

Marshfield Clinic Health System Marshfield Medical Center

Emergency Medical Responder

Protocols and Procedures

Marshfield Medical Center Regional Trauma Center Level II Adult and Pediatric

Marshfield Medical Center Comprehensive Stroke Center

Marshfield Medical Center Children's Hospital

Marshfield Medical Center Heart Program

Marshfield Medical Center Medical Transportation Service



Marshfield Clinic

HEALTH SYSTEM

Marshfield Medical Center



marshfield
children's

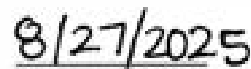
Medical Control

Emergency Medical Responder Protocol

The following protocols are intended for the use of EMS services under the medical direction of Marshfield Clinic Health System, Marshfield Medical Center. The protocols reflect a standard of care incorporating Wisconsin DHS guidelines approved for off-line medical control. Any deviation from the protocols or questions about patient management or disposition require contacting the on-line medical control physician at the Marshfield Medical Center. It is expected that EMS services utilizing advanced protocols and procedures have been approved and have their operational plan updated for each additional skill by the State of Wisconsin DHS Office.



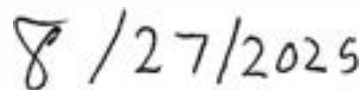
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Abbreviations

Emergency Medical Responder Protocol

AED	Automatic external defibrillator
ALS	Advanced life support
AMI	Acute myocardial infarction
AMS	Altered mental status
A&O	Alert and oriented
ASAP	As soon as possible
BLS	Basic life support
BP	Blood pressure
BSA	Body surface area
BVM	Bag valve mask
CABs	Circulation, Airway, Breathing
CHF	Congestive heart failure
Cm	Centimeter
CMS	Circulation, motor, sensory
CO	Carbon monoxide
COPD	Chronic obstructive pulmonary disease
CPR	Cardiopulmonary resuscitation
C-Spine	Cervical spine
DM	Diabetes mellitus
DNR	Do not resuscitate
ED	Emergency department
EMR	Emergency Medical Responder
EMS	Emergency medical service
FBO	Foreign body obstruction
FBS	Finger Stick Blood Sugar
g	Gram
GCS	Glasgow coma scale
IM	Intramuscular
IN	Intranasal
L/min	Liters per minute
LOC	Level of consciousness
LZ	Landing zone
max	Maximum
mg	Milligram
min	Minute
mL	Milliliter (cc)
MMC	Marshfield Medical Center
mm Hg	Millimeters of mercury
MVA	Motor vehicle accident
NC	Nasal cannula
NPA	Nasopharyngeal airway
NPO	Nothing by mouth
NRB	Nonrebreathing mask
NSAIDs	Nonsteroidal anti-inflammatory drugs
NS	Normal saline
N&V	Nausea and vomiting
NVA	Non-Visualized Airway
O ₂	Oxygen
OPA	Oropharyngeal airway
PERL	Pupils equal and reactive to light
PO	Per mouth
RTS	Revised trauma score
SOB	Short of breath
SpCO	Carboxyhemoglobin level
SpO ₂	Oxygen saturation
sec	Seconds
SC	Subcutaneous
SL	Sublingual
SQ	Subcutaneous
SX	Symptoms
VS	Vital signs

