



PROTOCOL LEGEND

Protocol Name

EMT Procedure

Patient condition may require
Medical Control order prior to
administering certain medications

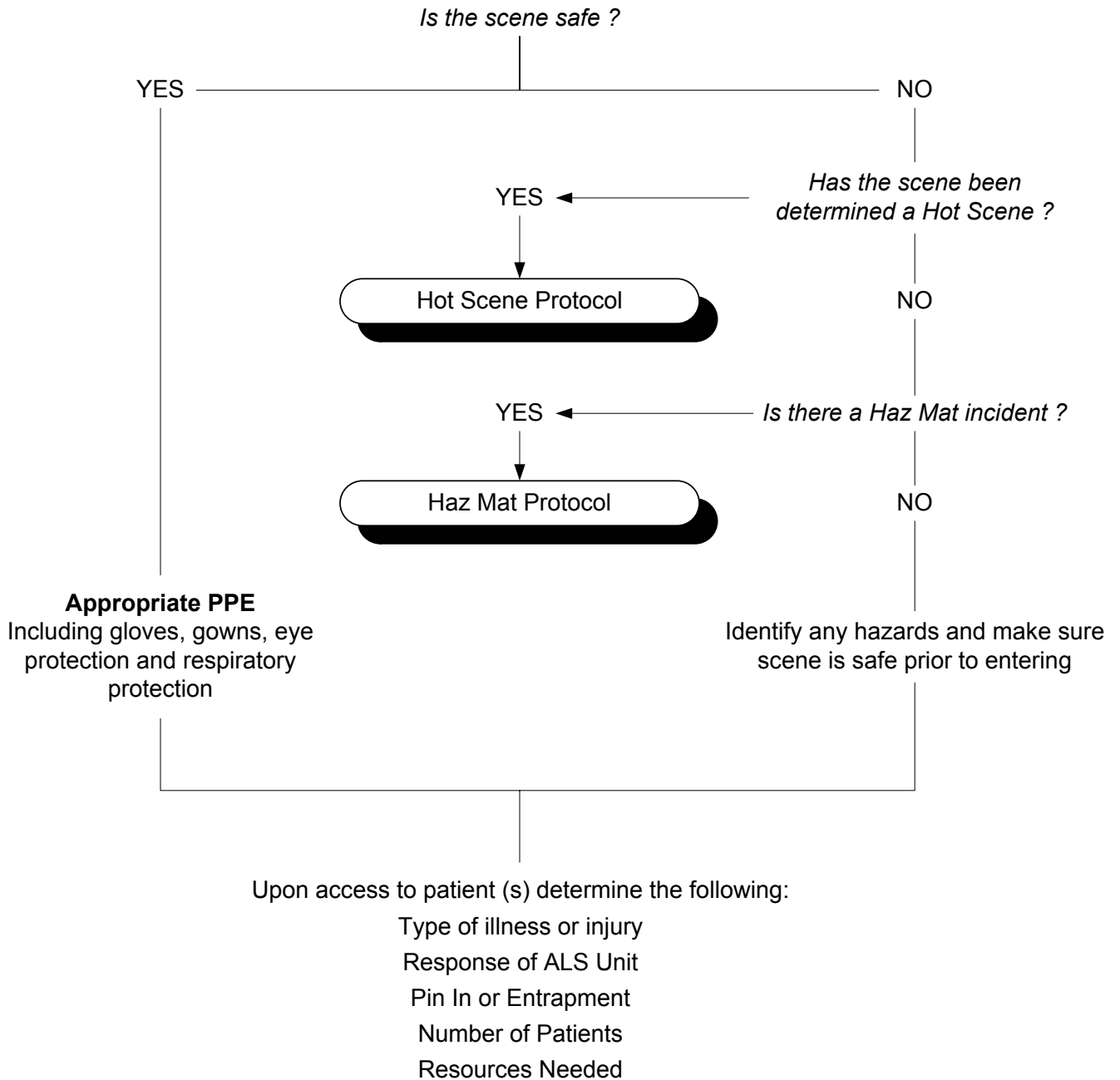
Action Box

Questions or Prompts in Italics ?

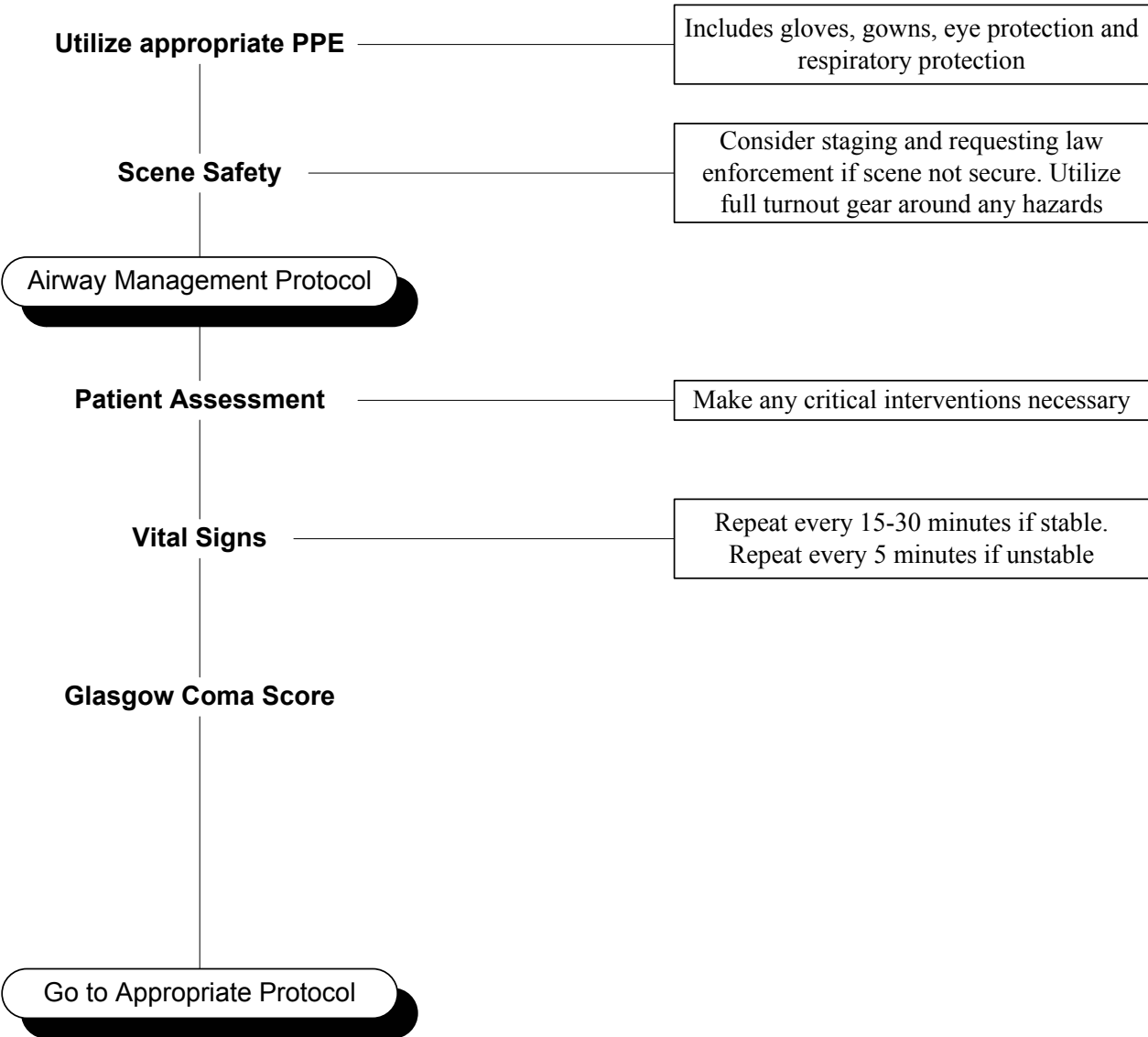
Caution

DRAFT

INITIAL ARRIVAL AT THE SCENE

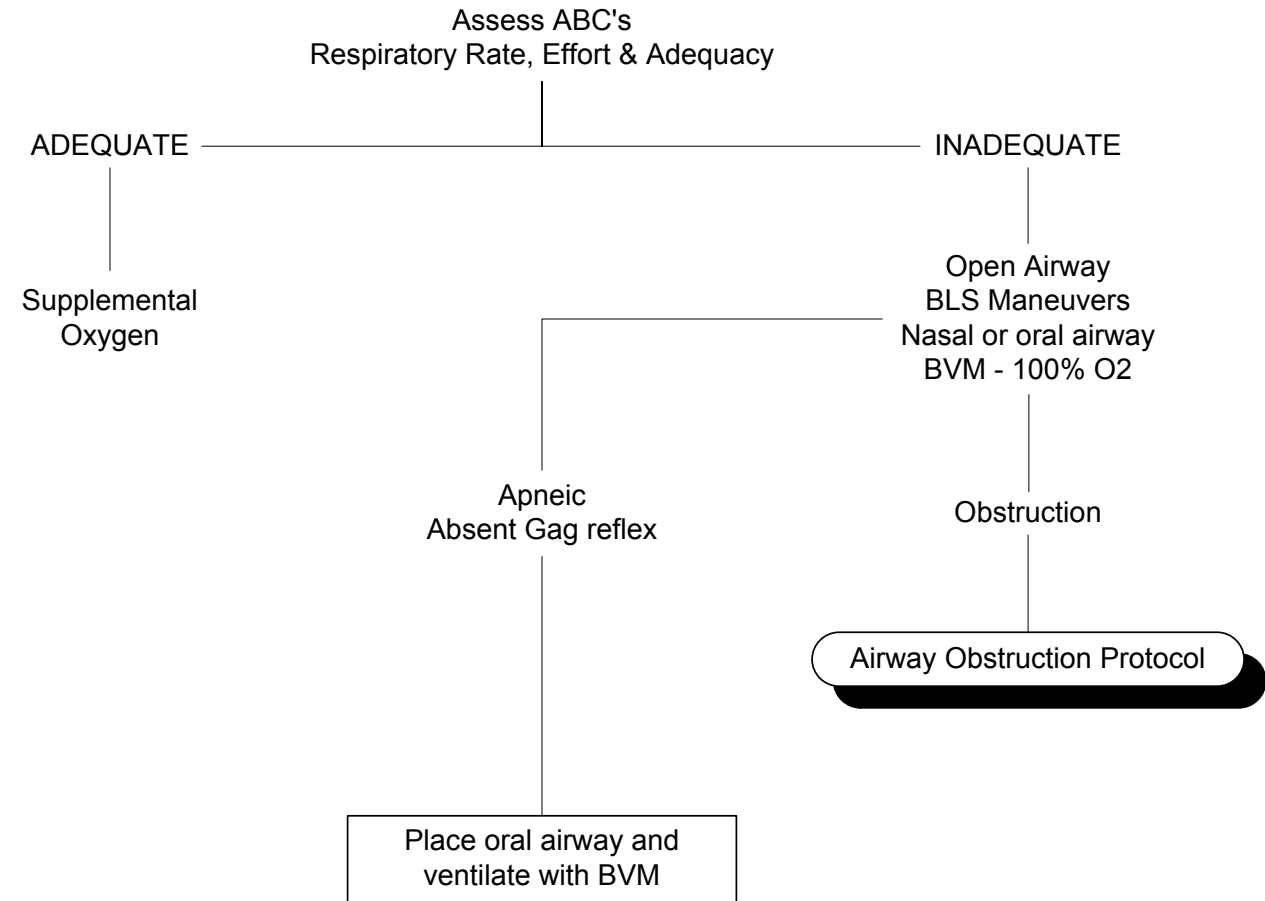


UNIVERSAL PATIENT CARE PROTOCOL



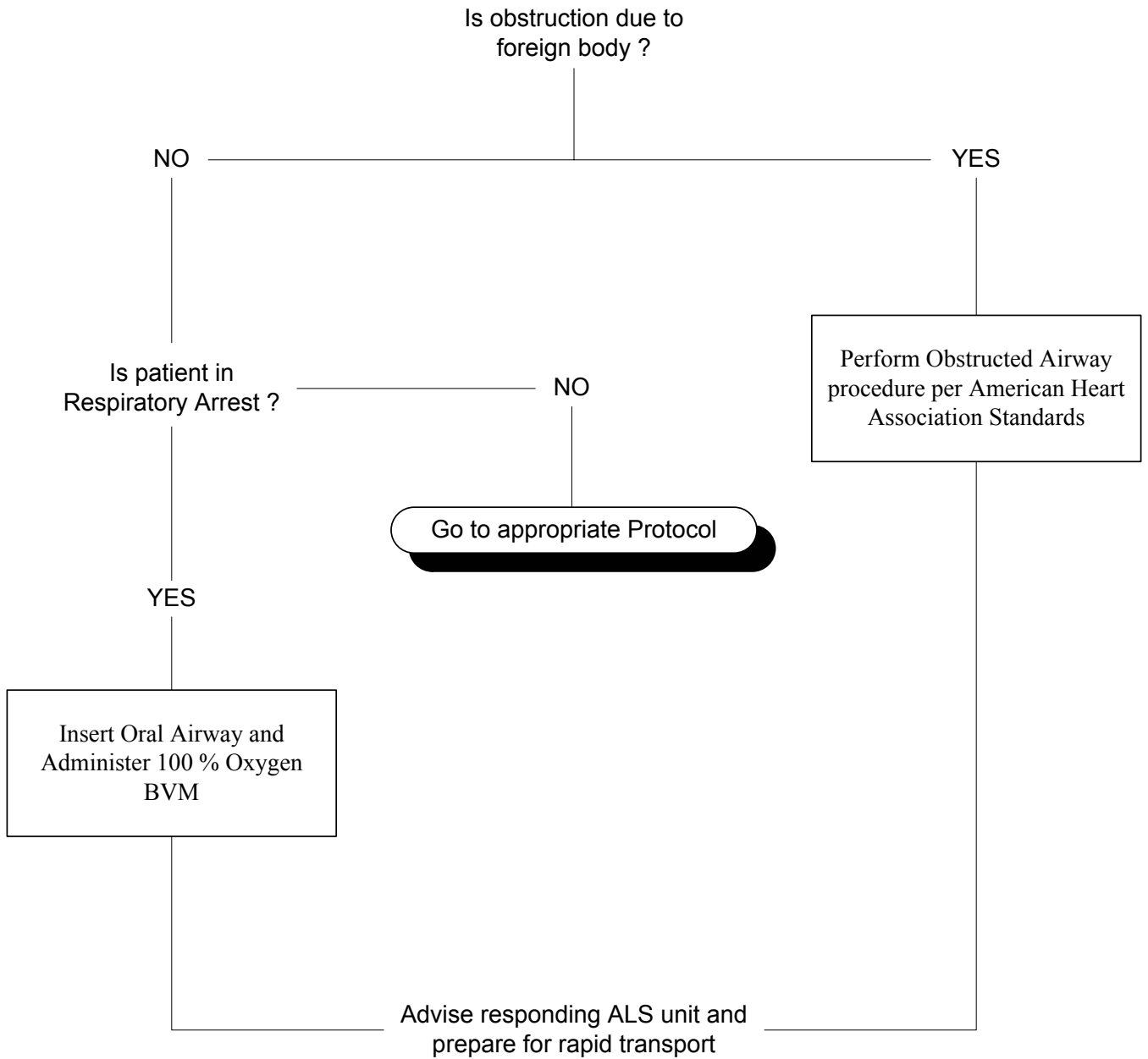
ADULT AIRWAY MANAGEMENT PROTOCOL

The primary objective of airway management is to provide adequate oxygenation and ventilation. Airway management should progress from the least to the most invasive based on patient condition. This algorithm is provided as a reference in deciding which procedure is appropriate.



