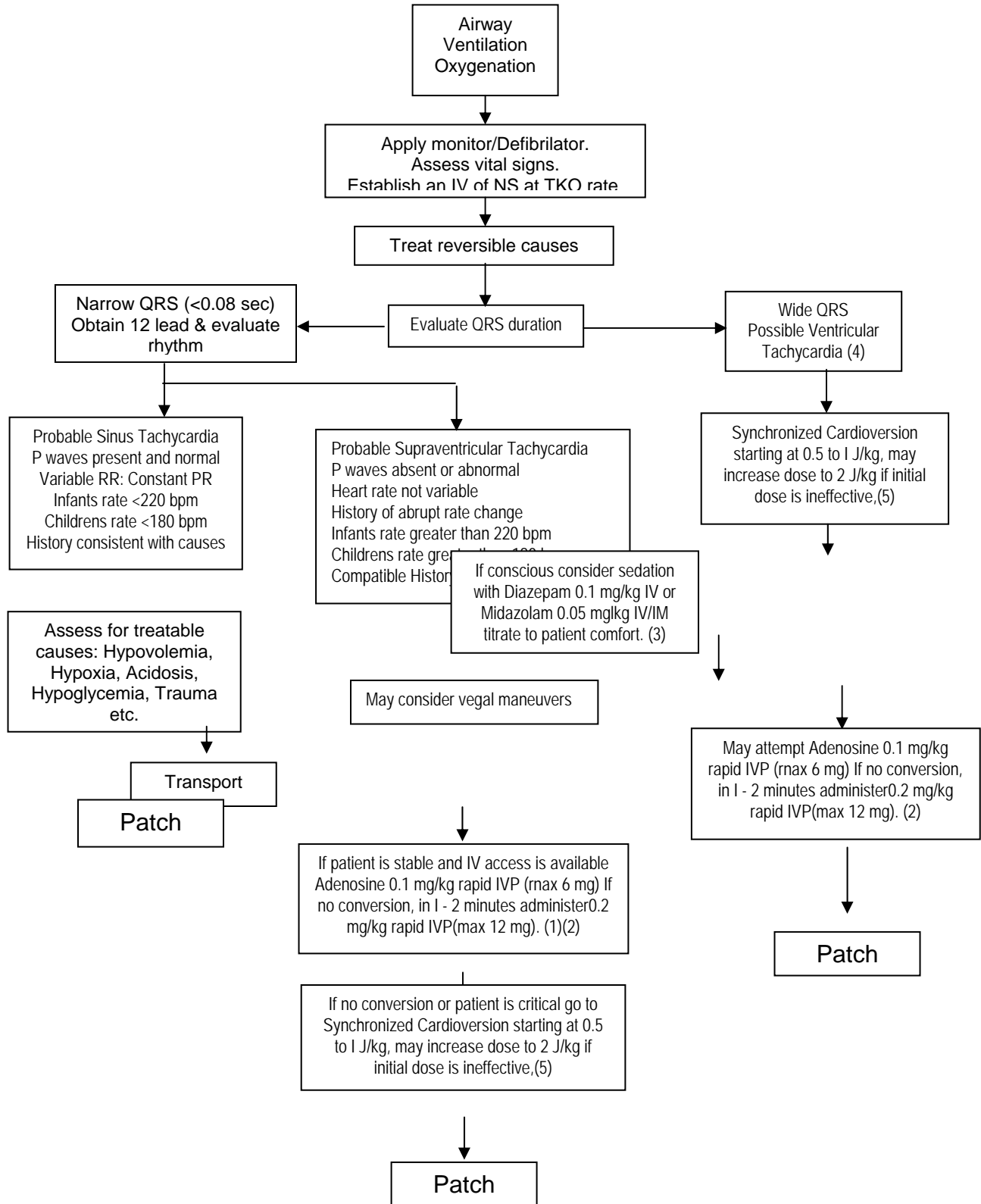
(7) Rapid transport: treatments to occur enroute.

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) Dilute 1: 1,000 Epinephrine with 3-5 ml of NS flush.
- (5) Limited pediatric data; 15 kg or less pediatric electrodes recommended. For greater than 15 kg use adult electrodes.
- (6) Consider Medical Control input to administer Epinephrine IV continuous infusion at a rate of 0.1 to 1 mcg/kg/min.
- (7) Rapid transport is essential in these situations. The above procedures should be performed as the patient is being moved towards the hospital.