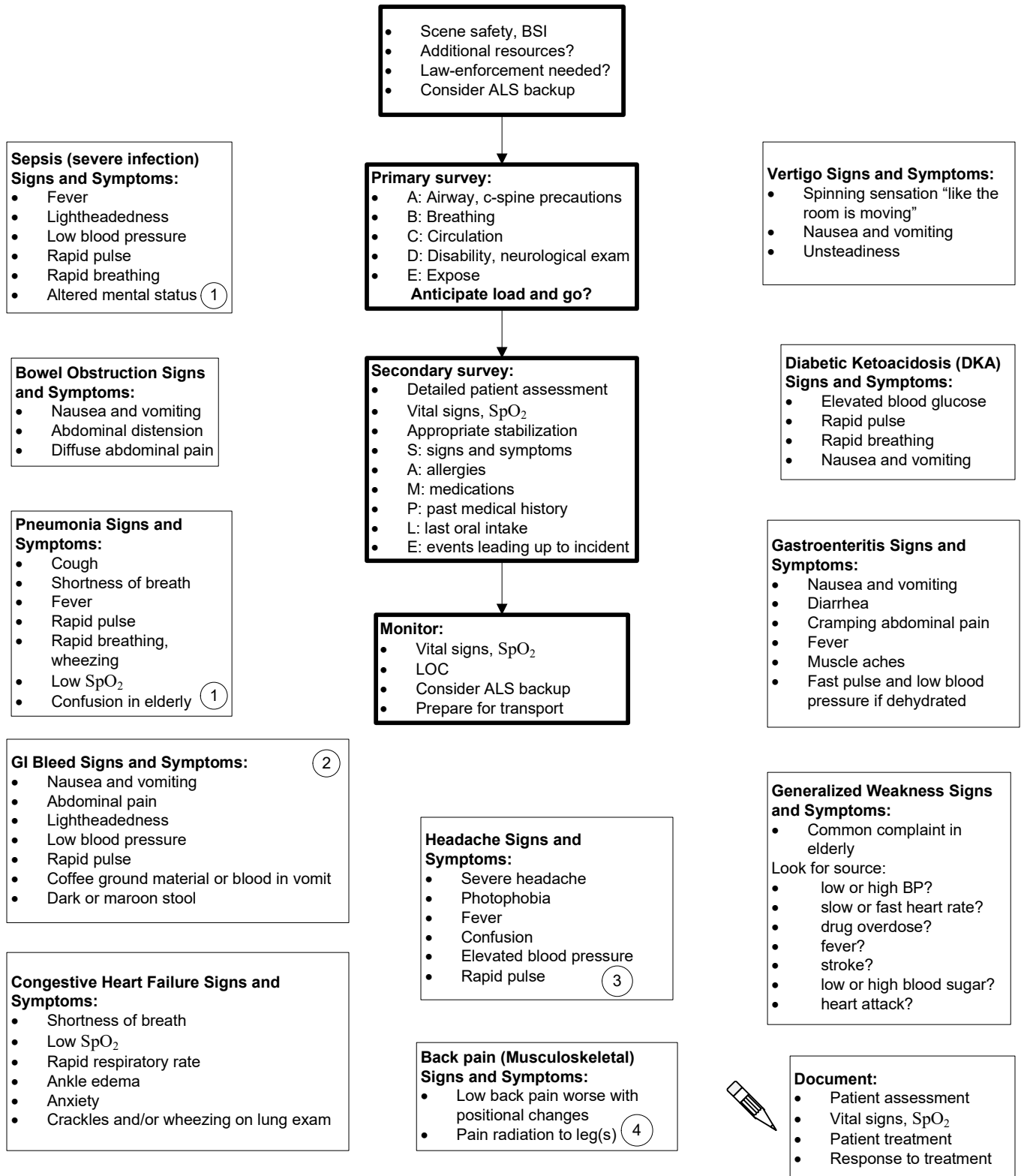
Medication Quick Reference Guide

Emergency Medical Responder Protocol

Medication	Dose	Route	Repeat	Contraindications
Albuterol	Adult: 2.5mg Peds (<12 years): 1.25mg	Nebulizer	May repeat once after 5 minutes	Allergy to Albuterol
Aspirin	324mg (4 tablets) or 325mg (one tablet)	Oral (chewed)		Allergy to Aspirin, Advil, or Aleve
Draw-Up Epi	Adult (≥ 66lb): 0.3mg Peds (<66lb): 0.15mg	IM	May repeat after 10-20 minutes	
Epi-Pen	Adult (≥ 66lb): Epi-Pen Peds (<66lb): Epi-Pen Jr.	IM	May repeat after 10-20 minutes	
Glucose	25g tube	Oral	May repeat if blood glucose below 60mg/dL	Unresponsive, no gag reflex
Narcan	0.4mg (vial) OR 0.5mg (pre-filled syringe)	Intranasal	Every 5 minutes up to total dose of 2mg	≤8 years old, blood glucose <60mg/dL

Patient Assessment and Treatment

Emergency Medical Responder Protocol



¹ Elderly patients are often afebrile despite serious infections.

² Warfarin (Coumadin) overdosing is a common cause of GI bleeding.

³ Photophobia (increased pain with light exposure) and a "throbbing headache" typical of migraine headache; fever, confusion, and stiff neck typical of meningitis; elevated blood pressure and confusion typical of a bleed in the head.

⁴ Abdominal pain radiating to the back and associated with fast pulse and/or low blood pressure may be a rupturing aneurysm. This is a medical emergency, request ALS backup!

Patient Assessment Quick Reference

Emergency Medical Responder Protocol

The following are a list of mnemonics to assist the Emergency Medical Responder in assessing patients. The first priority before beginning the patient assessment is to confirm scene safety. Are there adequate resources available including fire suppression, police, hazmat, water rescue? Next is to assure that the medical responder is wearing appropriate BSI protection.

AVPU
A = alert
V = voice (responds to)
P = pain (responds to)
U = unresponsive

SAMPLE
S = signs/symptoms
A = allergies
M = medications
P = pertinent medical history
L = last intake
E = events leading up to

OPQRST
O = onset
P = provoke
Q = quality
R = region/radiate
S = severity
T = time

DCAP-BTLS
D = deformities
C = contusions
A = abrasions
P = punctures
B = burns
T = tenderness
L = lacerations
S = swelling

Apgar Score			
Sign	0	1	2
Heart rate	absent	<100/min	>100/min
Respiratory effort	absent	slow	good, crying
Muscle tone	limp	some flexion	active
Reflex irritability	no response	grimace	cough/sneeze
Color	blue, pale	body pink	completely pink

Adult and Children Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

Infant and Toddler Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Smiles, interacts	5
	Consolable	4
	Cries to pain	3
	Moans to pain	2
Best motor response	None	1
	Normal movement	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