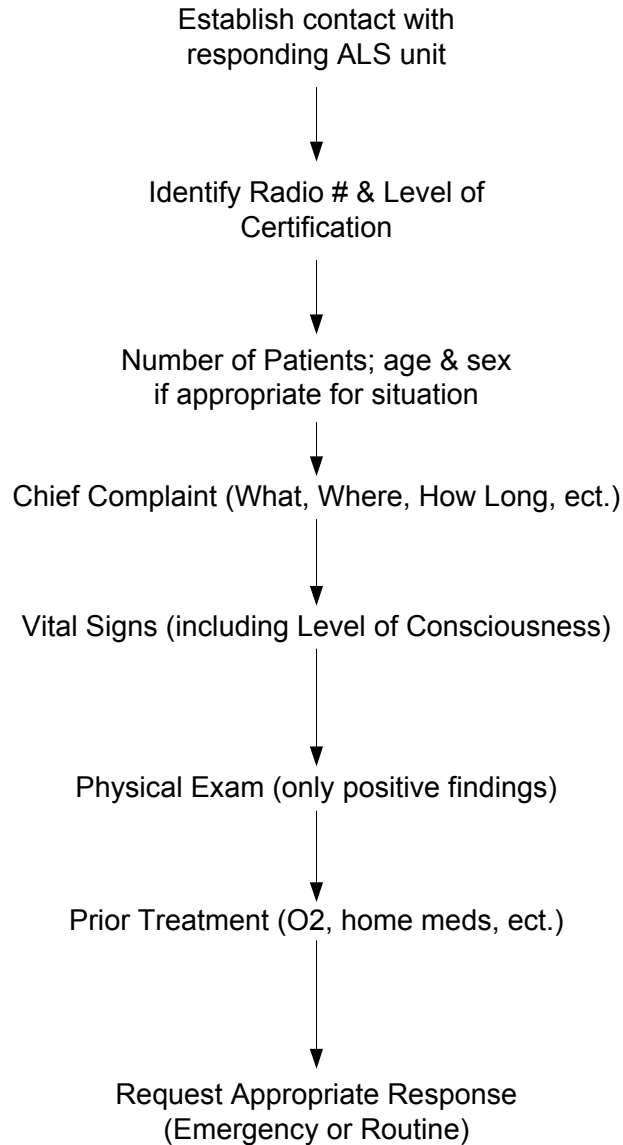
Maintain C-Spine immobilization for patients with suspected spinal injury
Do not assume hyperventilation is psychogenic - Use Oxygen, not a paper bag

OBSTRUCTED AIRWAY



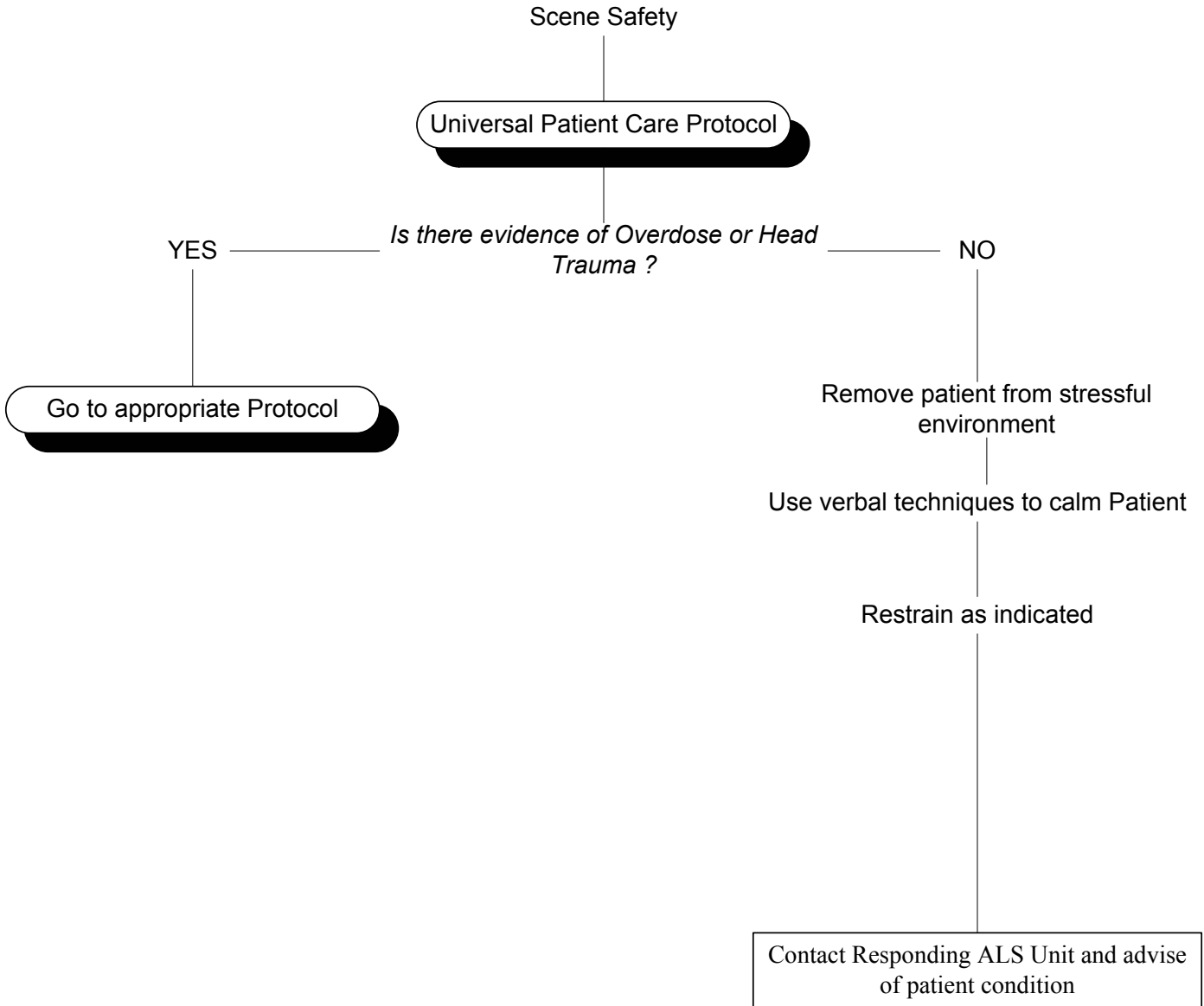
PATIENT UPDATE

GOAL: To make the patient presentation as brief as possible while communicating all relevant information so that responding ALS units can obtain a clear picture of the current situation (s).



Approved Levels of Consciousness : **Alert, Responds to Pain or Voice, Unresponsive**

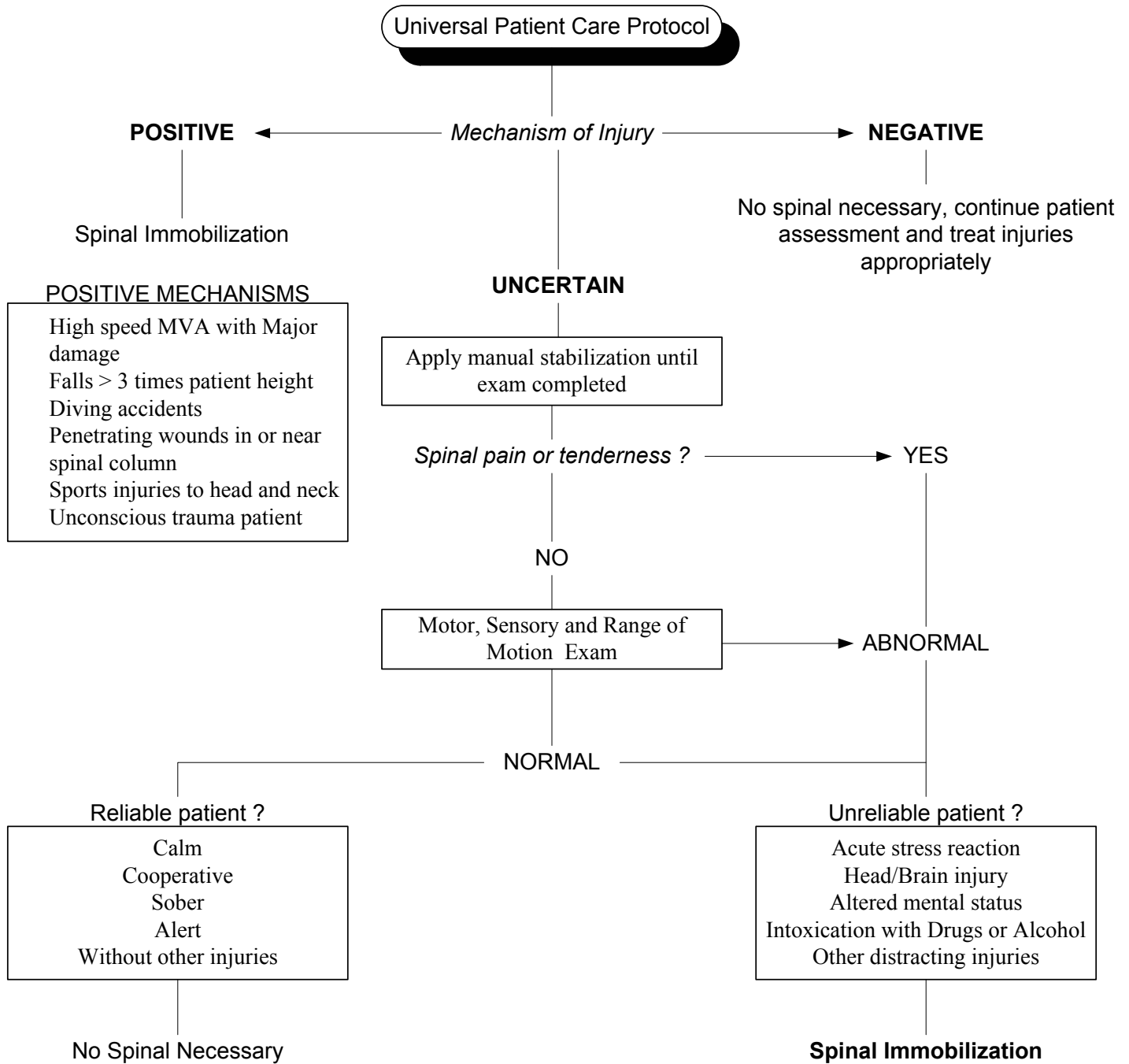
BEHAVIORAL



CONSIDER YOUR SAFETY FIRST !
Complete and thorough Neurological Exam
Consider all possible medical/trauma causing behavior (hypoglycemia, OD, hypoxia, Head injury)

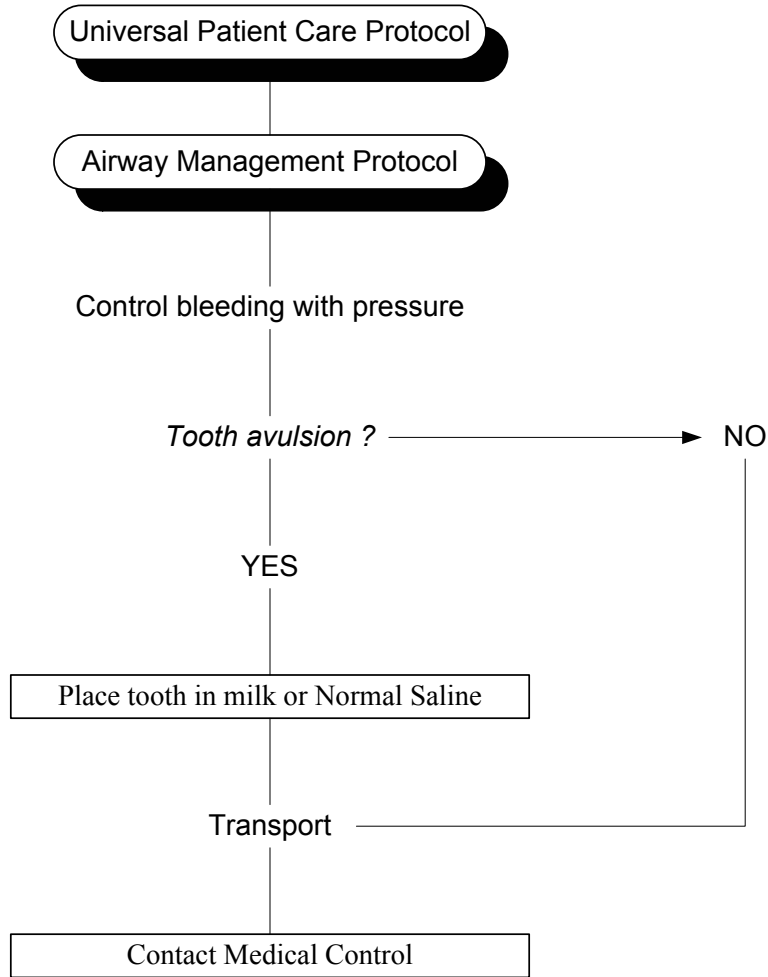
CLEARING C-SPINE IN FIELD

When in doubt Immobilize



High index of suspicion with patients <5 or >65 years of age
 Spinal immobilization may agitate a child. You may have to weigh the benefits vs a crying, kicking child

DENTAL PROBLEMS



Significant soft tissue swelling to the face or oral cavity can represent a cellulitis or abscess. Scene and transport times should be minimized in complete tooth avulsions. Reimplantation is possible within 4 hours if the tooth is properly cared for.