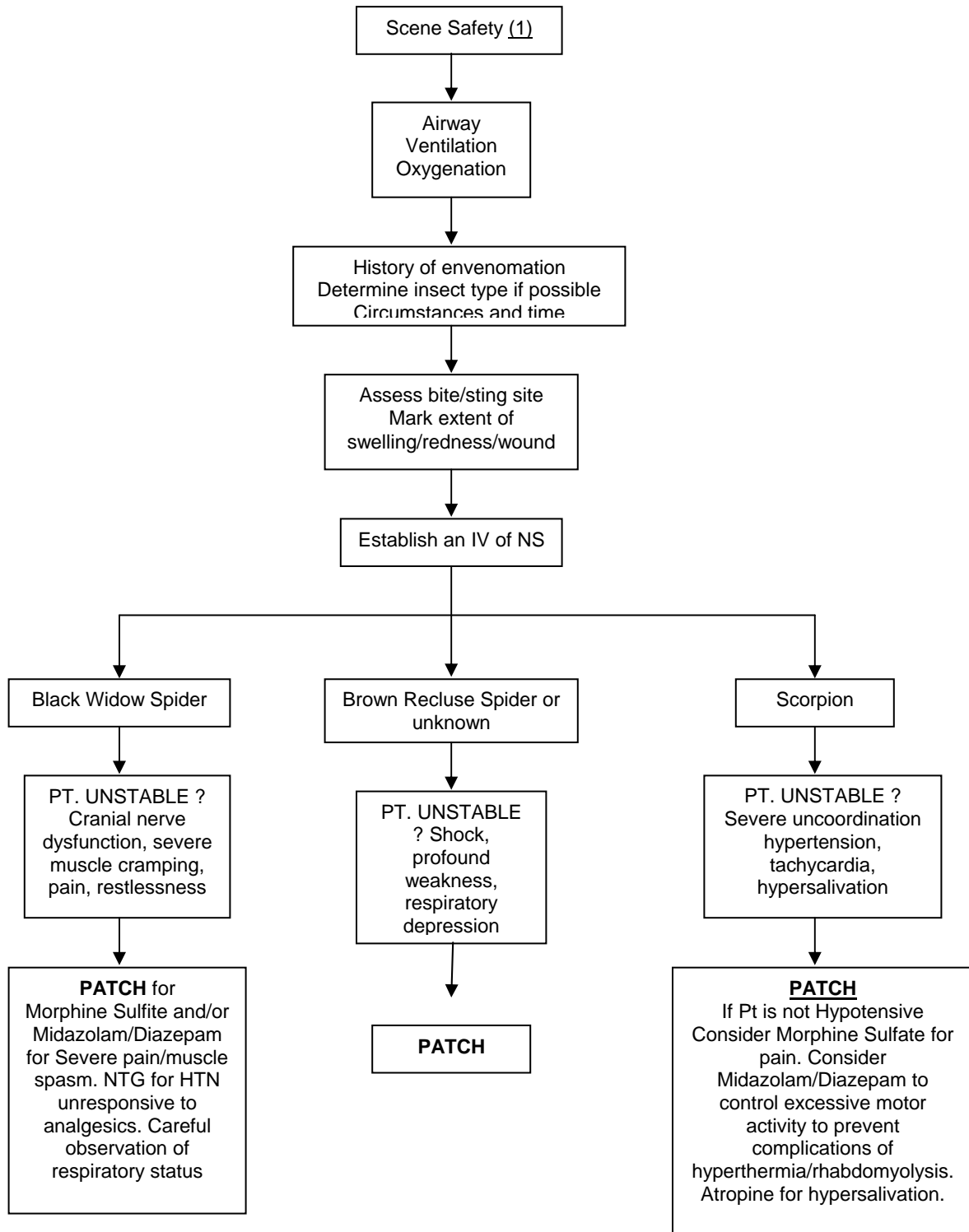
PEDIATRIC Tachycardia with a pulse



- (1) 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.
- (2) The medic should consult Medical Control and consider reducing the Adenosine dosage in patients who are on Dipyridamole (Persantine) and Carbamazepine (Tegretol)
- (3) Medical control contact required when sedation is used.

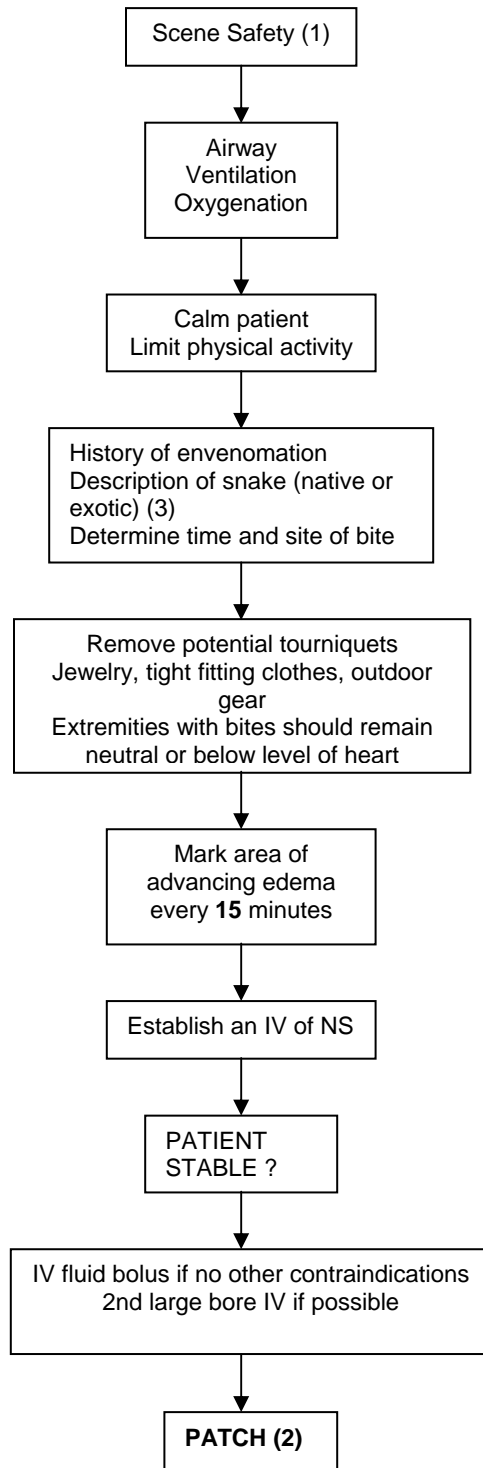
- (4) Consider 12 lead EKG.
- (5) Or biphasic equivalent.

PEDIATRIC ENVENOMATION- ARACHNIDS



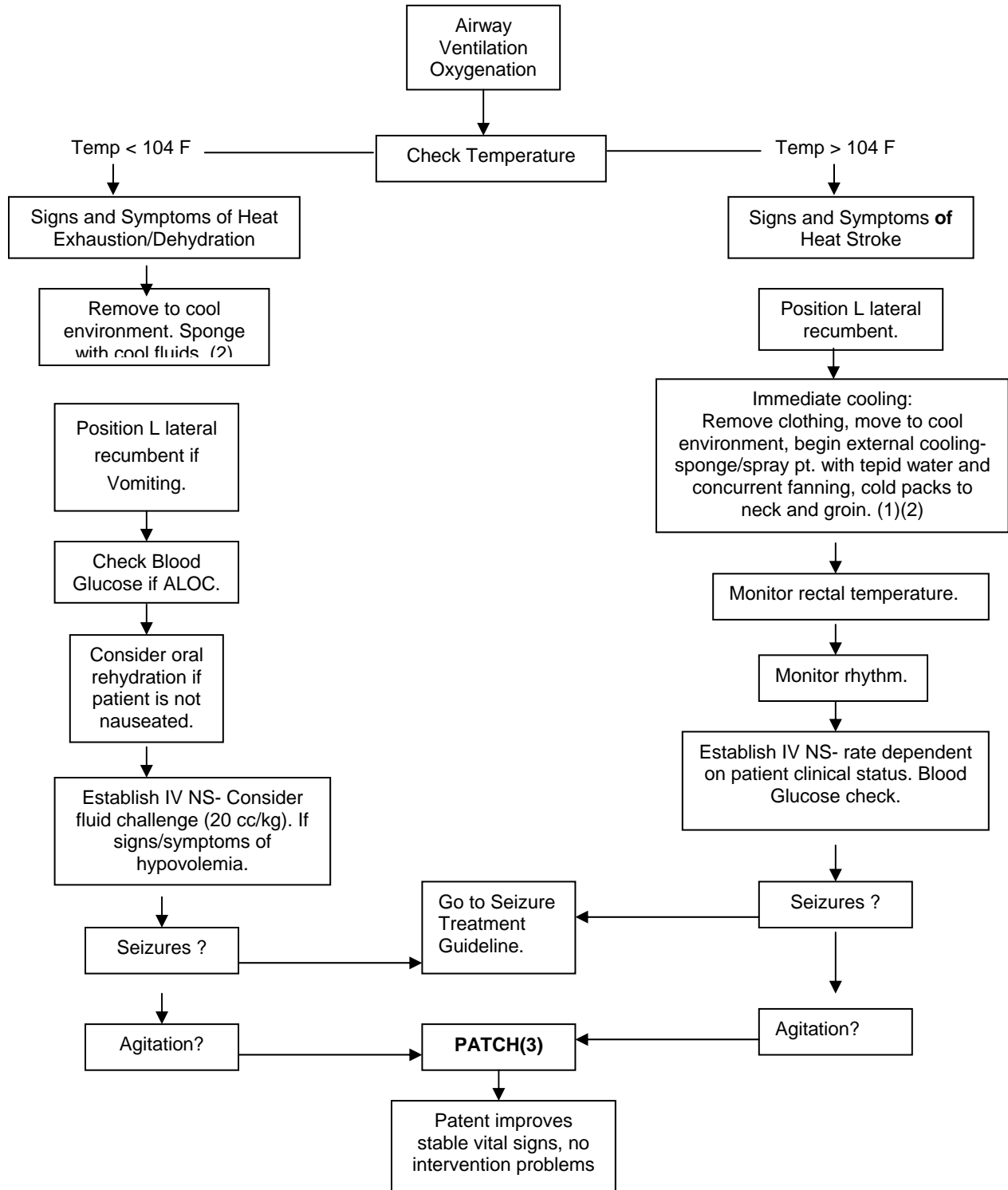
(1) Attempts to kill or capture insect or bring to ED are not recommended.