Vital Signs: Normal Ranges

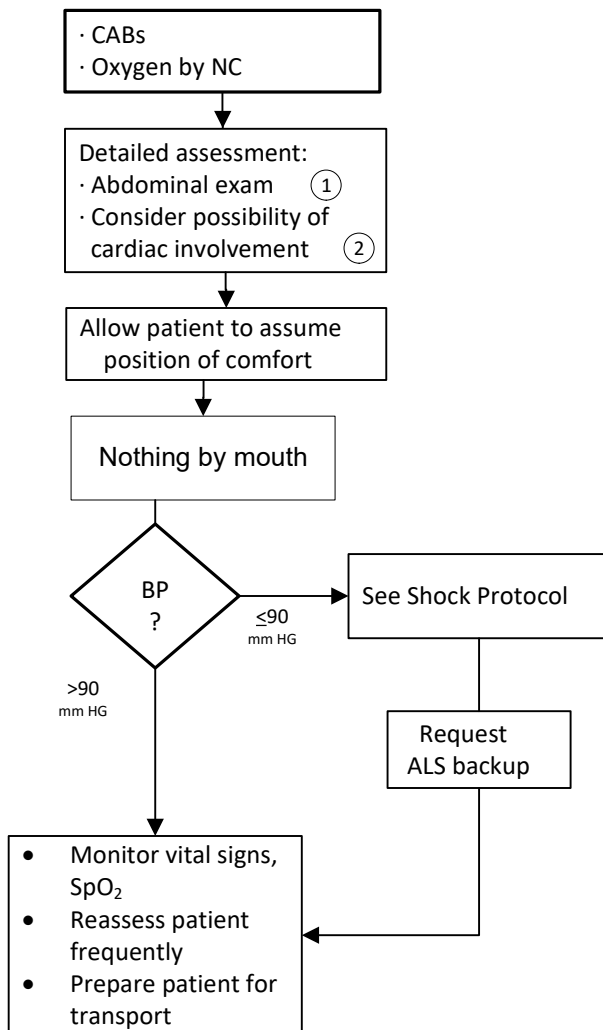
Emergency Medical Responder Protocol

AGE	RESPIRATION	BLOOD PRESSURE	PULSE
Newborn/Birth-6 weeks	30-50	(74-100)/(50-68)	120-160
Infant/7 weeks-1 year	20-30	(84-106)/(56-70)	80-140
Toddler/1-2 years	20-30	(98-106)/(50-70)	90-130
Preschool/2-6 years	20-30	(98-112)/(68-70)	80-120
School age/6-13 years	18-30	(104-124)/(64-80)	70-100
Adolescent/13-16 years	18-30	(118-132)/(70-82)	60-100
Adult >16 years ①	12-20	(100-150)/(60-90)	60-100

1 Women in their late second and early-to-mid third trimester of pregnancy normally have a 5 to 15mmHg drop in both systolic and diastolic BP from their baseline BP. There is also a 10 to 15% increase in resting pulse compared with their baseline pulse.

Abdominal Pain Not Related to Pregnancy or Trauma

Emergency Medical Responder Protocol



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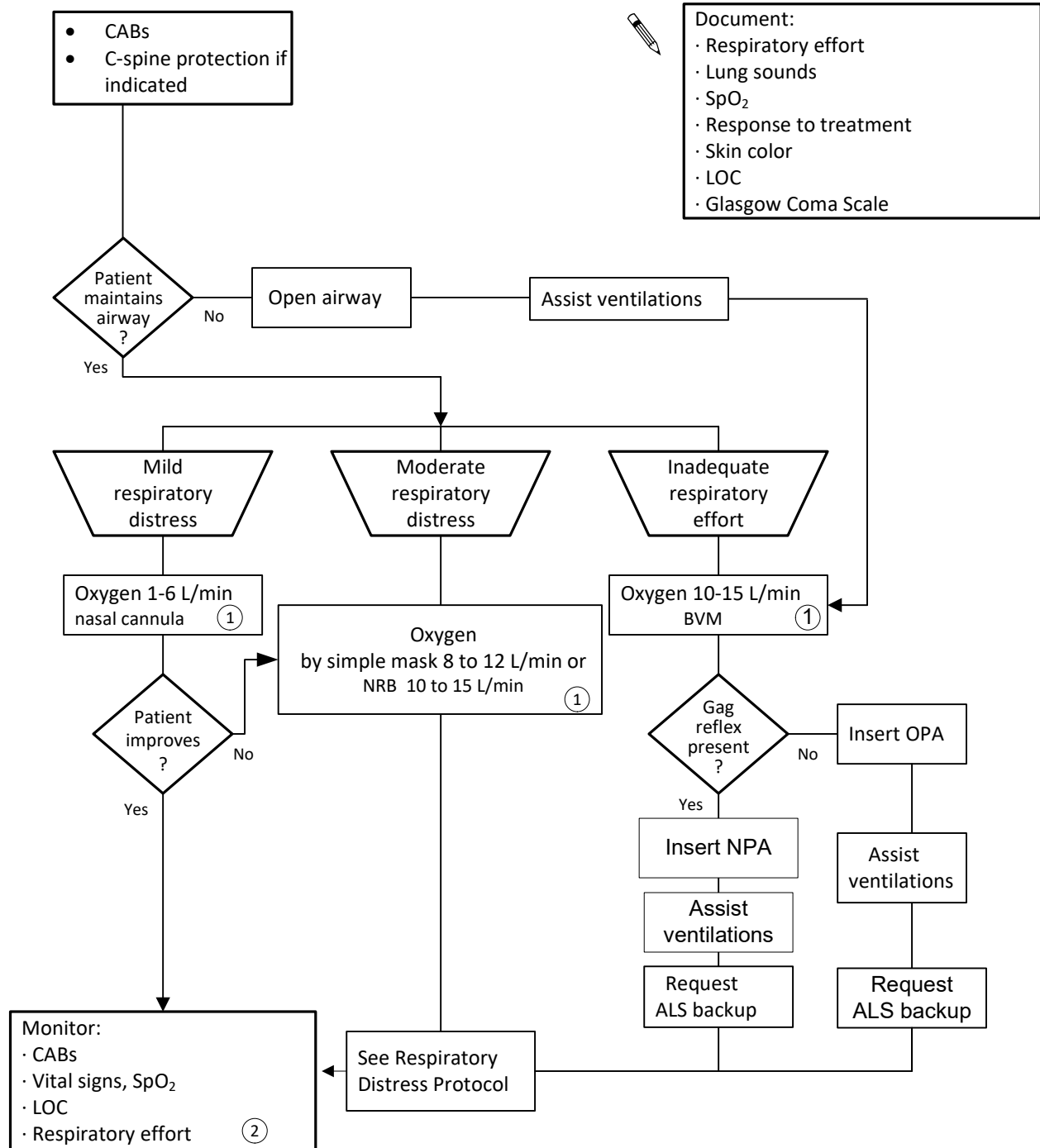
- Abdominal signs and symptoms
- Absence or presence of chest pain
- Patient's description of pain
- Vital signs, SpO₂
- Treatment
- Response to treatment

1 Abdominal exam: Note pain (description, duration, intensity on 1–10 scale, radiation). If abdominal mass is palpated, **avoid** further palpation. Note associated signs and symptoms (nausea, vomiting, guarding, distention.) History: Previous episodes, last meal, current medications, last menstrual period, possibility of pregnancy.