PATIENT WITHOUT A PROTOCOL

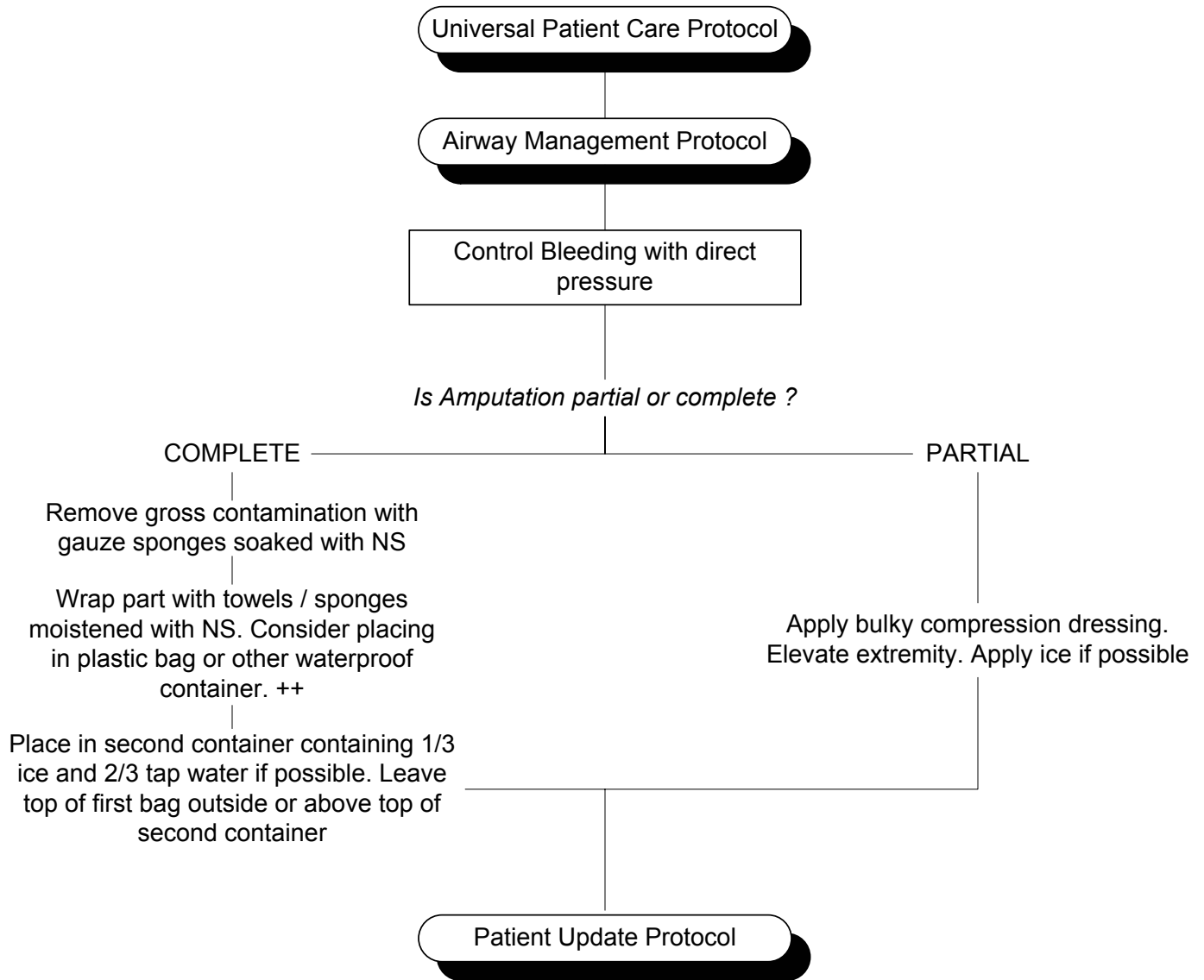
Universal Patient Care Protocol

If patient does not fit into any protocol
you should:

Contact Medical Control

AMPUTATION / PARTIAL AMPUTATION

Let the patient know that every consideration will be given to possible replantation, stressing that the final decision will be made by the surgeon. Never assume that an amputated part can or cannot be replaced successfully.

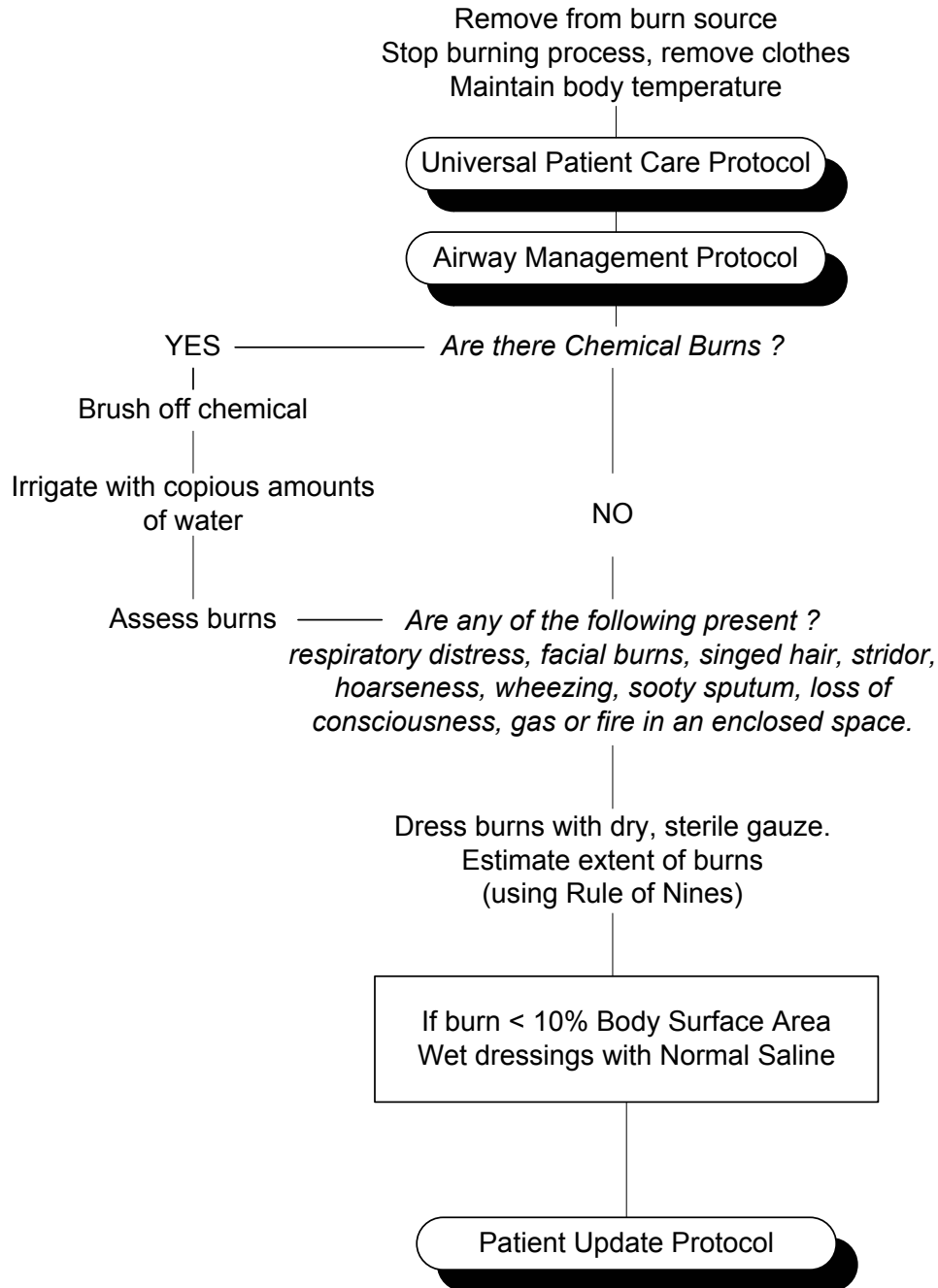


DO NOT Place amputated part directly on ice

* Use tourniquet to control bleeding only if deemed life saving

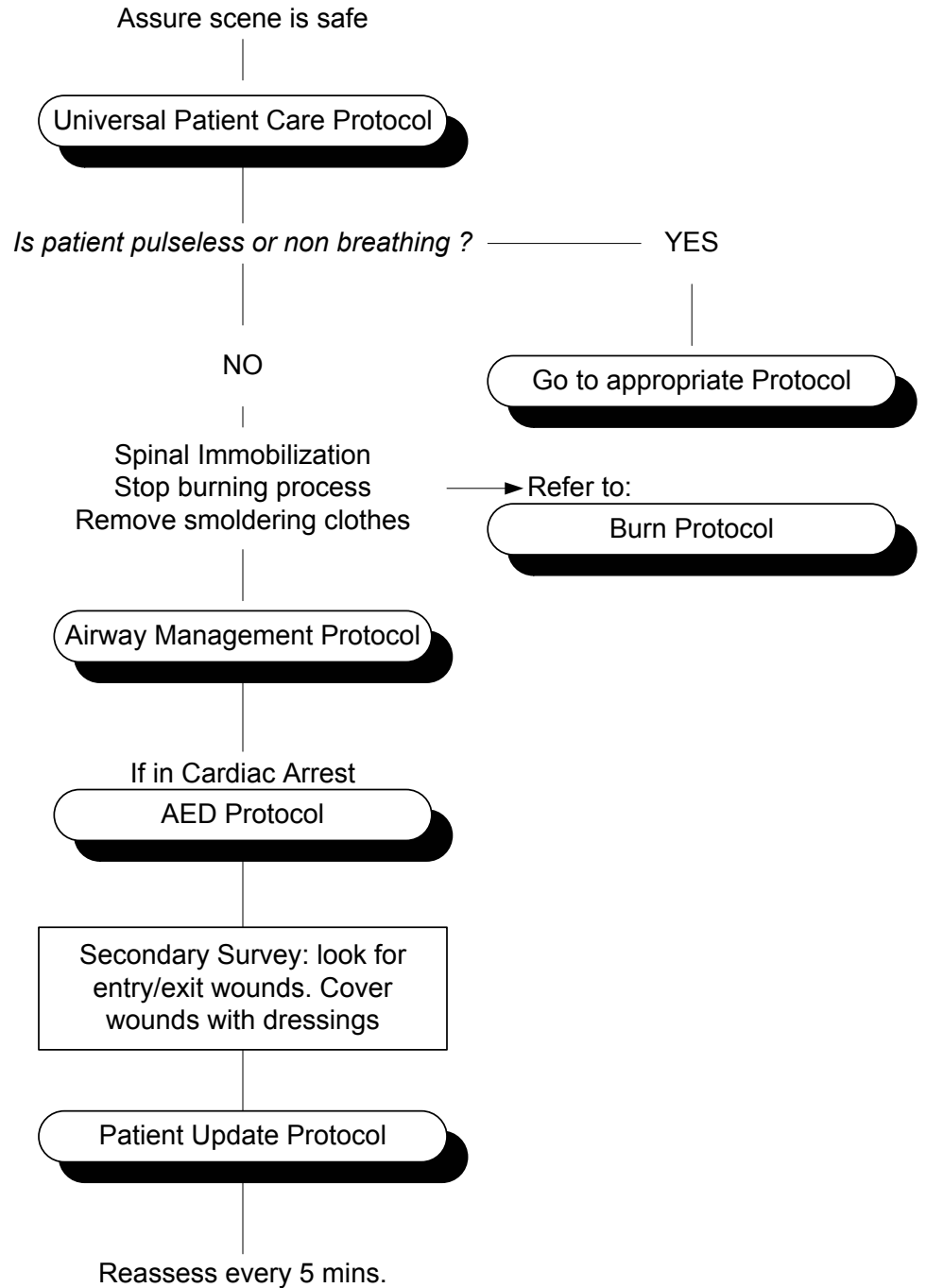
++ Every attempt should be made to save, protect and transport any severed part, no matter how severe the damage

BURNS



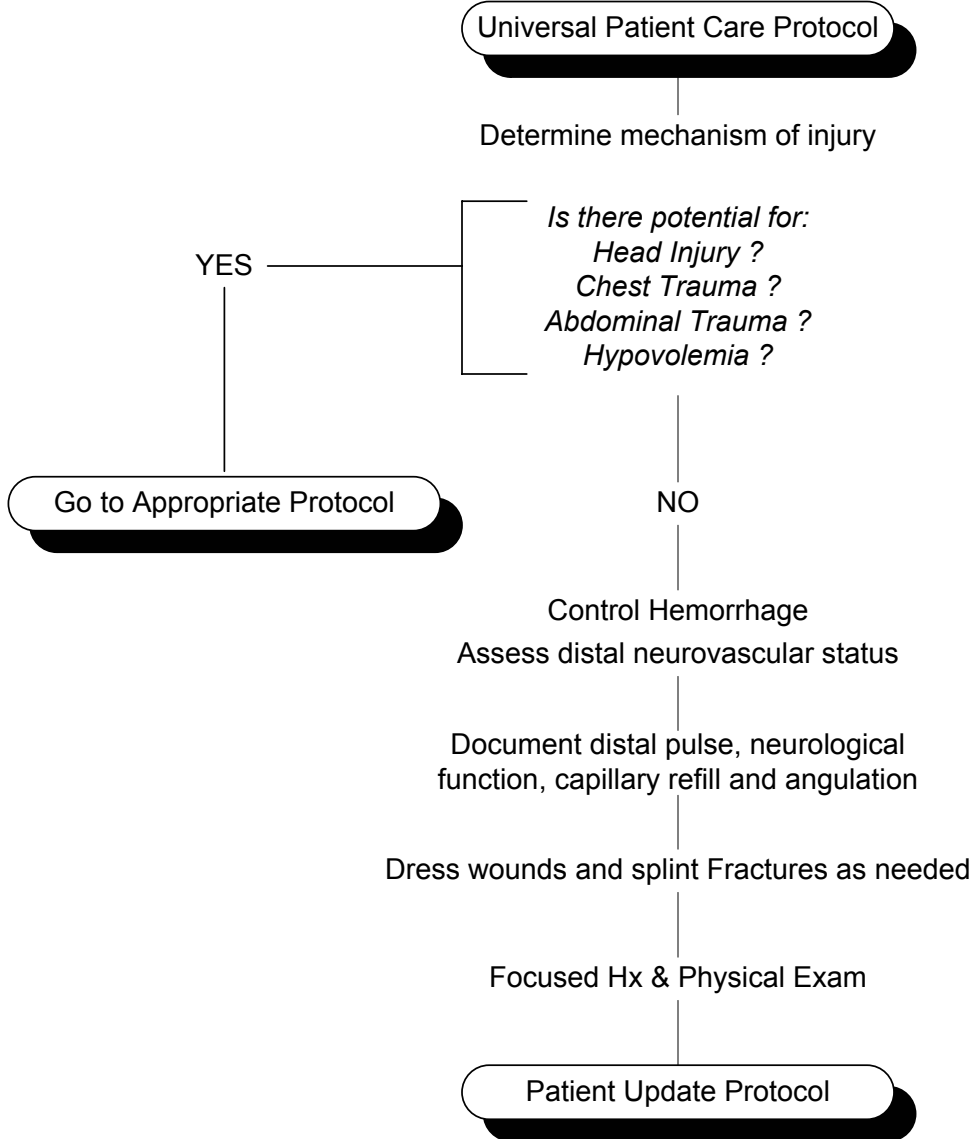
100% oxygen is necessary to treat potential carbon monoxide exposure
Do not remove clothing adhered to skin
Leave blisters intact
Do not overlook the possibility for multiple system trauma

ELECTRICAL INJURIES



Damage is often hidden; most severe damage will occur in muscle, vessels and nerves
 Do not overlook other trauma (i.e. Falls). Consider spinal immobilization
 In lightning injuries, most of the current will travel over the body surface producing flash burns.