PEDIATRIC ENVENOMATION- SNAKE BITES



- (1) Attempts to kill or capture the snake or bring dead animal to ED are not recommended.
(2) Contact Medical Control for Morphine Sulfate 0.1 - 0.2 mg/kg IV for pain management.
(3) Many exotic snakes are neurotoxic so respiratory status must be monitored carefully.

PEDIATRIC ENVIRONMENTAL- HEAT RELATED

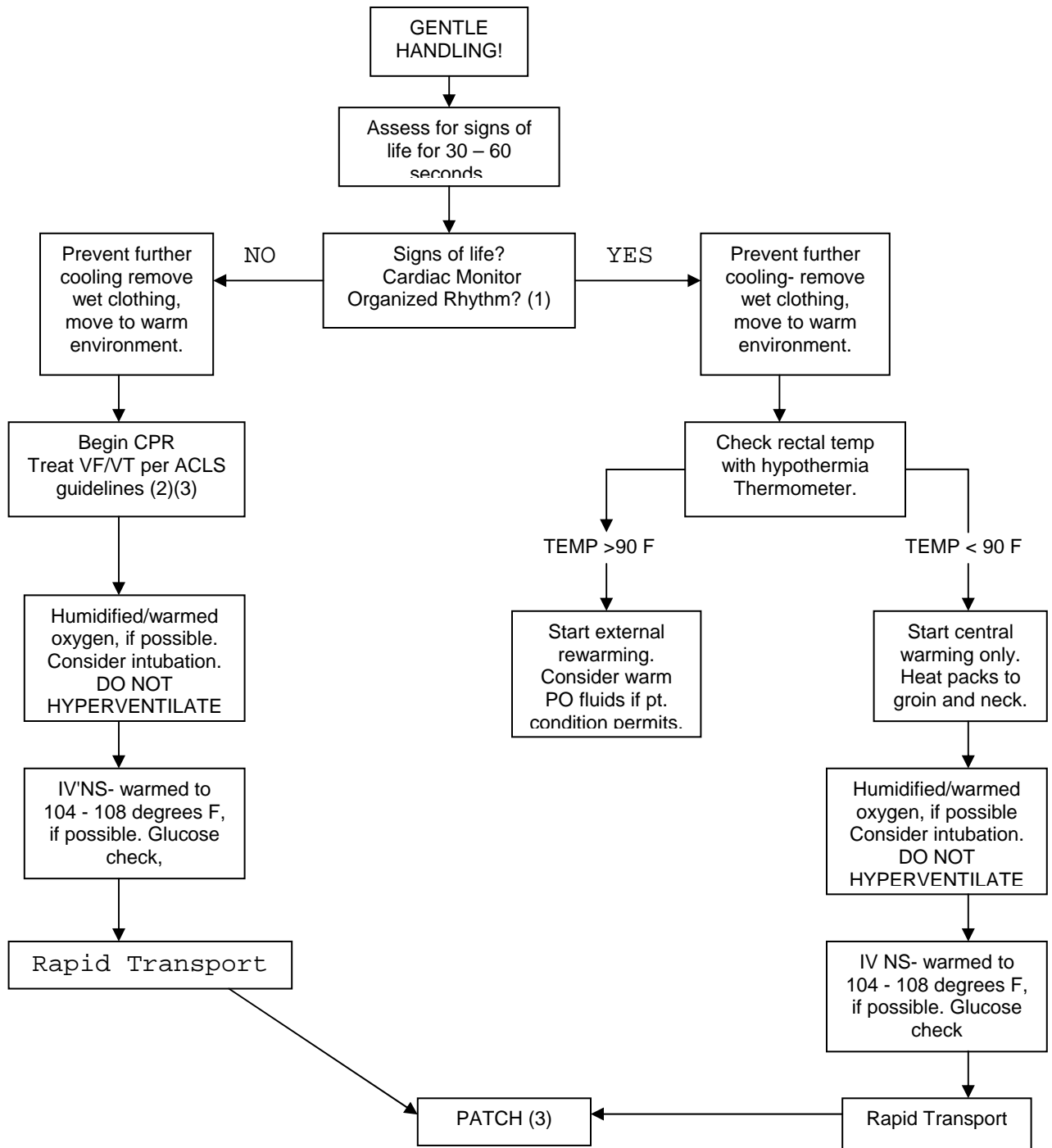


(1) Do not cool below 102 degrees F.