2 Be aware that cardiac pain (heart attack) can present as abdominal pain, especially in the elderly.

Airway Management

Emergency Medical Responder Protocol

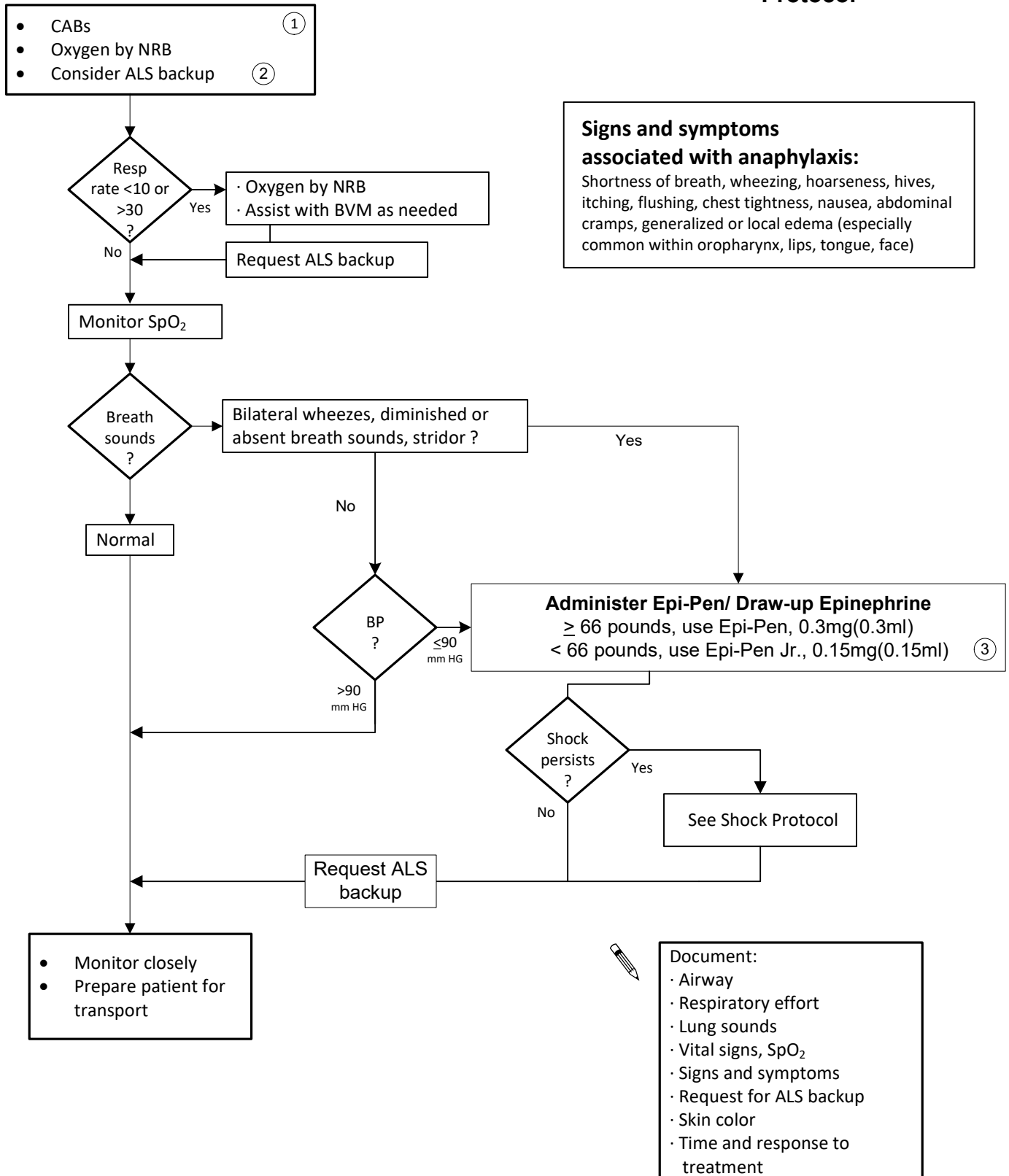


1 Choice of NC, simple mask, NRB, or BVM should be based on patient presentation. Use simplest oxygen delivery method appropriate for the patient. Avoid unnecessary use of masks, especially if there is potential for patient vomiting. Patients with COPD often depend on hypoxic drive to breath. In these cases, expect and accept SpO₂ readings between 85% and 90%. Lower concentrations of oxygen may be indicated, however, never deprive a patient in respiratory distress of oxygen.

2 If the patient's respiratory effort or level of distress changes, move to the appropriate section or arm of this protocol.