EXTREMITY TRAUMA



Rapid transport any injury with vascular compromise
Knee and elbow fracture/dislocations have a high incidence of vascular problems
Blood loss may be concealed or not apparent with extremity injuries

HEAD TRAUMA

(without other major injury)

Universal Patient Care Protocol

Spinal Immobilization

Airway Management Protocol

Level of Consciousness
Assess Pupils
Neurological function

Evidence of Neurological deficit
Spinal Cord Injury Protocol

Is patient seizing ?

Seizure Protocol

Check Glucose

Patient Update Protocol

Remember: Increased intracranial pressure may cause hypertension and bradycardia (Cushing's response). Hypotension usually indicates an injury elsewhere in the body.

Hyperventilate only if patient has blown pupil or is rapidly decompensating

HYPERTHERMIA

Universal Patient Care Protocol

Airway Management Protocol

Move to cool environment

Cool patient with fanning, cool moist towels,
or mist spray.

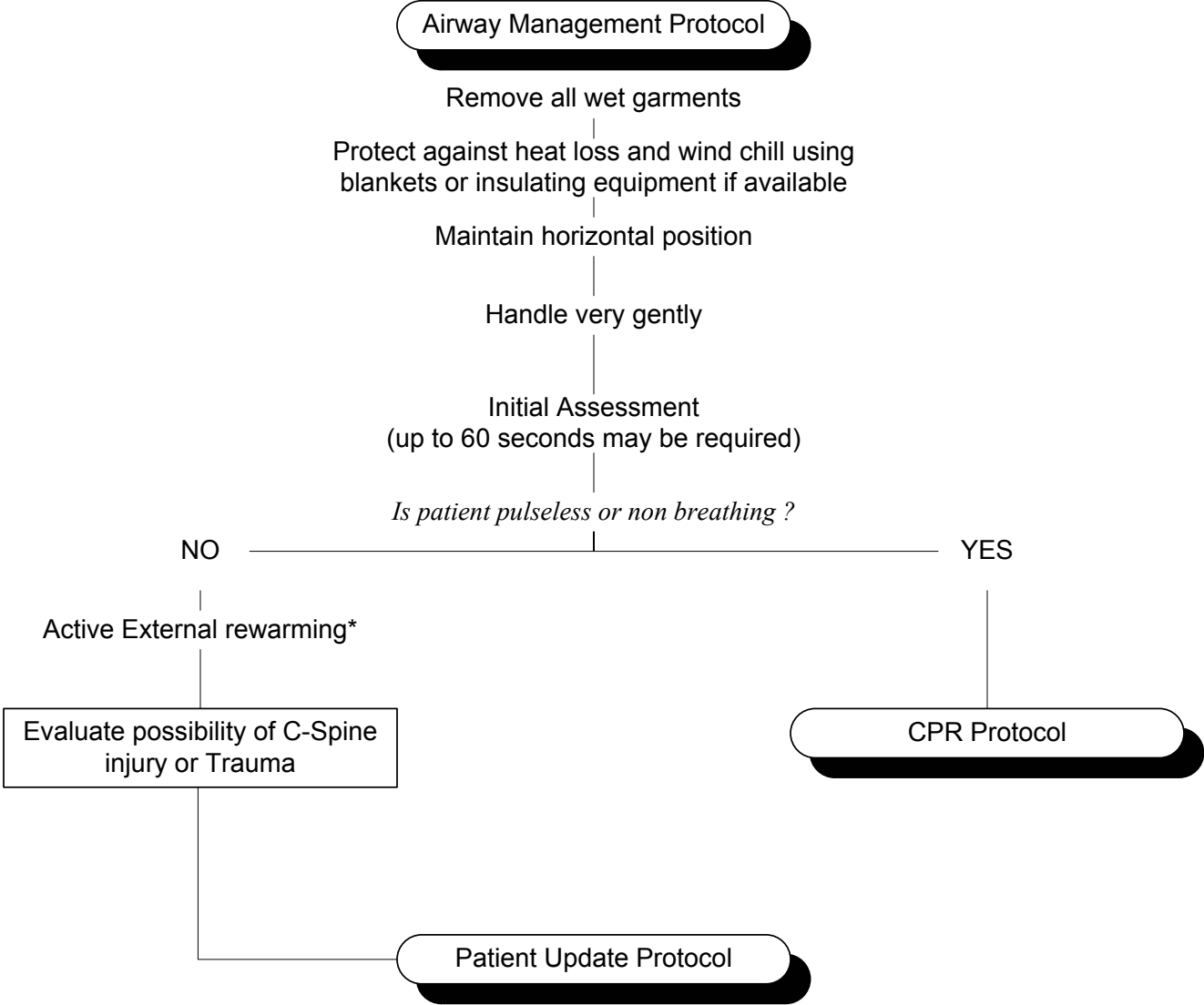
Monitor and Reassess

Patient Update Protocol

Ice packs can be placed on the back of the neck, armpits and groin
Intense shivering may occur as patient is cooled

HYPOTHERMIA

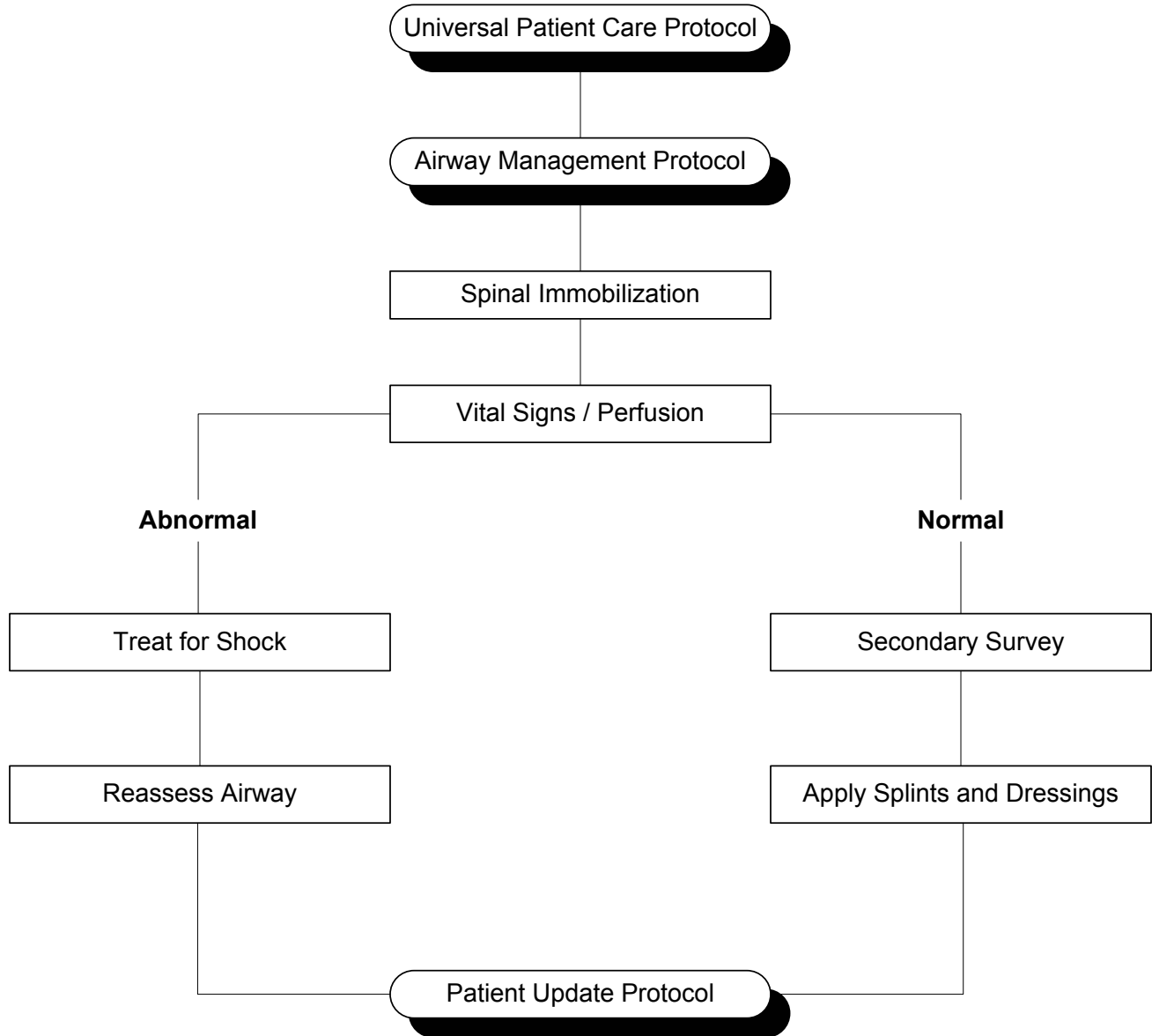
Remove from environment as soon as possible to avoid further heat loss



* Active external rewarming includes use of hot water bottles, heating pads, hot packs and radiant heat sources to chest, axilla, & groin

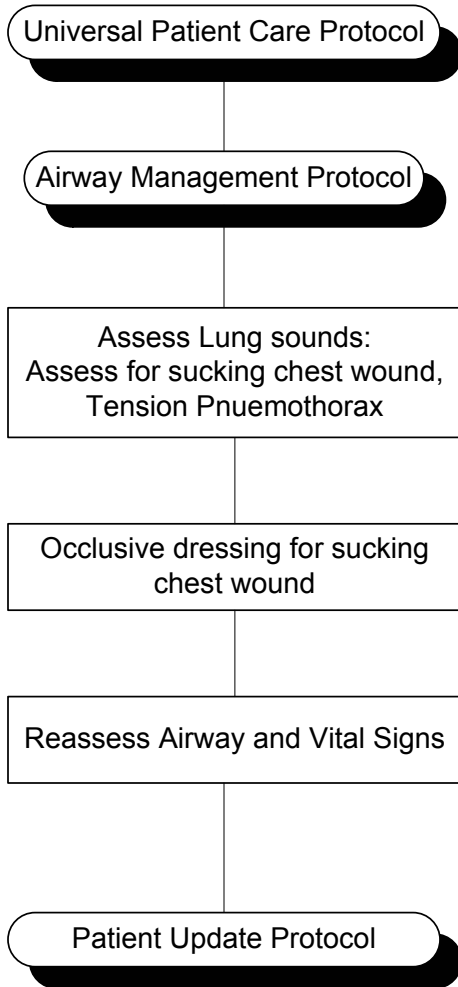
Ventricular fibrillation is common cause of death with core temperatures less than (86 F). Hypothermia may produce severe bradycardia

MULTIPLE TRAUMA



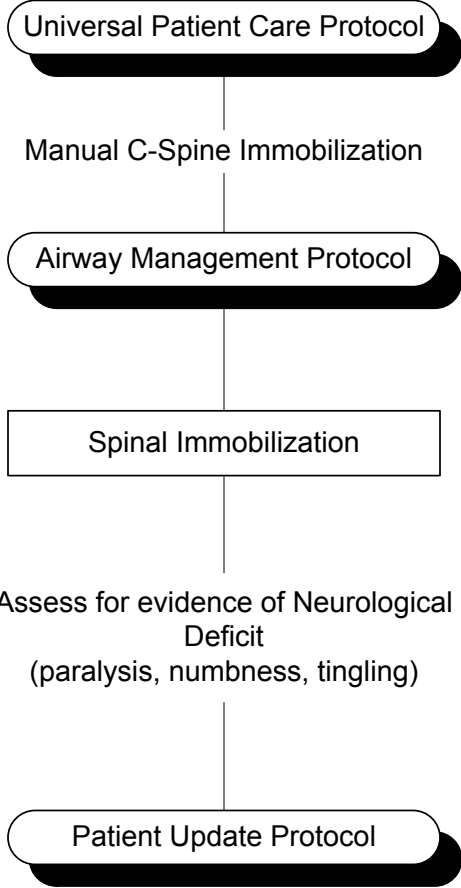
Mechanism of Injury is the most reliable indicator of serious injury