(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

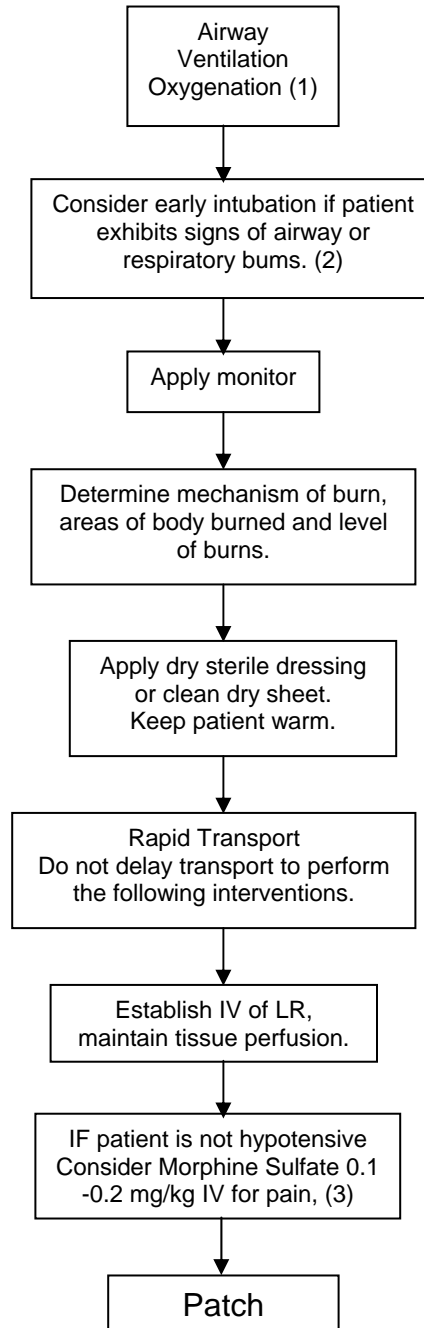


(1) If there is an organized rhythm do not begin CPR unless directed by Medical Control.

(2) Utilize only 1 shock.

(3) Contact Medical Control for ACLS medication administration regimen. Consider with holding medications if core temperature is ≤ 86 degrees F and an extended time between doses if temperature is > 86 degrees F

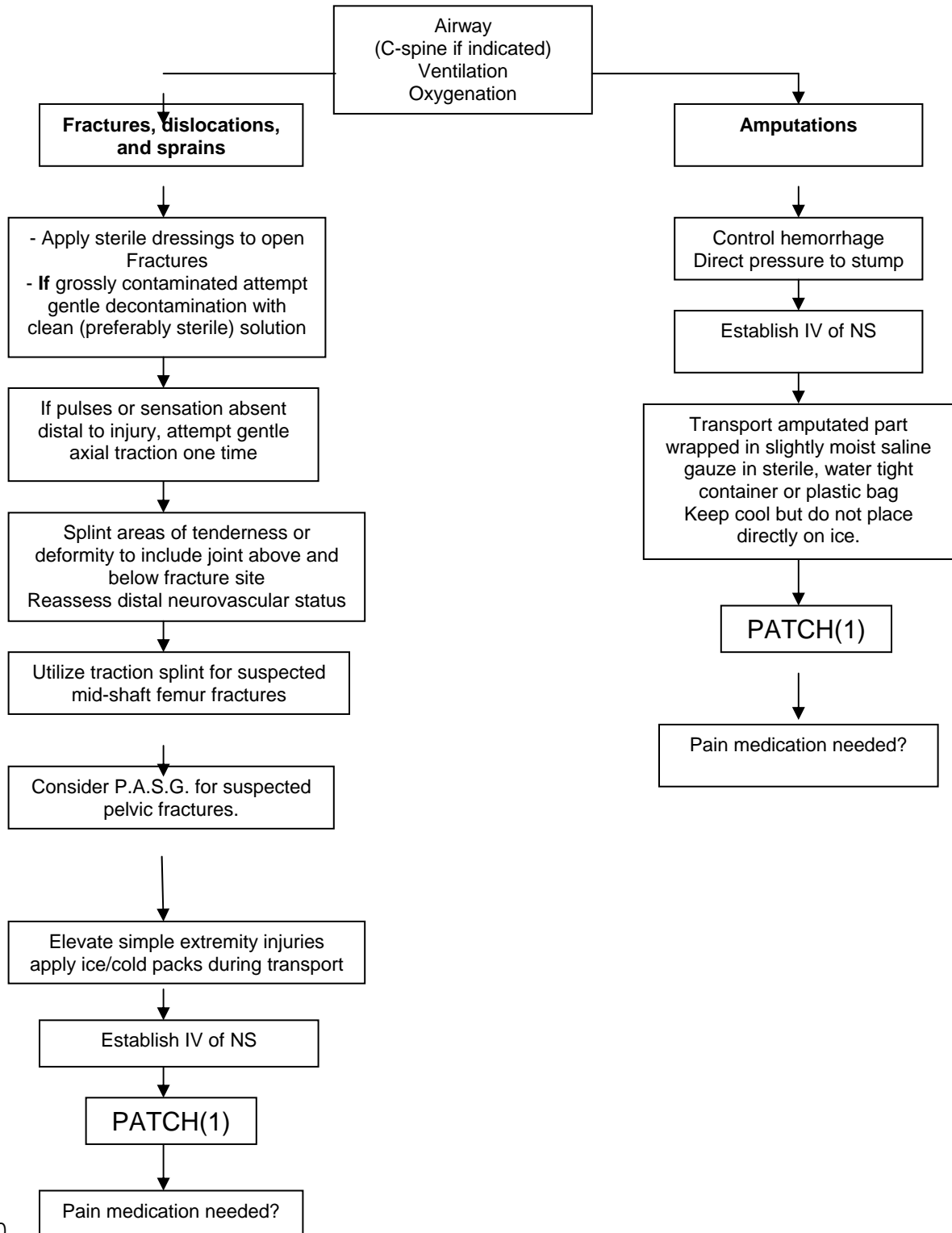
PEDIATRIC TRAUMA- BURNS



(1) If patient or clothing still burning cool hot areas immediately. Flush chemical burns for 20 minutes.

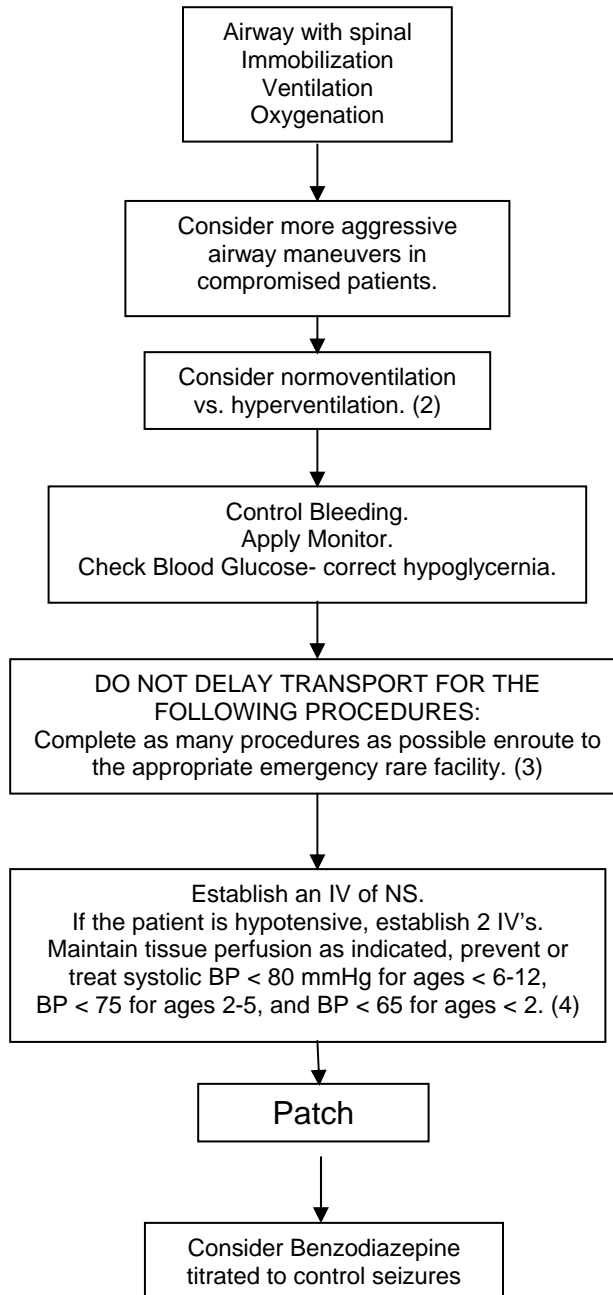
- (2) Nasotracheal intubation is better tolerated in the patient with a gag reflex.
- (3) Consider transport to burn center