Allergic Reaction/Anaphylaxis

Emergency Medical Responder Protocol



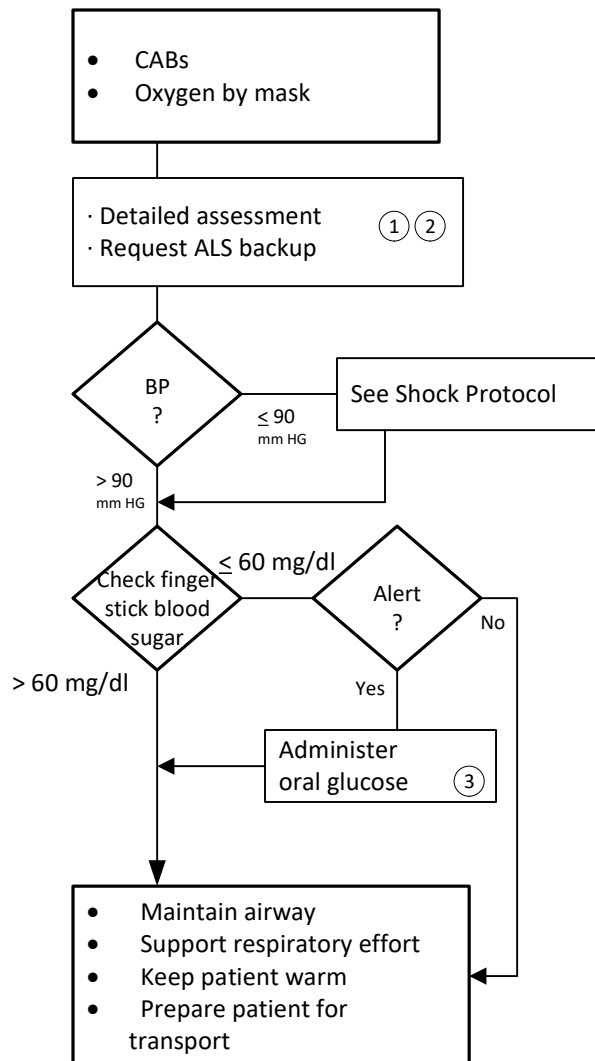
1 Bee sting: Gently remove stinger if still present, scraping horizontal to skin, **avoid** squeezing the stinger.

2 Consider ALS backup for **all** allergic reactions; if breathing difficulties or hypotension noted, ALS backup is required.

3 See Medication: Epi-Pen/Draw-up Epinephrine protocols.

Altered Mental Status

Emergency Medical Responder Protocol



Possible causes:

- Head injury
- Stroke
- Diabetes
- Seizure
- Overdose
- Hypertension

Glasgow Coma Scale

Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

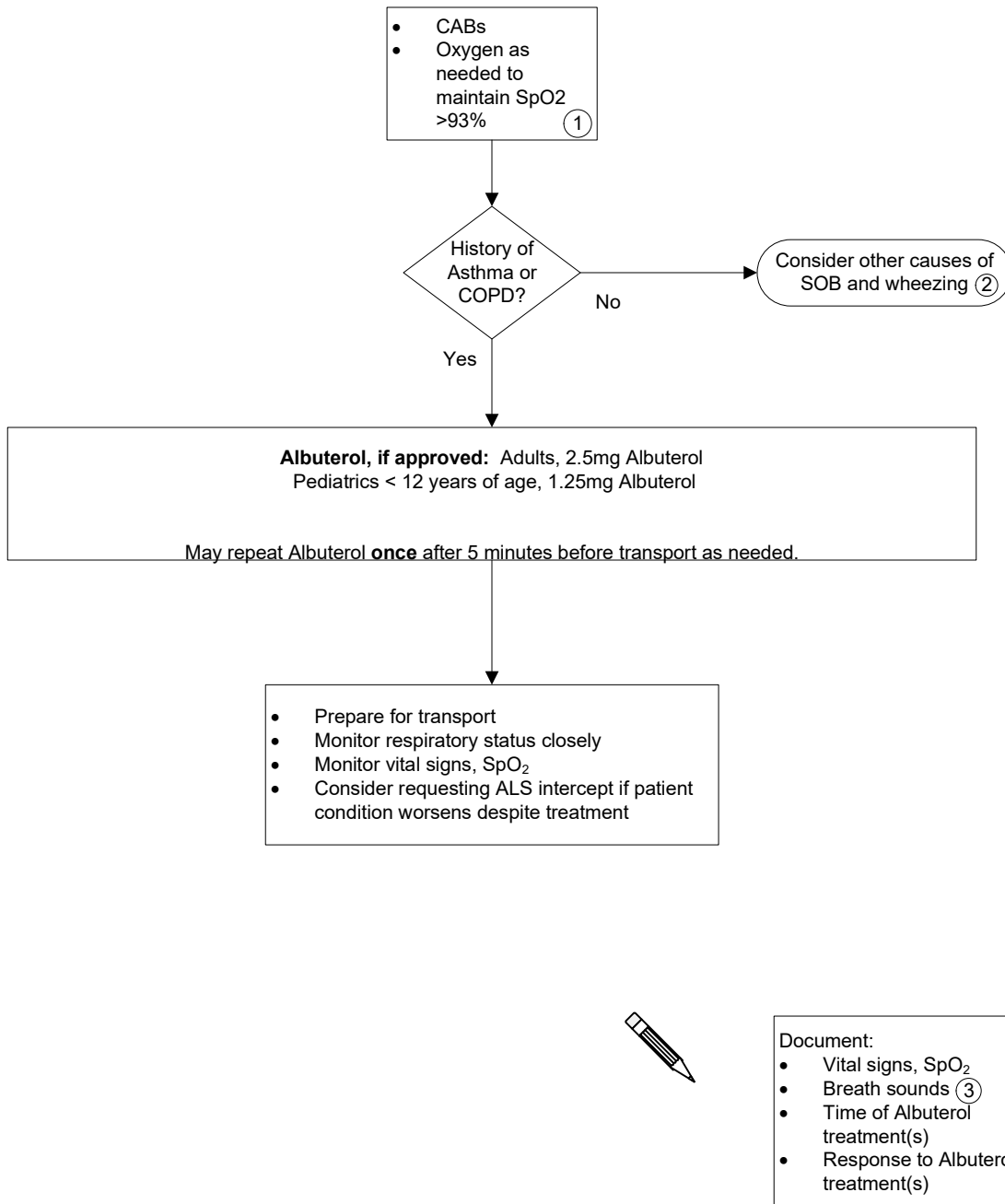
Document:

- Glasgow Coma Scale
- Clinical response to oral glucose
- SpO₂
- Medical history
- Exam
- Vital signs

1 Detailed assessment: Document age appropriate Glasgow Coma Scale score. Check odor on breath. If alcohol is detected, document as “odor on breath **like** alcohol.” Look for medical alert tags, needle tracks, and evidence of trauma.