PENETRATING CHEST OR ABDOMINAL TRAUMA



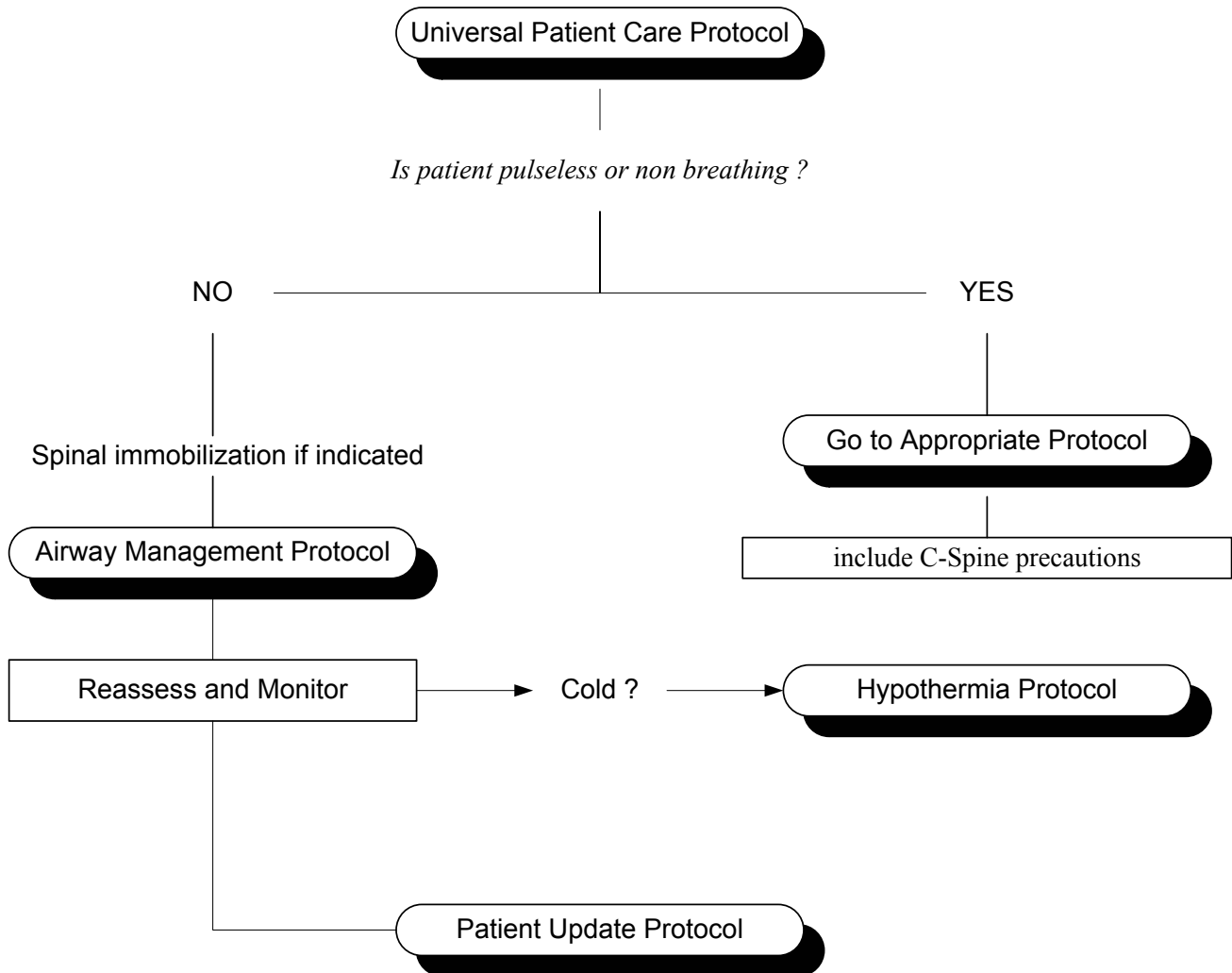
Never remove object. Always stabilize in place unless airway is compromised.

SPINAL CORD INJURY



DROWNING / NEAR DROWNING

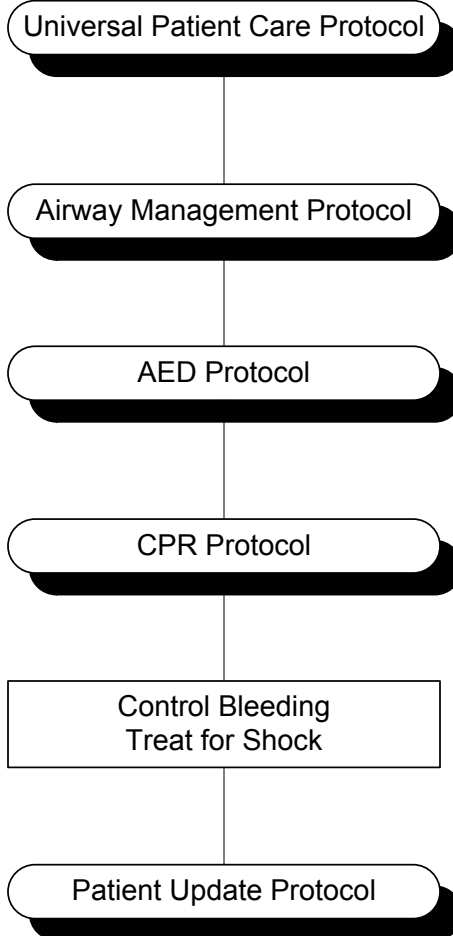
All near drowning victims should be transported even if initially O.K.



Note: Prolonged cold water submersion may be resuscitated. Many Western N.C. streams are considered cold water year round. Treat Hypothermia as indicated.

Frequent Airway assessment. Be prepared for vomiting

CARDIAC ARREST DUE TO TRAUMA



Cardiac arrest following trauma is not usually due to cardiac disease

AUTOMATED EXTERNAL DEFIBRILLATOR (AED)

Universal Patient Care Protocol

Airway Management Protocol

CPR

until AED arrives
and is ready to attach

Power On the AED first
Attach AED electrode pads(stop chest compressions for pad placement)
Analyze (Clear !)
Shock (Clear !) up to 3 times if advised

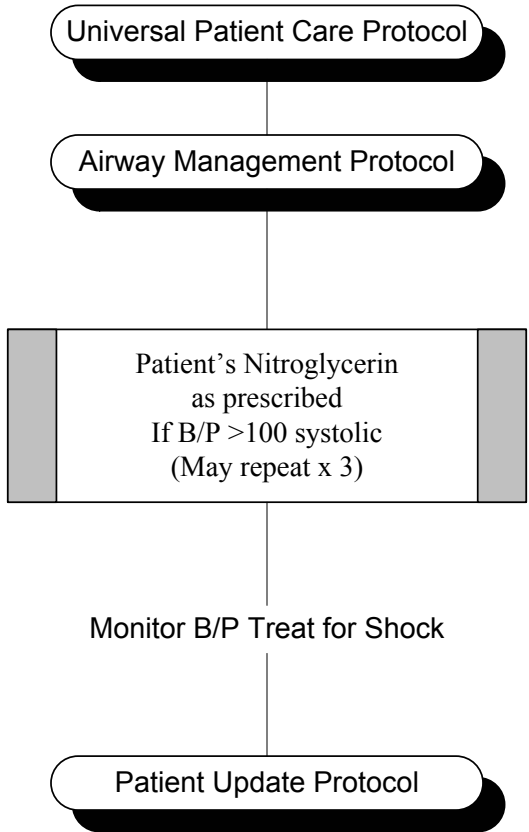
After 3 shocks or after any "no shock indicated"

Check for signs of circulation
If no signs of circulation, Perform CPR for 1 minute

Check for signs of circulation - **If Absent**

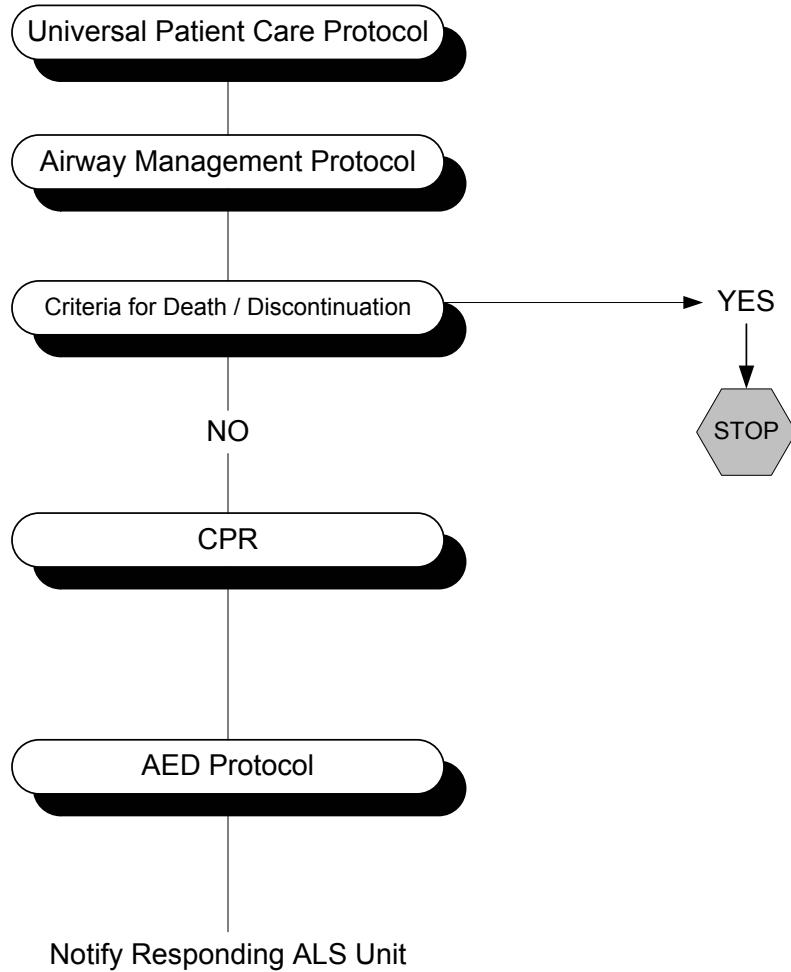
Press Analyze
Attempt to defibrillate
Repeat up to 3 times

CHEST PAIN / SUSPECTED CARDIAC EVENT



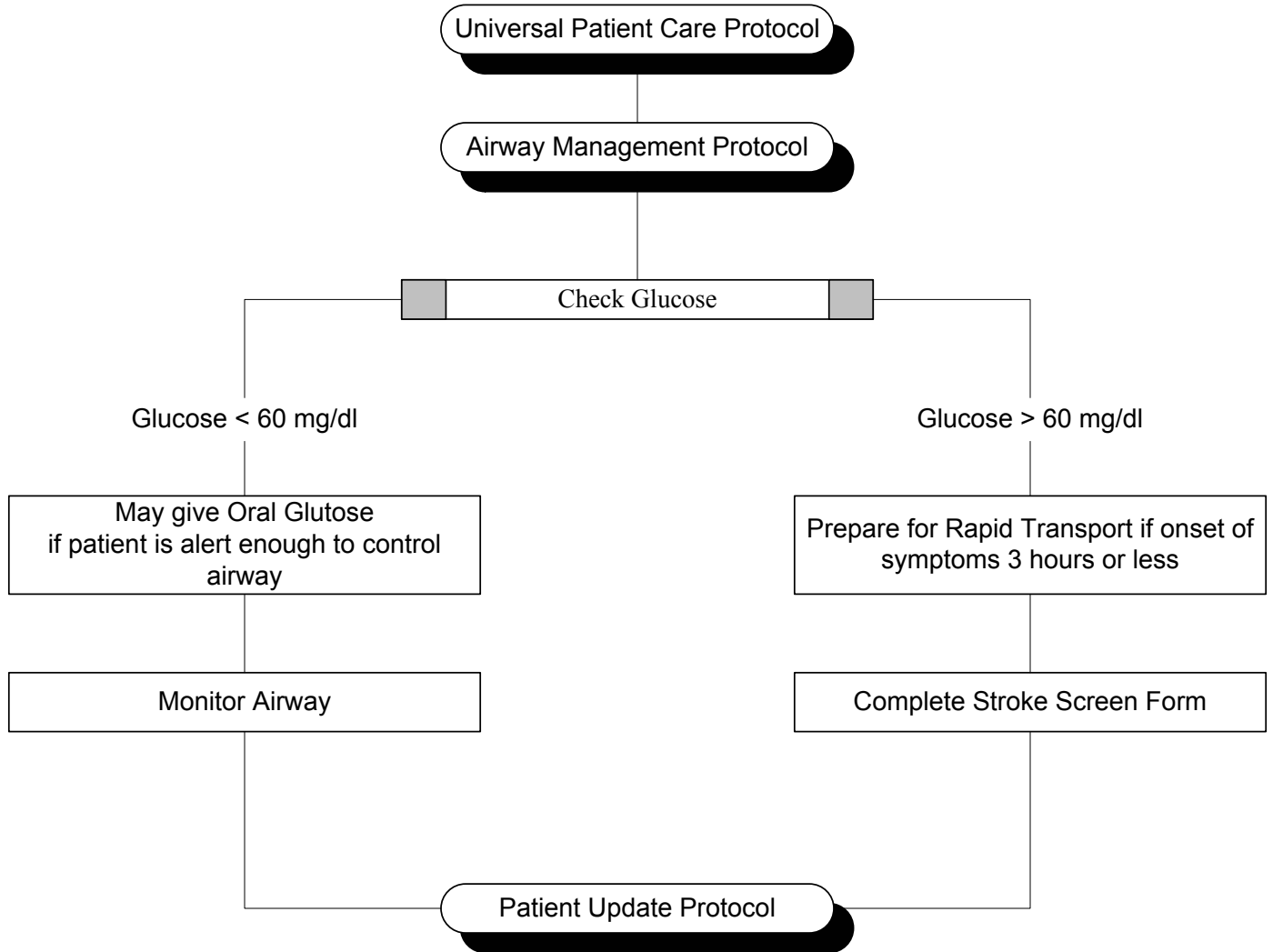
Use caution administering NTG to patients taking VIAGRA
If patient has taken NTG without relief, consider potency of medication
Monitor for Hypotension after administration of NTG and MS

CARDIAC ARREST



Reassess airway frequently and with every patient move. Reassess pulse frequently
Traumatic Arrest - Treat per appropriate trauma/medical protocol with immediate notification to responding ALS unit.
Maternal Arrest - Treat mother per appropriate protocol with immediate notification to responding ALS unit.