PEDIATRIC TRAUMA- Musculoskeletal Injuries



Contact Medical Control to administer Morphine Sulfate 0.1 - 0.2 mg/kg and/or Midazolam 0.05 mg/kg or Diazepam 0.1 mg/kg for muscle spasm.

PEDIATRIC TRAUMA- HEAD INJURY WITH ALOC (1)



(1) severely head Injured patient considered to have a GCS of 8 or <.

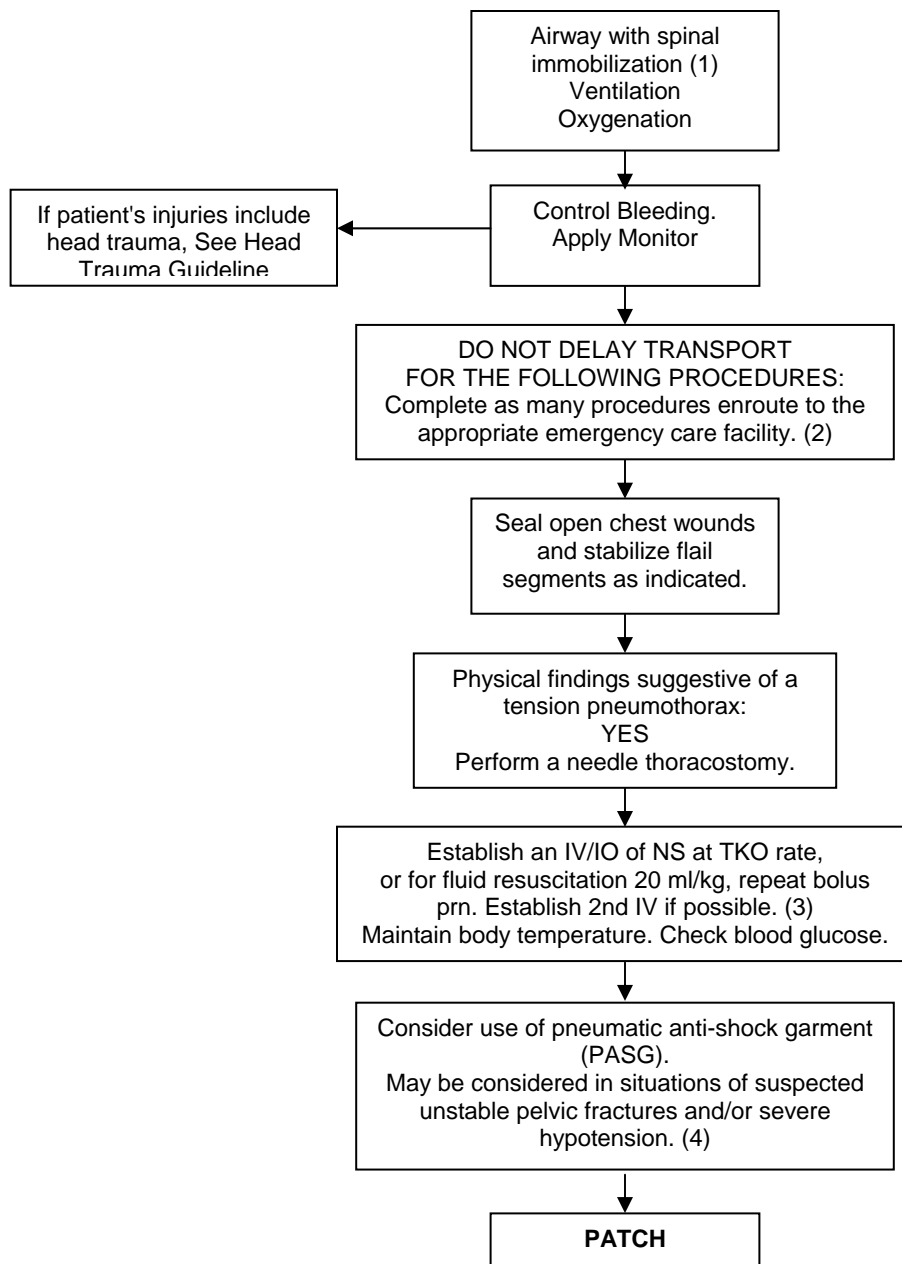
(2) Controlled hyperventilation with 100% O₂. at 30 breaths per minute for the child and 35 bpm for the infant should only be used In patients with signs of impending central herniation: unconscious, unresponsive patient with extensor posturing or no motor response; asymmetric or dilated and unreactive pupils; GCS decreases 2 or more points from patient's prior best score when patient had initial GCS of 9 or less, after correction of hypoxemia, hypotension, and hypoglycemia. Normoventilation is 20 bpm in the child and 25 bpm for the infant.

(3) The goal for time on scene is to not exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.