2 Observe the environment closely for signs of potential overdose.

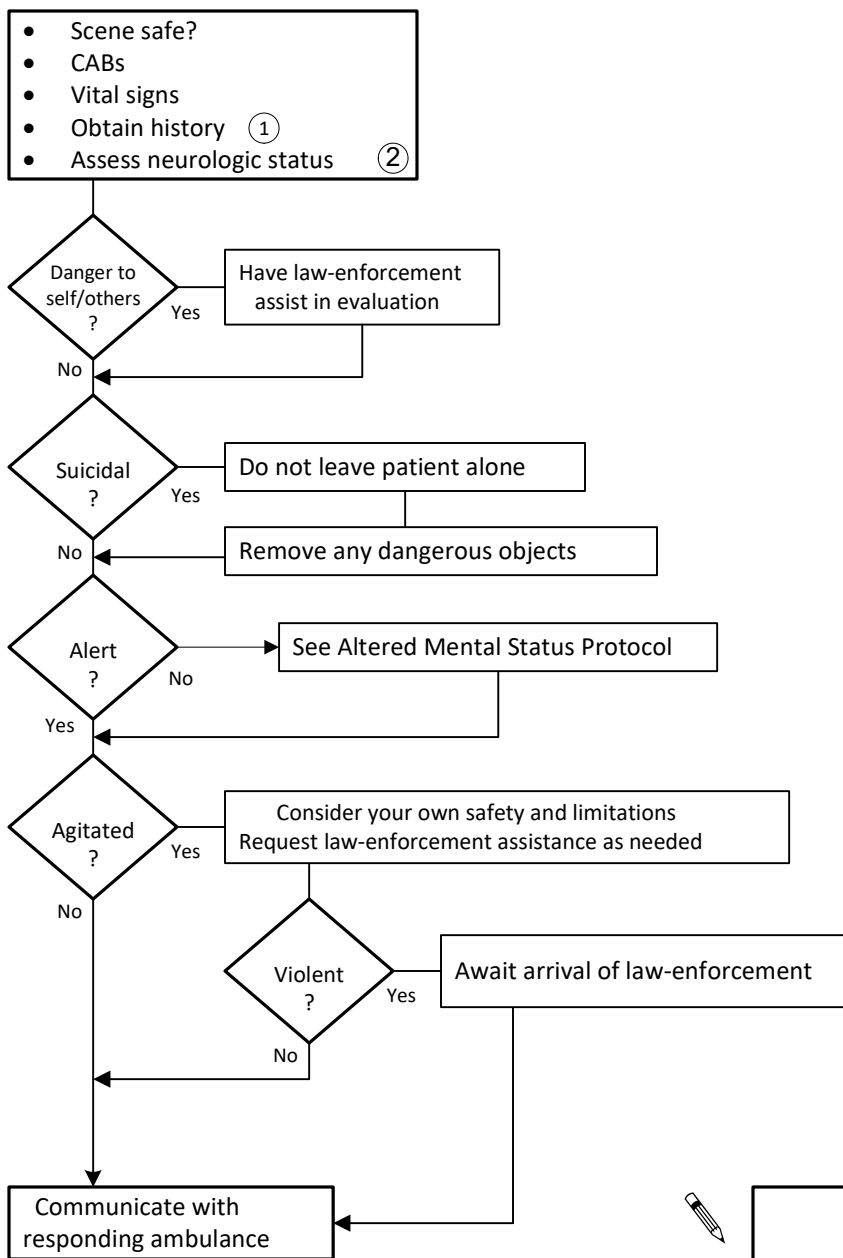
3 If approved, perform finger stick blood glucose check, treat if ≤ 60 mg/dl. The patient must be alert and have an intact gag reflex before oral glucose can be administered. Oral glucose may be given as a glass of sweetened juice or as **glucose oral gel**.



- 1** COPD patients depend on hypoxic drive and tolerate lower SpO₂ values. If in respiratory distress, do **not** deprive these patients of high flow oxygen. Monitor patient closely for CO₂ retention (decreasing level of consciousness and ineffective breathing effort) during and after Albuterol treatment(s). If there is improvement in respiratory status (breathing less labored, better air movement, improvement in SpO₂) place patient on lowest oxygen flow that maintains SpO₂ in the 85% to 90% range.
- 2** Other causes of wheezing include CHF, pneumonia, allergic reaction, and foreign body aspiration. These patients may benefit from an Albuterol treatment – call medical control.
- 3** Patients with a severe attack of asthma or COPD exacerbation may **not** be wheezing due to limited air movement. Administer an Albuterol treatment and high flow oxygen immediately!