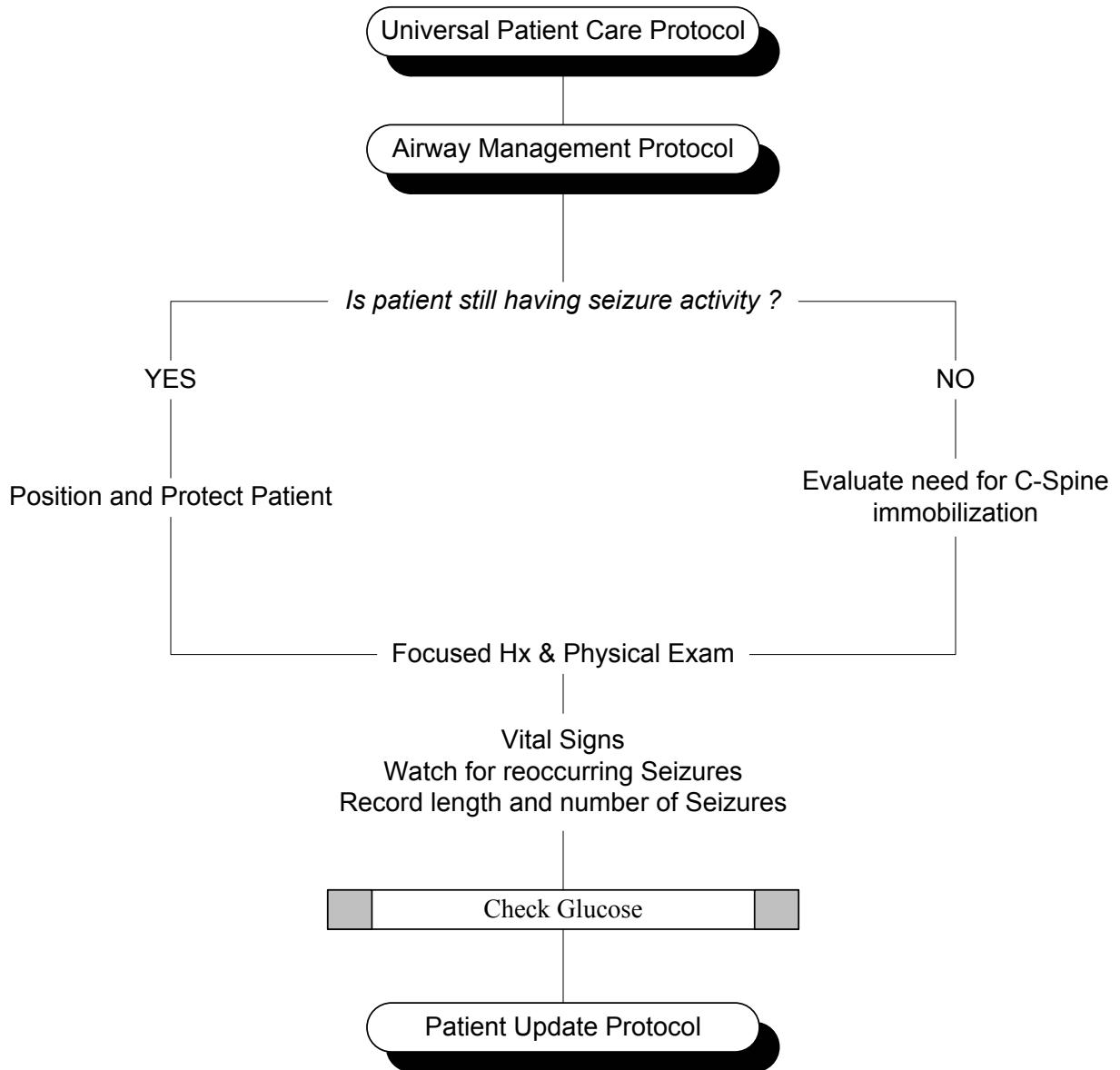
SUSPECTED STROKE



Hyperventilate if rapidly decompensating
 Determine onset of symptoms (i.e.. last time patient was seen "normal")
 Be prepared for airway problems (swallowing, vomiting)
 Elevated B/P is commonly present with CVA
 Hypoglycemia can be present as a localized neurological deficit, especially in the elderly.

SEIZURES

Consider C-Spine injury with all Seizure patients



Be prepared for airway problems and continued seizure activity
Consider Trauma or Substance abuse as underlying cause
Notify responding ALS unit of any Seizure in pregnant patients

HYPOTENSION / SHOCK (NON-TRAUMA)

Universal Patient Care Protocol

Airway Management Protocol

Reassess patient to rule out trauma

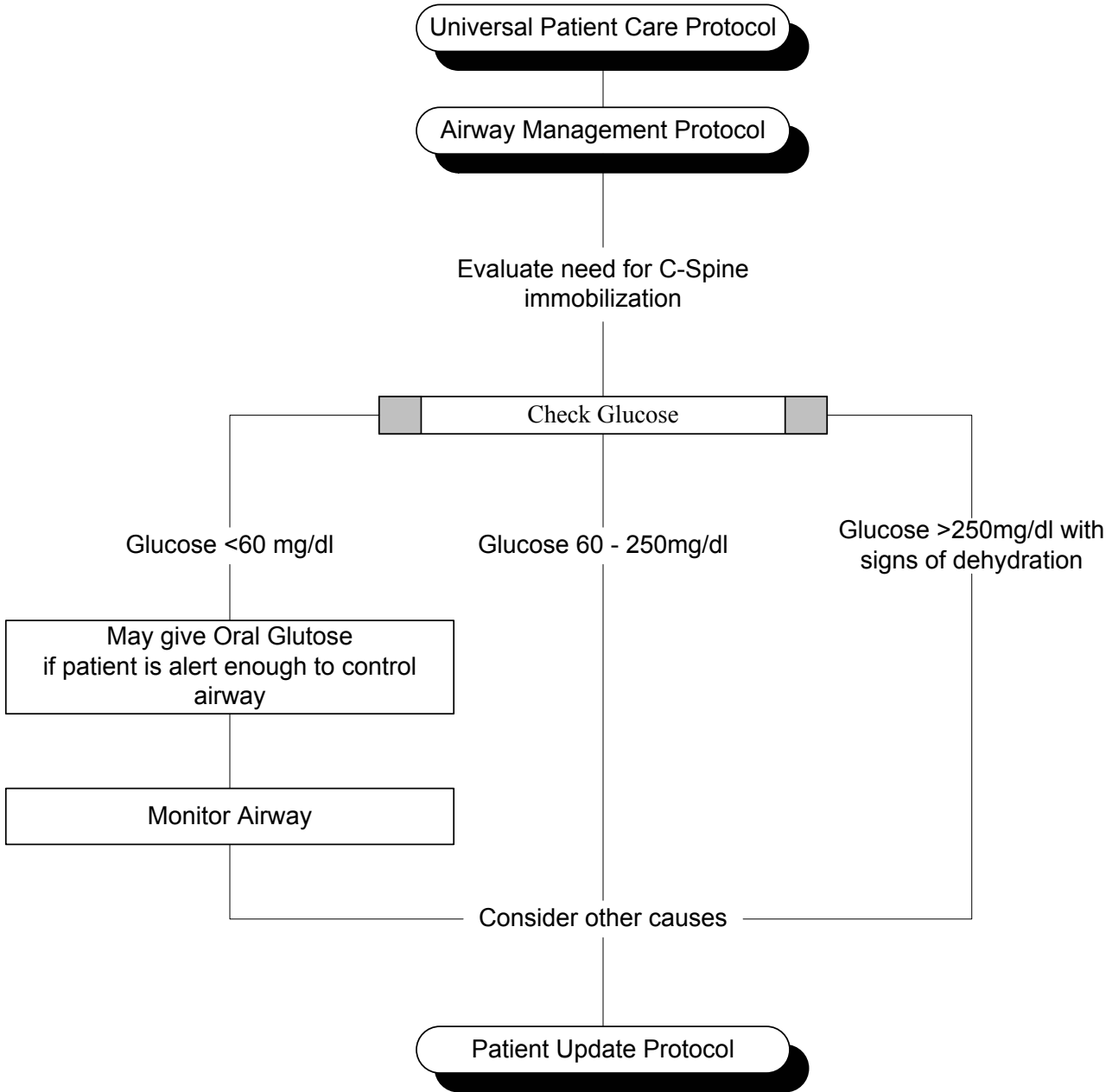
If no spinal injury suspected
Place patient in supine position
with legs elevated
(Trendelenburg)

Keep patient warm

Patient Update Protocol

Consider all possible causes of Shock
Blood loss (vaginal or gastrointestinal bleeding)
Fluid loss (vomiting, diarrhea, fever)
Infection

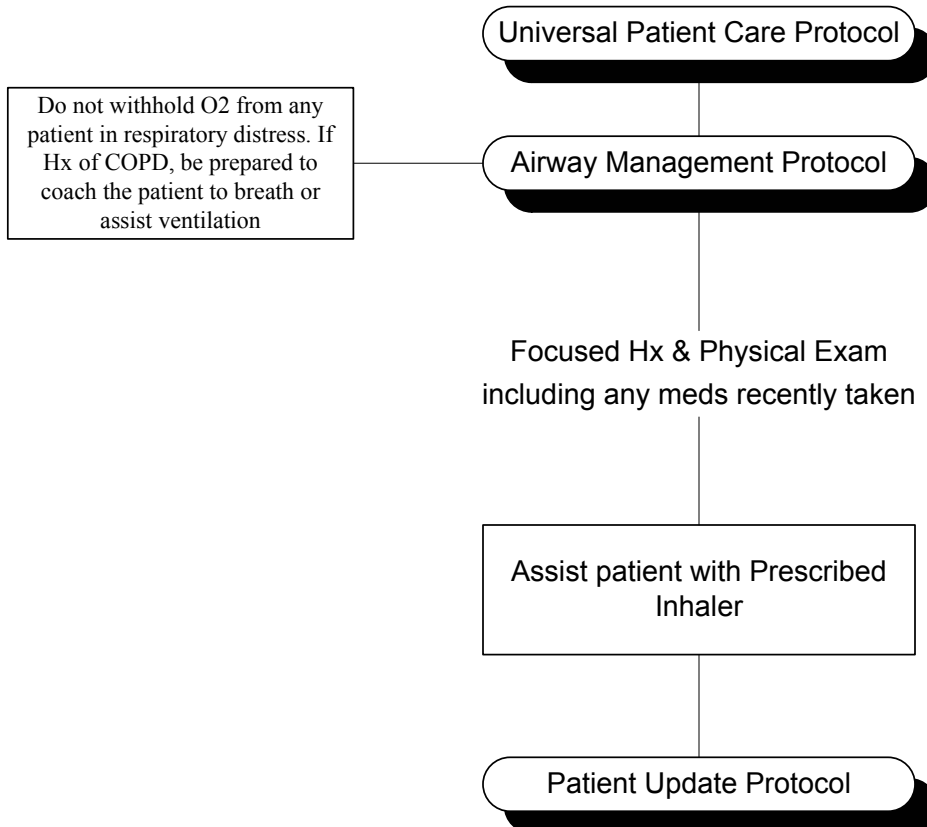
ALTERED MENTAL STATUS



Hyperventilate if rapidly decompensating
 Safer to assume hypoglycemia than hyperglycemia if doubt exist
 Alcoholics frequently develop hypoglycemia
 If patient is alert & has open airway, consider oral sugar for hypoglycemia
 Consider restraint protocol with combative or unsafe patients

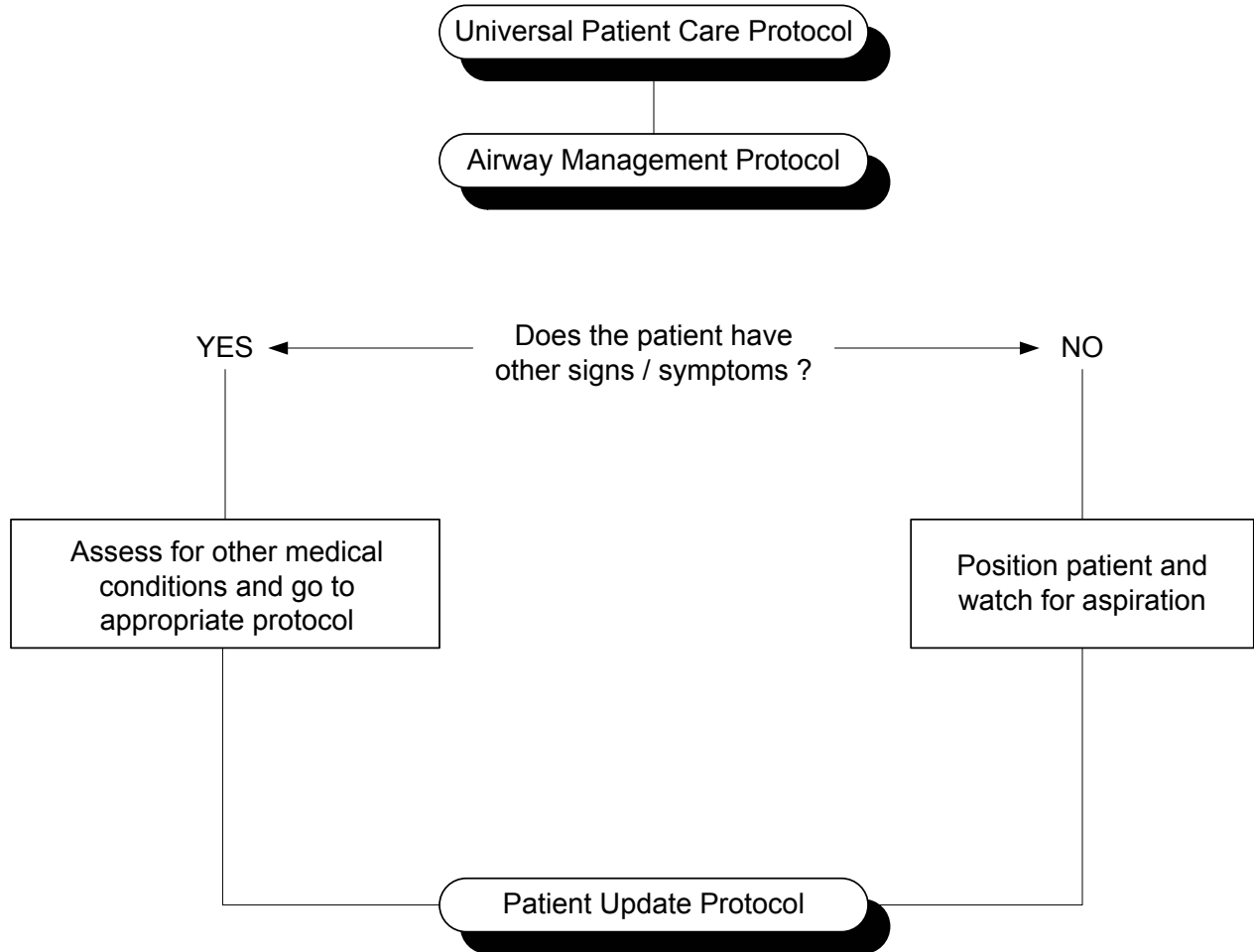
ASTHMA / COPD

Asthma / COPD will usually present with Hx of bronchospasms, bronchodilator medication, retractions, wheezes, decreased air exchange and prolonged expiration.