(4) Consider IO if no IV access and patient is in extremism

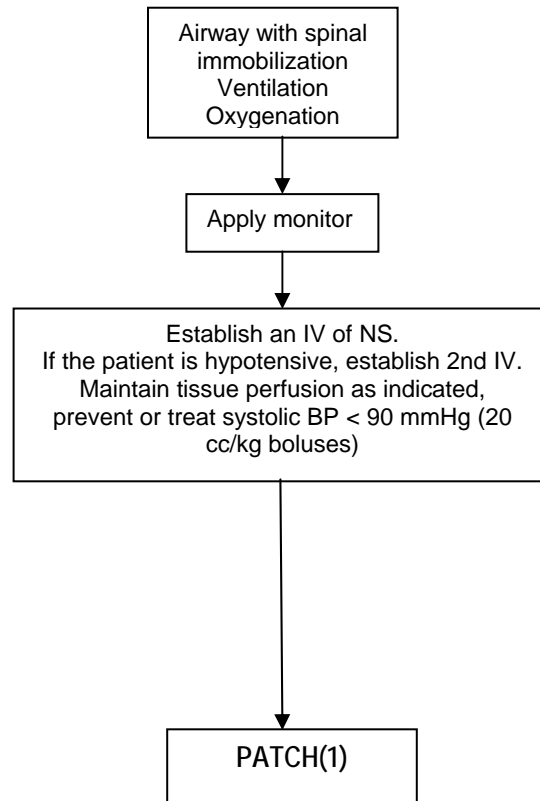
PEDIATRIC TRAUMA- MULTI-SYSTEM

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.
- (4) PASG/MAST is contraindicated in penetrating chest trauma and is relatively contraindicated in isolated blunt chest trauma.

PEDIATRIC TRAUMA- SPINAL INJURY



(1) If patient remains hypotensive and appears to have isolated head/spinal injuries contact Medical Control to administer Dopamine 5-20 mcg/kg/min.

PEDIATRIC/ NEONATAL STANDARDS

<u>AGE</u>	<u>HEART RATE/MIN</u>	<u>RESPIRATORY RATE/MIN</u>
Newborn (birth - 6wks)	140 (120-160)	40 (30-50)
Infant (7wks - 1yr)	100 (80-140)	25 (20-30)
1 - 2 Years	100 (80-130)	27 (20-30)
2 - 6 Years	100 (80-120)	24 (20-30)
6 - 13 Years	80 (60-100)	22 (20-30)
13- 16 Years	80 (60-100)	22 (12-20)

BLOOD PRESSURE

(* Never inflate over 200 mmHg.)

(* A convenient formula is: $2 \times \text{age in years} + 70 =$
Systolic)

WEIGHT

(* A convenient formula is: $8 + \{ 2 \times \text{age in years} \} =$
Weight in Kg)

ENDOTRACHEAL TUBE

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

PEDIATRIC DOSAGES

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.

DRUG	CONCENTRATION	DOSE/ROUTE	ADMINISTRATION & PRECAUTIONS
------	---------------	------------	---------------------------------

ACTIVATED CHARCOAL	25 GRAMS	1gm/kg. PO	Give ASAP after ingestion.
ADENOSINE	6mg/2cc	0.1mg-0.2mg/kg	Monitor rhythm.
		Rapid IV Push	
		followed immed.	
		by 2-3cc NS.	
DRUG	CONCENTRATION	DOSE/ROUTE	ADMINISTRATION & PRECAUTIONS
ATROPINE	1mg/10ml	0.02mg/kg IV	Min.: 0.1mg
		MR after	Max: 0.5mg child
		5 min.	1mg adolescent
CALCIUM CHLORIDE	1000mg/10ml	0.2-0.3cc/kg IV	Slowly over 10 min.
DEXTROSE 50% in H2O	25 Gms/50cc	0.5-1Gm./kg of diluted D25W - (Peds)	Slow IV.
		0.1-0.2 Gm./kg of D10W (Neonate)	D50W diluted:
			1:1 = D25W
			1:4 = D10W
DIAZEPAM	10mg/2ml	0.1-0.2mg/kg IV	Respiratory depressant.
		0.5mg/kg Rectally.	
Diphenhydramine	50mg/ml	1mg/kg IV	
DOPAMINE	400mg/5cc syringe	2-20mcg/kg/min.	Titrate to effect.
EPINEPHRINE (resp)	1:1000 1mg/cc	0.01cc/kg SQ	Max 0.3cc
EPINEPHRINE (anaphylaxis)	1:10000 1mg/10cc	0.1cc/kg IV,	Titrate to effect.
EPINEPHRINE (cardiac)	1:10000 1 mg/10cc	0.1cc/kg IV,IO	May repeat every 3-5 minutes
	1:1000 1mg/cc	0.1 cc/kg ETT	May repeat every 3-5 minutes
EPINEPHRINE DRIP	1:1000 1mg/cc	0.1-1.0mcg/kg/min. IV,IO	Titrate to effect. In major cardiac events.

FUROSEMIDE	40mg/4cc	1mg/kg IV	Push slowly.
GLUCAGON	1mg/1cc	0.5mg IM	
LIDOCAINE	100mg/5cc syringe. 1 Gm./25cc	1mg/kg IV	
DRUG	CONCENTRATION	DOSE/ROUTE	ADMINISTRATION & PRECAUTIONS
LIDOCAINE DRIP	100mg/5cc	20-50mcg/kg/min (Mix 100 mg in 100 cc NS Multiply weight X dose (mcg/kg/min) X 60 Then move decimal 3 places to the left to arrive at ml/hr to deliver infusion)	
METHYLPREDNISOLE	125mg Vial	1-2mg/kg IV	
MIDAZOLAM	5mg/5ml	0.05-0.10mg/kg IV 0.2mg/kg IM	Slowly over > 2 min MR q 2min to a total of 10mg
MORPHINE	10mg/cc	0.1mg/kg IV, IO,IM	Respiratory depressant.
NALOXONE	0.4mg/cc or 1mg/cc	0.1mg/kg SQ, IV, IO, ET If >5 yrs old or >20kg 2mg.	
SODIUM BICARBONATE	50 mEq/50cc	1 mEq/kg IV	Always dilute with sterile water or D5W 1:1 for infants up to 3 mos. Give slowly.
SVN: ALBUTEROL/ ATROVENT	2.5mg/3cc NS .02% 0.5mg/2.5ml NS		May repeat.

IV SOLUTIONS:

RINGERS LACTATE	20cc/kg IV, IO	Consider in the first 30 min. in the management of hypovolemia. DO NOT USE on diabetic acidosis or
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hypothermia.

NORMAL SALINE 20cc/kg IV, IO

PEDIATRIC LEVELS FOR DEFIBRILLATION

Defibrillation energy level (2 joules/kg, double if unsuccessful).