Behavioral Disorders

Emergency Medical Responder Protocol

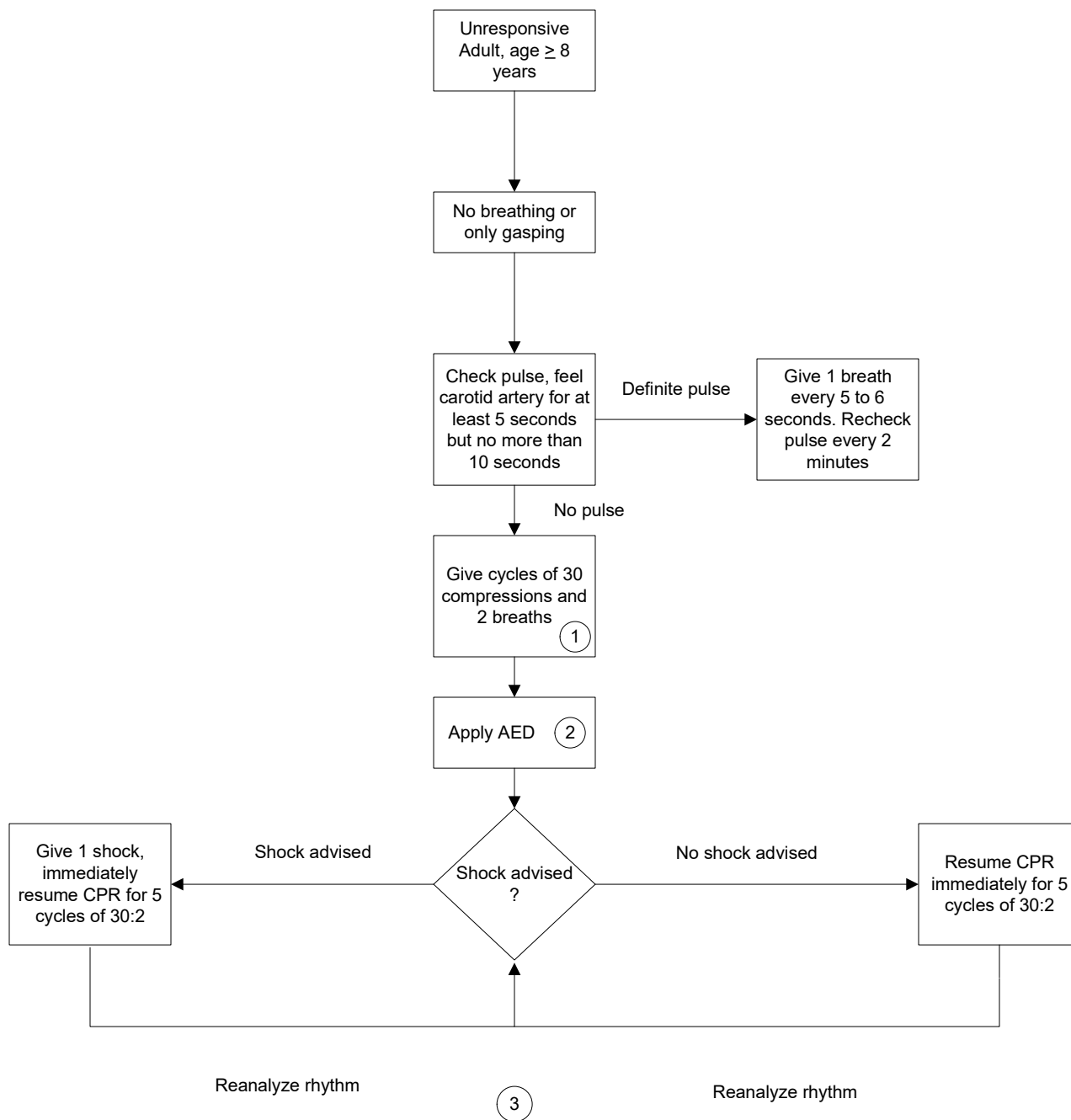


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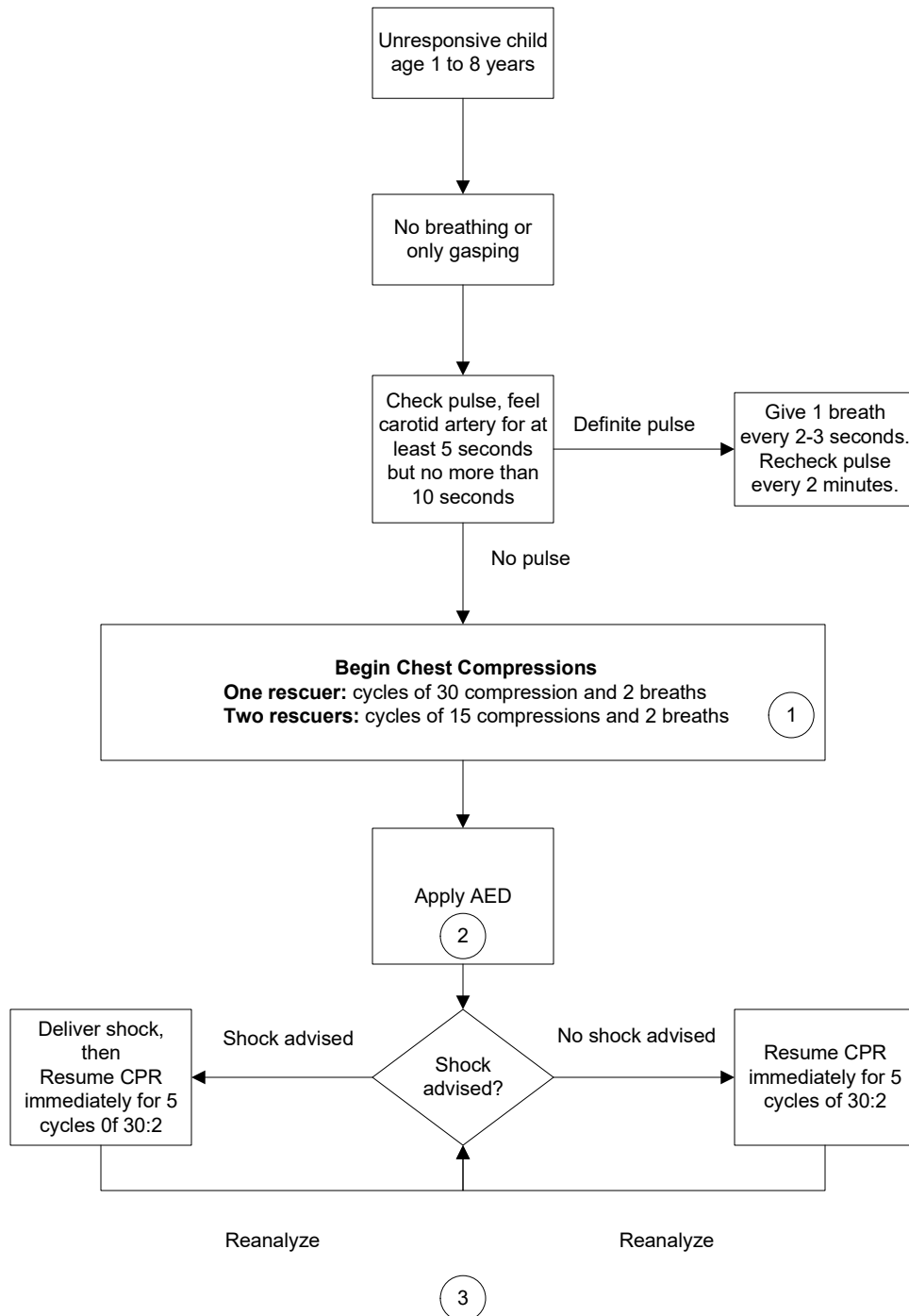
- Behavior
- Speech patterns
- Suicidal ideation
- Glasgow Coma Scale
- Level of cooperation
- Medical history
- Current medications
- Communication with law-enforcement and/or medical control
- Use of TASER and barb location