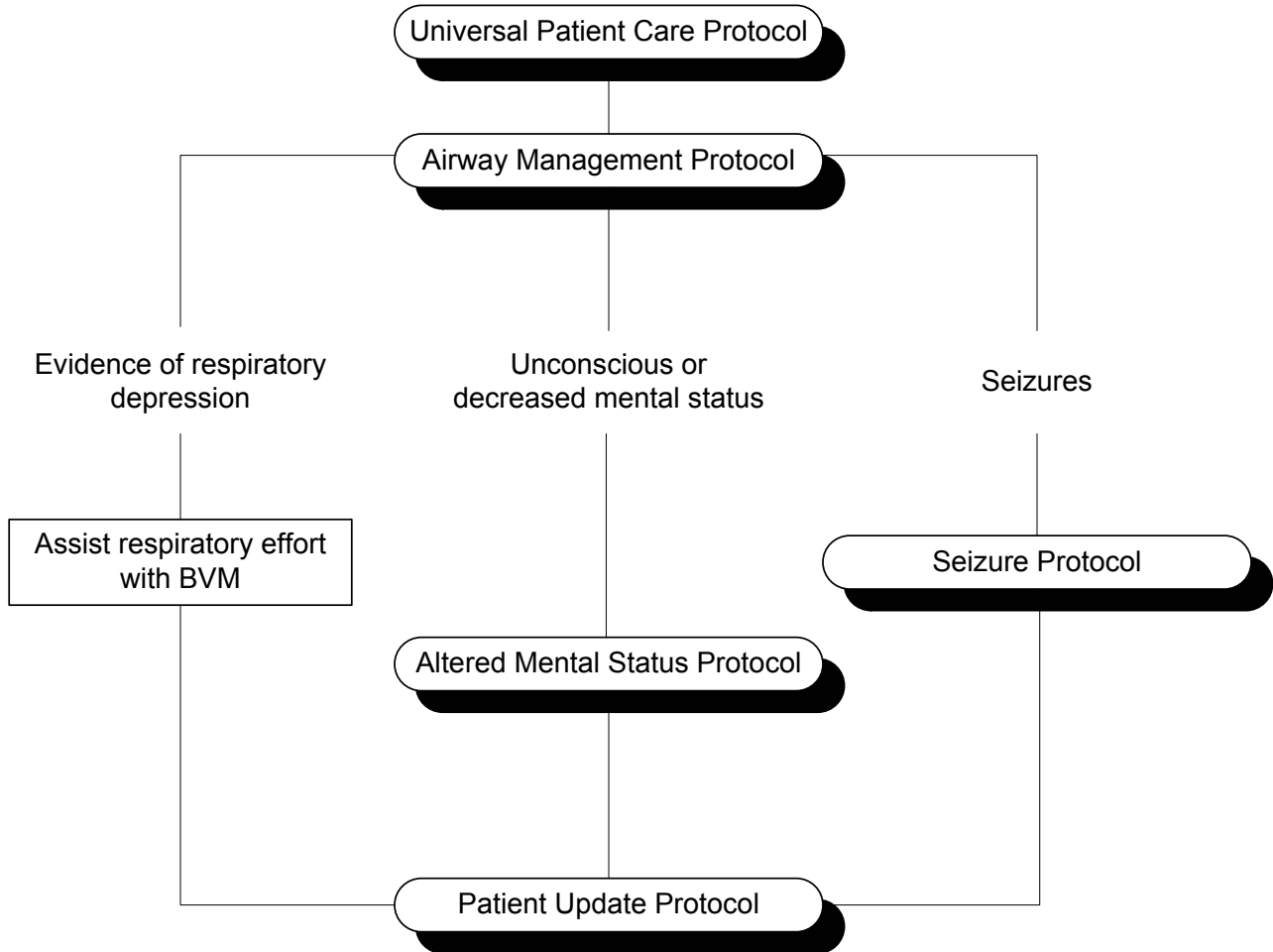


In any patient with respiratory distress, always consider airway obstruction, aspiration, pneumothorax, anaphylaxis and CHF/Pulmonary Edema

VOMITING and DIARRHEA



OVERDOSE / TOXIC INGESTION



Do not rely on patient history of ingestion, especially in suicide attempts
 Consider restraints if necessary for patient/personnel safety
 Tricyclic overdoses progress rapidly from alert mental status to DEATH
 Bring all medication bottles to ER

RESPIRATORY DISTRESS

(WITHOUT CHEST PAIN)

Universal Patient Care Protocol

Airway Management Protocol

Does patient have signs of Pulmonary Edema ?
(rales, cyanosis, diaphoresis or frothy sputum)

YES

NO

Have patient sit upright with feet dangling. Assist with BVM if needed

YES

Are there signs of Anaphylaxis ?

Anaphylaxis Protocol

NO

YES

Is there wheezing, decreased air movement, or Hx of Asthma/COPD ?

Asthma/COPD Protocol

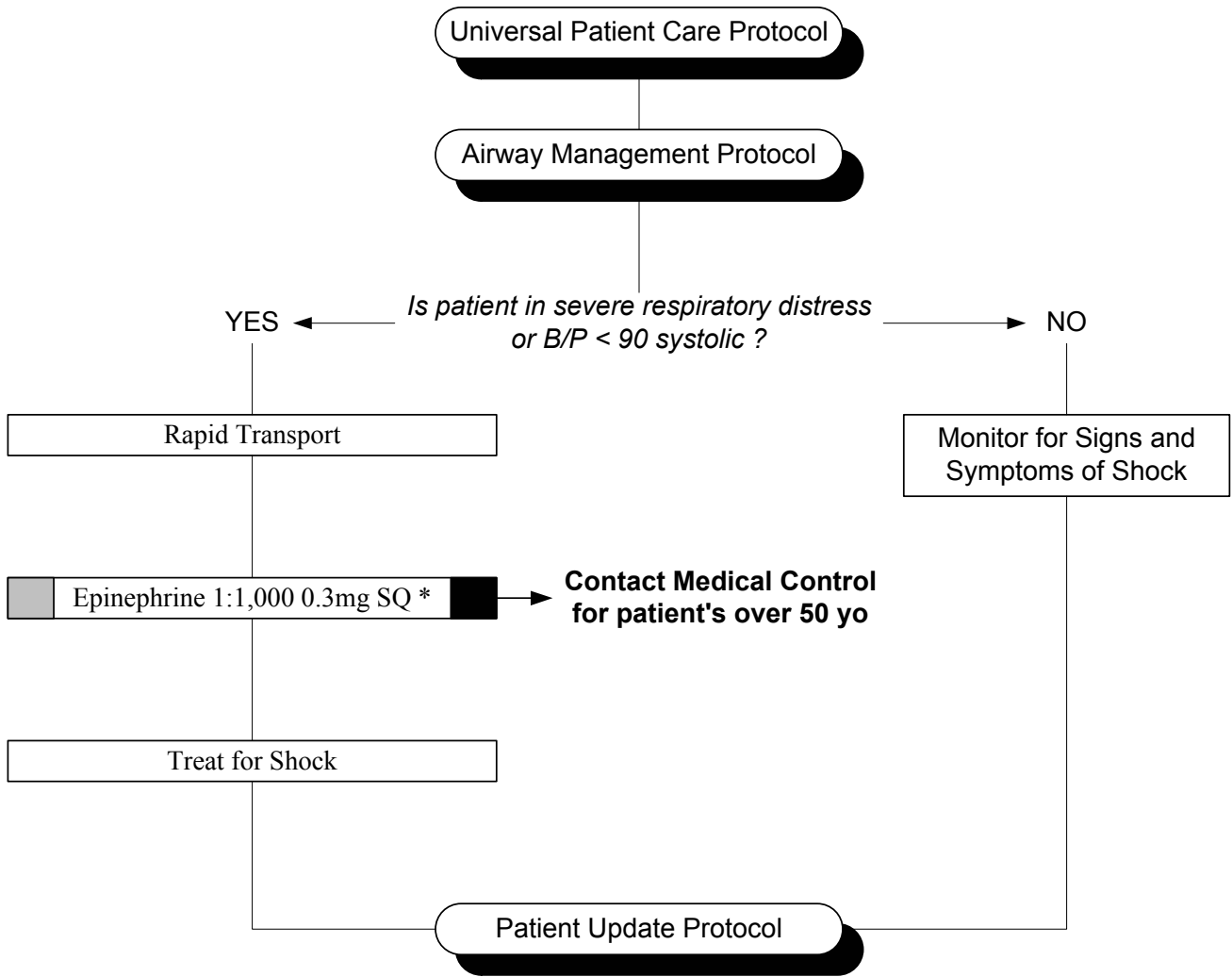
NO

Patient Update Protocol

Assess patient V/S after each intervention
Be prepared to assist ventilation's

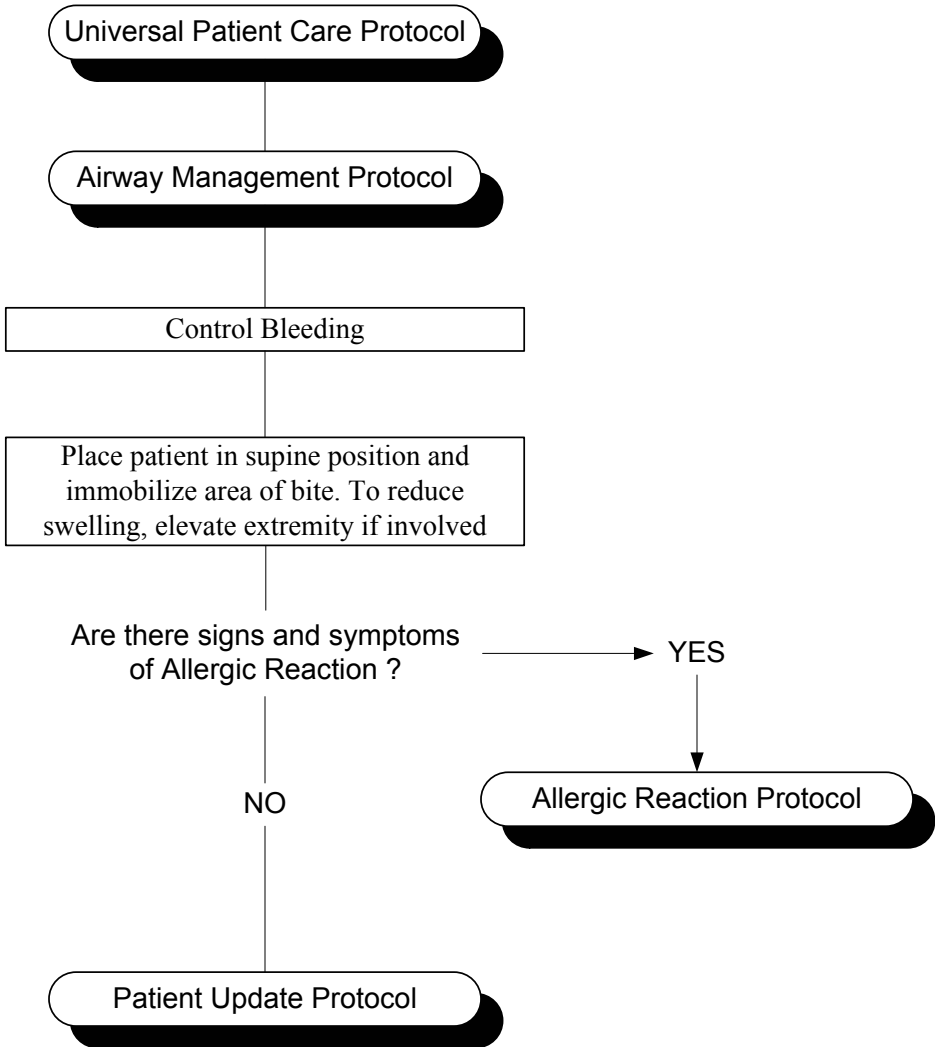
ALLERGIC REACTION

History of insect sting, food or medication allergy and has any of the following:
Dyspnea, Hives, Facial Swelling, or Wheezing.



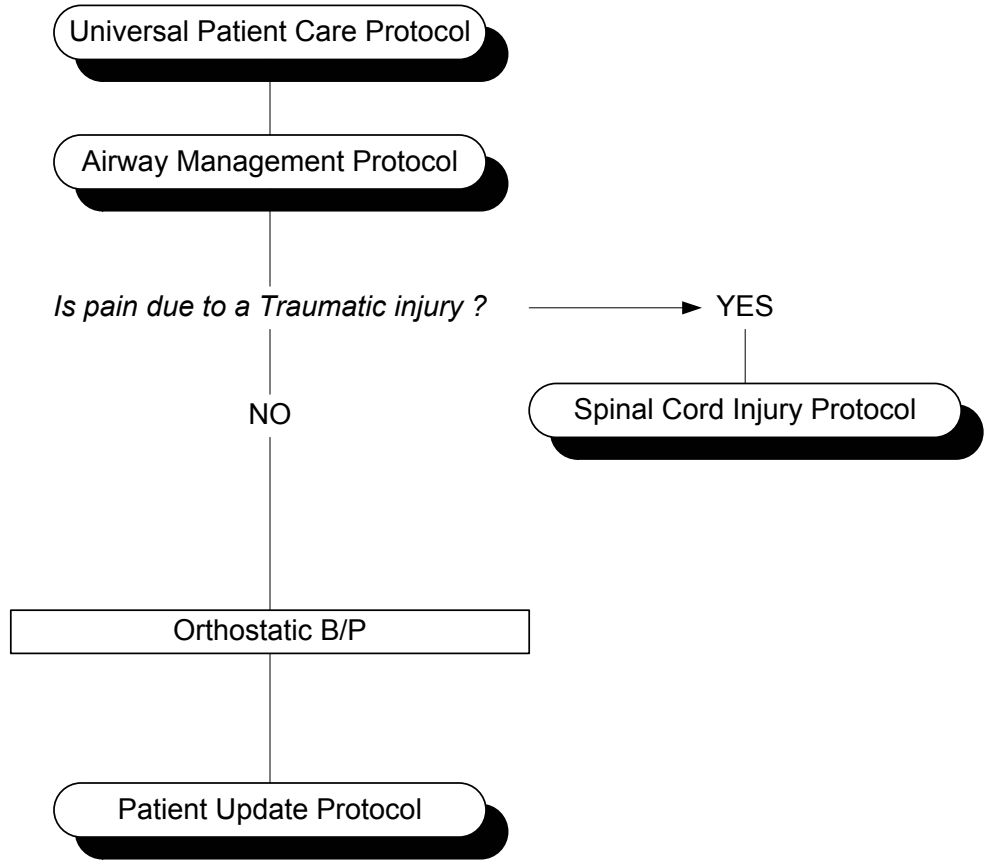
Watch for adverse side effects of Epinephrine in older patients or those with Hx of Cardiac disease
 The shorter the onset from symptoms to contact = the more severe reaction.
 Reactions may be mild (hives) and progress to resp. distress and death in minutes.
 Anaphylaxis can be defined as hypotension and shock with or without resp. distress