Cardioversion energy level (.5-1 joule/kg)

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 Rapid Push with 20cc NS flush, MR twice in 1-2 min @ 12 mg.
ALBUTEROL SULPHATE-SVN	2.5mg/3cc NS Unit Dose.
ASA, BABY 81mg.	2-4 chewable
ATROPINE - bradycardia	0.5mg IVP, repeat q 5 min. to max of 2 mg.
asystole	1mg IVP or 2mg via ET
organophosphate poisoning	2mg IVP repeat q 2-3min prn titrate to atropinization
ATROVENT-SVN	0.5mg/2.5 cc NS Unit Dose.
CALCIUM CHLORIDE	20 mg/kg of 10% Solution for hyperkalemia and Ca Channel Blocker OD.
CHARCOAL ACTIVATED	Adults 50 Gms.
DEXTROSE 50%	25 Gms. IVP
DIAZEPAM (VALIUM)	2-10mg Slow IV. Titrate to effect.
DIPHENHYDRAMINE (BENADRYL)	25-50mg Slow IV
DOPAMINE	2-20mcg/kg/min IV Drip.
EPINEPHRINE 1:1000	0.1-0.3mg SQ
EPINEPHRINE DRIP	1cc of 1:1000 Sol/500 NS Titrate to effect. Initial dose 1mg/min
EPINEPHRINE 1:10,000	1mg IV or ET at 2-2.5 X the IV dose.
FUROSEMIDE (LASIX)	20mg-80mg IV Slowly.
GLUCAGON	1mg IM - effect in 15-20 min.
LIDOCAINE	1-1.5 mg/kg IVP - Repeat 0.5 - 0.75

	mg/kg q 5-10 min up to 3mg/kg
LIDOCAINE DRIP	2-4 mg/min IV Drip
MAGNESIUM SULPHATE	1Gm/2cc 1-2 Gms in 100cc D5W IV over 2 min. (VF - Give IV Push) PIH - 5 GM bolus in 50-100 cc NS over 15 Minutes then 1-4 Gm/hr Continuous infusion
METHYLPREDNISOLONE (SOLUMEDROL)	125mg IV
MIDAZOLAM (VERSED)	2.5-10 mg IV slowly, 0.2mg/kg IM
MORPHINE SULPHATE	2-5mg Slow IV q 5 min. Titrate to effect.
NALOXONE (NARCAN)	0.8mg-2.0mg SQ,IVP q 3 min PRN Nasal- 1 mg per atomizer each nare may repeat
NEOSYNEPHRINE NASAL	2 gtts/sprays in nares prior to NT intubation.
NITROGLYCERIN	0.4mg (1/150) SL q 5 min X 3 if S B/P > 100
OXYTOCIN (PITOCIN)	10-20 Units in 1000 cc NS (Titrate to effect)
SODIUM BICARBONATE	2 Amps IV for wide QRS in tricyclic overdose.
THIAMINE	100mg IV
VERAPAMIL	5 mg Slow IV (over 1 min)

Appendix C - Drug Box Information

R9-25-503. Protocol for an EMT to Administer, Monitor, or Assist in Patient Self-Administration of an Agent

- A.** An EMT may administer an agent to a patient if:
1. Table 1 indicates that an EMT with the certification held by the EMT may administer the agent;
 2. The EMT's administration of the agent complies with any requirements included in this Article related to administration of the agent;
 3. The EMT is authorized to administer the agent by:
 - a. The EMT's administrative medical director; or
 - b. For an EMT-B who does not have an administrative medical director, the emergency medical services provider for which the EMT-B works; and
 4. Administering the agent to the patient is consistent with any administrative medical direction and on-line medical direction received by the EMT.
- B.** When an EMT administers an agent, the EMT shall document the administration on a prehospital incident history report, as defined in A.R.S. § 36-2220, including at least:
1. Patient name, if available;
 2. Agent name;
 3. Indications for administration;
 4. Dose administered;
 5. Route of administration;
 6. Date and time of administration; and
 7. Observed patient response to administration of the agent.
- C.** An EMT shall comply with the written standard operating procedure adopted by the emergency medical services provider for which the EMT works as required under R9-25-204(F)(6) or R9-25-210(D)(3), if applicable.
- D.** An EMT may monitor an agent listed in Table 1 if:
1. Table 1 indicates that an EMT with the certification held by the EMT may monitor or administer the agent;
 2. The EMT has completed training in administration of the

agent that included at least the following information about the agent:

- a. Class,
 - b. Mechanism of action,
 - c. Indications and field use,
 - d. Contraindications,
 - e. Adverse reactions,
 - f. Incompatibilities and drug interactions,
 - g. Adult dosage,
 - h. Pediatric dosage,
 - i. Route of administration,
 - j. Onset of action,
 - k. Peak effects,
 - l. Duration of action,
 - m. Dosage forms and packaging,
 - n. Required Arizona minimum supply, and
 - o. Special considerations;
3. If the agent is administered via an infusion pump, the EMT has completed training in the operation of the infusion pump;
 4. If the agent is administered via a small volume nebulizer, the EMT has completed training in the operation of the small volume nebulizer; and
 5. If the agent is administered via a central line, the EMT is an EMT-P.
- E.** An EMT may assist in patient self-administration of an agent if:
1. Table 1 indicates that an EMT with the certification held by the EMT may administer or assist in patient self-administration of the agent;
 2. The agent is supplied by the patient;
 3. The patient or, if the patient is a minor or incapacitated adult, the patient's health care decision maker indicates that the agent is currently prescribed for the patient's symptoms; and
 4. The agent is in its original container and not expired.

Table 1. Authorization for Administration, Monitoring, and Assistance in Patient Self-Administration of Agents by EMT Certification;

Identification of Transport Agents; Administration Requirements; and Minimum Supply Requirements for Agents

KEY:

A = Authorized to administer the agent

M = Authorized to monitor IV administration of the agent during interfacility transport, if the IV was started at the sending health care institution

PA = Authorized to assist in patient self-administration of the agent

TA = Transport agent for an EMT with the specified certification

^{IFIP} = Agent shall be administered by infusion pump on interfacility transports

^{IP} = Agent shall be administered by infusion pump

^{SVN} = Agent shall be administered by small volume nebulizer

^{SVN or MDI} = Agent shall be administered by small volume nebulizer or metered dose inhaler

* = Optional agent for a BLS ambulance that is not primarily serving as the first emergency medical services provider arriving on scene in response to an emergency dispatch

** = The minimum supply for an EMT assigned to respond by bicycle or on foot is 2 cubic feet.

*** = An EMT-B may administer if authorized under R9-25-505.

[] = Minimum supply required if an EMS provider chooses to make the optional agent available for EMT administration

AGENT	MINIMUM SUPPLY	EMT-P	EMT-I(99)) Cert ified Before 1/6/ 07	EMT-I(99)) Cert ified On or After 1/6/ 07	EMT-I(85))	EMT-B
Adenosine	30 mg	A	A	A	-	-