BITES AND ENVENOMATIONS



Nothing PO
If possible, identify snake or spider without putting yourself in danger

BACK PAIN



Abdominal aneurysms are a concern with patients over the age of 50
Kidney stones typically present with an acute onset of flank pain which radiates to the groin area
Any bowel or bladder incontinence is a significant finding which requires medical evaluation

EPISTAXIS

Universal Patient Care Protocol

Airway Management Protocol

Ice Packs
Compress Nostrils
Tilt head forward

Orthostatic B/P

Patient Update Protocol

It is very difficult to estimate the amount of blood loss with nose bleeds
Bleeding may also occur posteriorly. Evaluate for posterior blood loss by examining the pharynx

SYNCOPE

Universal Patient Care Protocol

Airway Management Protocol

Manually control C-Spine until
exam completed

Orthostatic B/P

Check Glucose

Patient Update Protocol

Assess for signs and symptoms of trauma if associated or questionable fall with syncope
Consider dysrhythmias, GI bleed, Ectopic pregnancy and a seizure as possible causes of syncope

OBSTETRICAL EMERGENCY

Universal Patient Care Protocol

Airway Management Protocol

Assess for vaginal bleeding,
Abdominal pain, known
pregnancy, missed period

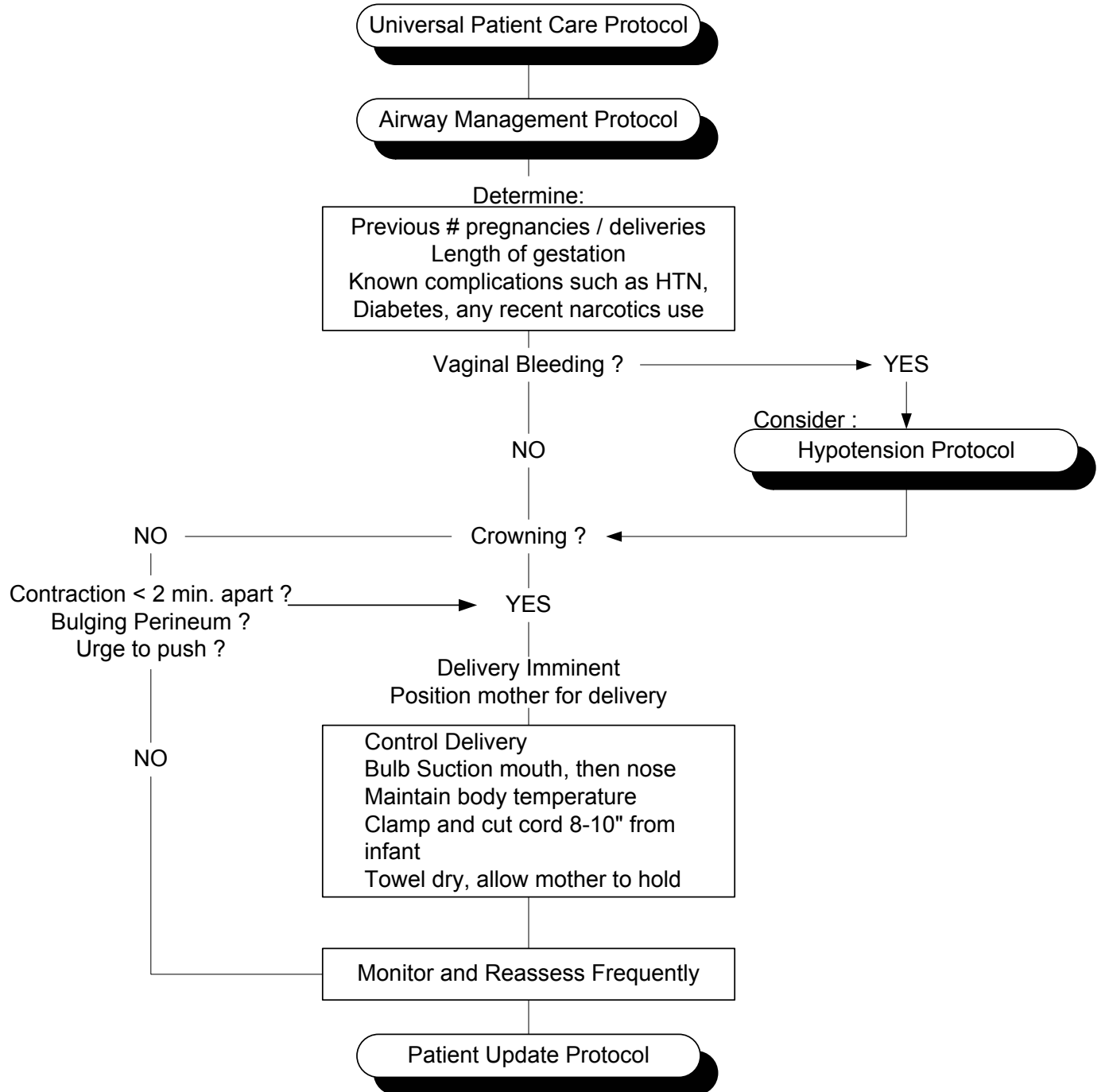
Place in Left lateral position

Check Glucose

Patient Update Protocol

In the setting of pregnancy, hypertension is defined as a B/P > 140 systolic or > 90 diastolic
Maintain patient in left lateral position to minimize risk of supine hypotensive syndrome

CHILDBIRTH / LABOR



If placenta delivers on scene or enroute, place in container for inspection

For prolapsed cord: place mother in knee-chest position, push up on head and rapid transport
 For excessive bleeding after Placenta delivery Fundal massage for 5-10 minutes or allow baby to nurse, monitor for hypotension



SUBCUTANEOUS INJECTIONS

INDICATIONS

Systemic allergic reactions or as alternative route for selected medications

CONSIDERATIONS

May be performed by EMT-I or EMT-P and EMT's who have completed an Epi class
Patient may or may not know what caused the reaction
The most common site is the arm and injection volume should not exceed 1cc

PROCEDURE

Assemble all required equipment
Check medication for expiration date, cloudiness, defects, particles, etc.
Explain procedure to patient and confirm allergies
Expel air from syringe
Select appropriate site and prepare with alcohol prep
Pinch skin and insert needle at 45 degree angle, aspirate for blood
If blood aspirated, do not inject medication. Remove needle and select alternate site.
If no blood aspirated, inject medication. Withdraw needle quickly and dispose properly
Apply pressure to site
Monitor patient for desired effects or possible side effects
Document procedure, medication, dosage and route in ACR





BLOOD GLUCOSE ANALYSIS

INDICATIONS

Patients with suspected hypoglycemia (diabetic emergencies, seizures, change in mental status, bizarre behavior, etc.)

PROCEDURE

Gather and prepare equipment
Blood samples can be obtained simultaneously with intravenous access or by finger stick
Place correct amount of blood on the reagent strip per manufacturer's instructions
Document the glucometer reading and treat the patient as indicated by the analysis and protocol
Repeat glucose analysis as indicated for reassessment after treatment and as per protocol





PULSE OXIMETRY

INDICATIONS

Patients with respiratory distress or suspected hypoxemia

CONSIDERATIONS

Pulse oximetry is a tool used for patient evaluation, Treat the patient not the data

Factors that may reduce the reliability of Pulse Ox readings are:

- Poor peripheral circulation
- Excessive pulse ox movement
- Fingernail polish
- Carbon Monoxide bound to hemoglobin
- Irregular heart rate
- Jaundice

PROCEDURE

- Turn machine on and allow for self test
- Inform patient of procedure
- Apply probe to patient's finger
- Allow machine to register saturation level
- Record saturation %, pulse rate and time
- Monitor critical patients continuously until arrival at hospital





SPINAL IMMOBILIZATION

Spinal Immobilization is a Basic Procedure

INDICATIONS

ANY OF THE FOLLOWING PRESENT POST TRAUMA EVENT:

- Unconscious
- Not alert / oriented
- Previous LOC
- ETOH / Drugs
- Cervical Pain
- Cervical tenderness or deformity
- Neurological deficit
- Other severe injury
- Cervical pain with motion
- Mechanism of injury indicates possibility of Spinal injury*

CONSIDERATIONS

- Precautions for vomiting, have suction available
- Endotracheal intubation may be indicated for unconscious patients
- Insure proper fit of cervical collar

PROCEDURE

- Inform patient of procedure, instruct not to move
- Apply gentle, continuous stabilization to neck with hands
- Supplement with use of cervical collar
- Move patient as a unit to long spine board maintaining spinal alignment
- Secure to long spine board using 3 straps or spider straps
- Secure head to board using head blocks or rolled towels with straps or tape. **NO SANDBAGS**
- Secure patient in a manner that no movement of body or head occurs if it becomes necessary to tip board for vomiting
- Maintain complete immobilization until C-spine cleared by physician
- Document procedure and any vomiting pre-arrival or during care

If patient is unstable or a condition exist that may immediately endanger rescuer or patient, Rapid Extrication of patient is acceptable. Document procedure and indications for Rapid Extrication



FLIGHT SCENE PROTOCOL

Trauma scene flights are for the seriously injured patients and should be utilized only when the flight significantly reduces the transport time to the appropriate hospital

The **EMT-P** should notify Medical Control, as soon as possible, of patients who would benefit from Aeromedical Transport

INDICATIONS

Consider patient's with prolonged extrication with serious injuries

CONSIDERATIONS

Ground transport should not be delayed in order to wait on air transport from the scene
Secure all loose items

PROCEDURE

Identify patient that may benefit from air transport
Contact Medical Control and be prepared to give following information :
 Mechanism of Injury
 Patient condition including most recent V/S
 Estimated extrication time
 Estimated transport time to hospital
Medical Control will determine need for air transport and decide if it should occur from scene or if patient is to be transported to hospital to meet the helicopter
If air transport to occur from scene, then EMT-P to contact County Communications and make arrangements for communications to Med Center Air
A clear 100' x 100' area free of loose debris is required with a clear 15 degree angle of ascent path preferred to vertical take-off
Night zones should be marked with flares
Approach helicopter only when instructed to do so by the pilot



ORTHOSTATIC B/P MEASUREMENT

INDICATIONS

Patient with suspected blood or fluid loss or dehydration
Syncope episodes

CONSIDERATIONS

If patient is unable to stand, orthostatics may be taken with patient sitting
If suspected C-spine injury, Do Not Attempt

PROCEDURE

Obtain patient's pulse and B/P while supine
Have patient stand for one minute
Obtain patient's pulse and B/P while standing
If pulse has increased by 20 bpm and systolic B/P decreased by 20mmHg, considered positive
Document both sets of vitals
Determine treatment based on protocol





RESTRAINTS

INDICATIONS

Patients with actual or potential threat to self or others

CONSIDERATIONS

Monitor closely for any type of Resp. distress as Asphyxiation can occur

In any patient where handcuffs are being used, Law Enforcement will accompany patient at all times

Restraints should be used only as a last resort after verbal techniques have failed

The least amount of restraint necessary should be used to accomplished desired purpose

PROCEDURE

Call for additional assistance if needed and contact Medical Control

Assemble all required equipment

Soft restraints (cravats or roller bandages) can be used for extremity restraints. Sheets can be used to limit upper body and lower extremity movement

Monitor restraints and Neurovascular status frequently during transport

Document reason for restraint, types of restraint used and the time restraints were placed in ACR





CARDIOPULMONARY RESUSCITATION (CPR)

INDICATIONS

Basic life support for the patient in Cardiac Arrest

CONSIDERATIONS

Do not perform if patient has valid DNR form

PROCEDURE

Assess the patient's level of responsiveness (shake and shout)
 If no response, open the patient's airway with the head-tilt, chin-lift and look, listen and feel for respiratory effort. If the patient may have sustained C-spine trauma, use the modified jaw thrust while maintaining immobilization of the C-spine. For infants, positioning the head in the sniffing position is the most effective method of opening the airway.
 If no respiratory effort, give two rescue breaths via mouth to mouth or appropriately sized BVM (infant, child, adult)
 Check for pulse (carotid for adults and older children, brachial for infants) for at least 10 seconds
 If no pulse, begin chest compressions based on the chart below :

| Age | Location | Depth | Rate |
|--------|--|---|-----------------------|
| Infant | Over sternum, between nipples (inter-mammary line), 2-3 fingers | 0.5 to 1 inch (1/3 the anterior-posterior chest dimension) | At least 100 / minute |
| Child | Over sternum, just above the xyphoid process, heel of one hand | 1 to 1.5 inches (1/3 the anterior-posterior chest dimension) | 80 to 100 / minute |
| Adult | Over sternum, just above the xyphoid process, hands with interlocked fingers | 1.5 to 2 inches (1/3 the anterior-posterior chest dimension) | 80 to 100 / minute |

Provide at least 8 to 10 breaths / minute with the BVM
 Reassess for pulse every 1 to 2 minutes
 Document the time and procedure in the ACR





OXYGEN ADMINISTRATION RATES

Nasal Cannula

INDICATIONS

Mild to moderate hypoxia
Conditions causing CO₂ retention
Anxious, frightened patient
Nausea and vomiting
Patient that feels suffocated by mask

CONSIDERATIONS

Nasal obstruction

Liter Flow / Minute

O₂ Concentration

| | |
|---|-----|
| 1 | 24% |
| 2 | 28% |
| 3 | 32% |
| 4 | 36% |
| 5 | 40% |
| 6 | 44% |

Simple Face Mask

INDICATIONS

Mild Hypoxia

CONSIDERATIONS

Flow rate > 8 LPM will wash out expired CO₂
May feel confining to patient
Requires tight face to mask seal
Difficult to hear patient speak

Liter Flow / Minute

O₂ Concentration

| | |
|------|--------|
| 8-12 | 40-60% |
|------|--------|

Non-Rebreather Face Mask

INDICATIONS

Respiratory compromise
Shock
Acute MI
Trauma
Carbon monoxide poisoning

CONSIDERATIONS

Flow rate > 8 LPM will wash out expired CO₂
May feel confining to patient
Requires tight face to mask seal
Difficult to hear patient speak

Liter Flow / Minute

O₂ Concentration

| | |
|-------|--------|
| 10-15 | 80-100 |
|-------|--------|