AGENT	MINIMUM SUPPLY	EMT-P	EMT-I(99)) Cert ifie d Befo re 1/6/ 07	EMT-I(99)) Cert ifie d On or Afte r 1/6/ 07	EMT-I(85))	EMT-B
Albuterol Sulfate ^{SVN or MDI} (sulfite free)	10 mg	A	A	A	A	-
Amiodarone ^{IFIP}	Optional [300 mg]	A	A	-	-	-
Antibiotics	None	TA	TA	TA	TA	-
Antiemetics: Promethazine HCl Ondansetron HCl Prochlorperazine edisylate	Optional [25 mg] [4 mg] [10 mg]	A A A	A A A	A A A	A A A	- - -
Aspirin	324 mg	A	A	A	A	A
Atropine Sulfate	4 prefilled syringes, total of 4 mg	A	A	A	-	-
Atropine Sulfate	8 mg multidose vial (1)	A	A	A	A	-
Blood	None	TA	TA	-	-	-
Bronchodilator, inhaler	None	PA	PA	PA	PA	PA
Calcium Chloride	1 g	A	A	-	-	-

AGENT	MINIMUM SUPPLY	EMT-P	EMT-I(99)) Cert ifie d Befo re 1/6/ 07	EMT-I(99)) Cert ifie d On or Afte r 1/6/ 07	EMT-I(85))	EMT-B
Charcoal, Activated (without sorbitol)	Optional [50 g]	A	A	A	A	A
Colloids	None	TA	TA	TA	TA	-
Corticosteroids IP	None	TA	TA	TA	TA	-
Dexamethasone	Optional [8 mg]	A	A	A	A	-
Dextrose	50 g	A	A	A	A	-
Dextrose, 5% in H ₂ O	Optional [250 mL bag (1)]	A	A	A	A	M***
Diazepam	20 mg	A	A	A	A	-
Diazepam Rectal Delivery Gel	Optional [20 mg]	A	A	A	A	-
Diltiazem ^{IFIP} or Verapamil HCl	25 mg 10 mg	A A	A A	- -	- -	- -
Diphenhydramine HCl	50 mg	A	A	A	A	-
Diuretics	None	TA	TA	TA	-	-
Dopamine HCl ^{IFIP}	400 mg	A	A	-	-	-
Electrolytes/Cr ystalloids (Commercial Preparations)	None	TA	TA	TA	TA	M

AGENT	MINIMUM SUPPLY	EMT-P	EMT-I(99)) Cert ified Before 1/6/ 07	EMT-I(99)) Cert ified On or After 1/6/ 07	EMT-I(85))	EMT-B
Epinephrine Auto-Injector	2 adult auto- injectors* 2 pediatric auto-injectors*	-	-	-	-	A
Epinephrine Auto-Injector	Optional [2 adult auto- injectors 2 pediatric auto-injectors]	A	A	A	A	-
Epinephrine HCl, 1:1,000	2 mg	A	A	A	A	-
Epinephrine HCl, 1:1,000	30 mg multidose vial (1)	A	A	A	-	-
Epinephrine HCl, 1:10,000	5 mg	A	A	A	-	-
Etomidate	Optional [40 mg]	A	-	-	-	-
Fosphenytoin Na ^{IP} or Phenytoin Na ^{IP}	None	TA	TA	-	-	-
Furosemide or, If Furosemide is not available, Bumetanide	100 mg 4 mg	A A	A A	A A	A A	- -

AGENT	MINIMUM SUPPLY	EMT- P	EMT- I(99) Cert ifie d Befo re 1/6/ 07	EMT- I(99) Cert ifie d On or Afte r 1/6/ 07	EMT- I(85)	EMT-B
Glucagon ^{IFIP}	2 mg	A	A	A	A	-
Glucose, oral	Optional [30 gm]	A	A	A	A	A
Glycoprotein IIb/IIIa Inhibitors	None	TA	TA	-	-	-
H ₂ Blockers	None	TA	TA	TA	TA	-
Heparin Na ^{IP}	None	TA	TA	-	-	-
Ipratropium Bromide 0.02% ^{SVN} or MDI	5 mL	A	A	A	A	-
Lactated Ringers	1 L bag (2)	A	A	A	A	M***
Lidocaine HCl IV	3 prefilled syringes, total of 300 mg 1 g vials or premixed infusion, total of 2 g	A	A	A	-	-
Lorazepam	Optional [8 mg]	A	A	A	A	-
Magnesium Sulfate ^{IFIP}	5 g	A	A	-	-	-
Methylprednisolone Sodium Succinate	250 mg	A	A	A	A	-

AGENT	MINIMUM SUPPLY	EMT-P	EMT-I(99)) Cert ified before 1/6/ 07	EMT-I(99)) Cert ified On or After 1/6/ 07	EMT-I(85))	EMT-B
Midazolam	Optional [10 mg]	A	A	-	-	-
Morphine Sulfate	20 mg	A	A	A	A	-
Nalmefene HCl	Optional [4 mg]	A	A	A	A	-
Naloxone HCl	10 mg	A	A	A	A	-
Nitroglycerin IV Solution ^{IP}	None	TA	TA	-	-	-
Nitroglycerin Sublingual Spray	1 bottle	A	A	A	A	PA
or Nitroglycerin Tablets	1 bottle	A	A	A	A	PA
Nitrous Oxide	Optional [Nitrous oxide 50% / Oxygen 50% fixed ratio setup with O ₂ fail-safe device and self-administration mask, 1 setup]	A	A	A	A	-

AGENT	MINIMUM SUPPLY	EMT- P	EMT- I(99) Cert ifie d Befo re 1/6/ 07	EMT- I(99) Cert ifie d On or Afte r 1/6/ 07	EMT- I(85)	EMT-B
Normal Saline	1 L bag (2) 250 mL bag (1) 50 mL bag (2)	A	A	A	A	M***
Oxygen	13 cubic feet**	A	A	A	A	A
Oxytocin	Optional [10 units]	A	A	A	A	-
Phenobarbital Na ^{IP}	None	TA	TA	-	-	-
Phenylephrine Nasal Spray 0.5%	1 bottle	A	A	A	A	-
Potassium Salts ^{IP}	None	TA	TA	-	-	-
Procainamide HCl ^{IP}	None	TA	TA	-	-	-
Racemic Epinephrine ^{SVN}	None	TA	TA	-	-	-
Sodium Bicarbonate 8.4%	100 mEq	A	A	A	A	-
Succinylcholine	Optional [400 mg]	A	-	-	-	-
Theophylline ^{IP}	None	TA	TA	-	-	-
Thiamine HCl	100 mg	A	A	A	A	-

AGENT	MINIMUM SUPPLY	EMT- P	EMT- I(99) Cert ifie d Befo re 1/6/ 07	EMT- I(99) Cert ifie d On or Afte r 1/6/ 07	EMT- I(85)	EMT-B
Total Parenteral Nutrition, with or without lipids ^{IFIP}	None	TA	TA	-	-	-
Vasopressin	Optional [40 units]	A	A	-	-	-
Vitamins	None	TA	TA	TA	TA	-