1 Bizarre behavior, abrupt changes in behavior, suicidal ideation, possible drug or alcohol ingestion, or history of diabetes. If alcohol detected on breath, document as "odor on breath **like** alcohol." Look for a medical alert tag.

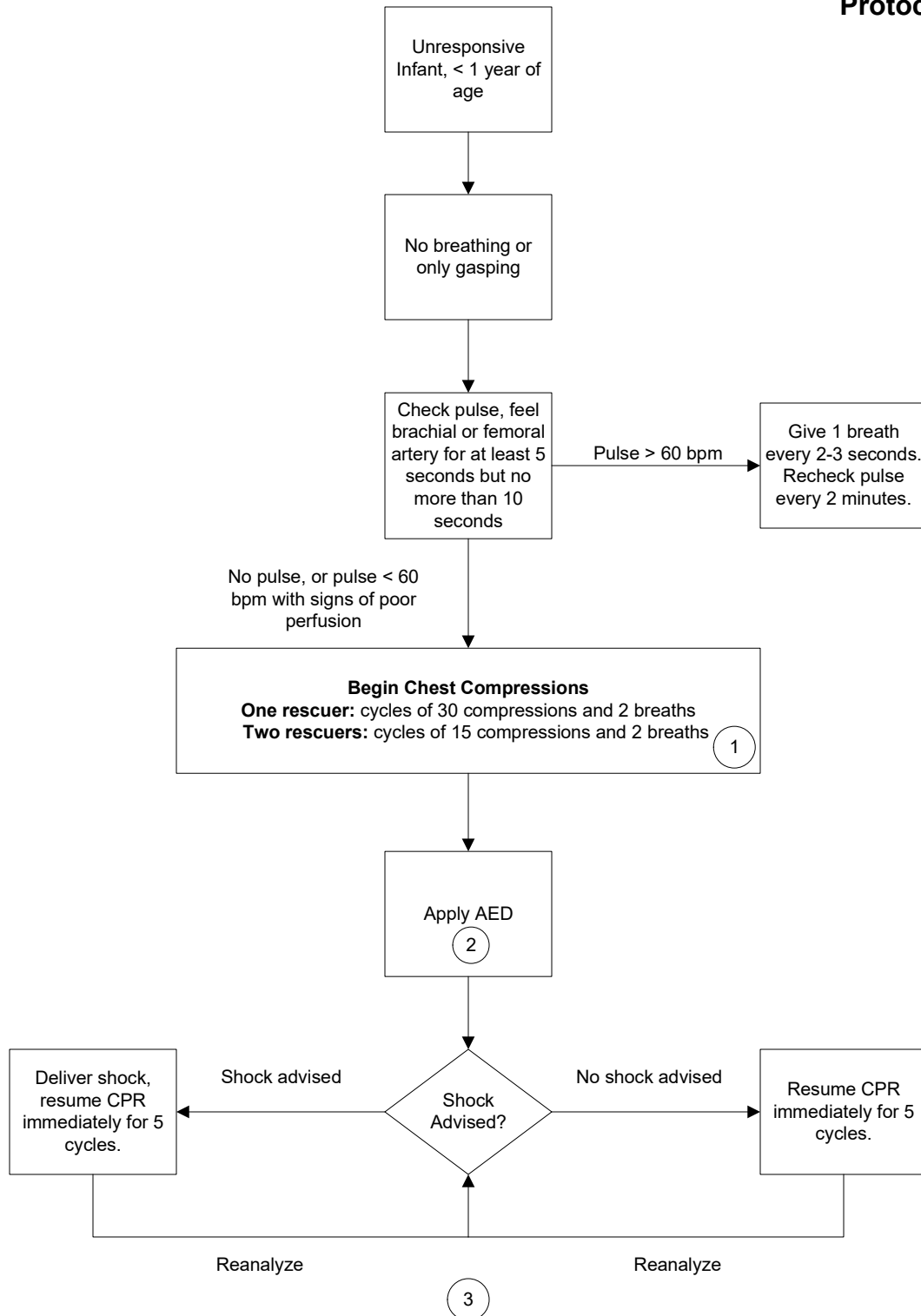
2 Calculate Glasgow Coma Score.



- 1 CPR is performed in cycles of 30 compressions and 2 ventilations with 5 cycles (2 minutes) between AED rhythm analysis. Push hard and fast, at least 100 compressions / minute, releasing completely between compressions.
- 2 AED analysis should be done as soon as possible after determining patient is pulseless and not breathing.
- 3 CPR should be continued until patient is turned over to higher level of care, rescuer physically unable to continue CPR, or patient shows signs of recovery.



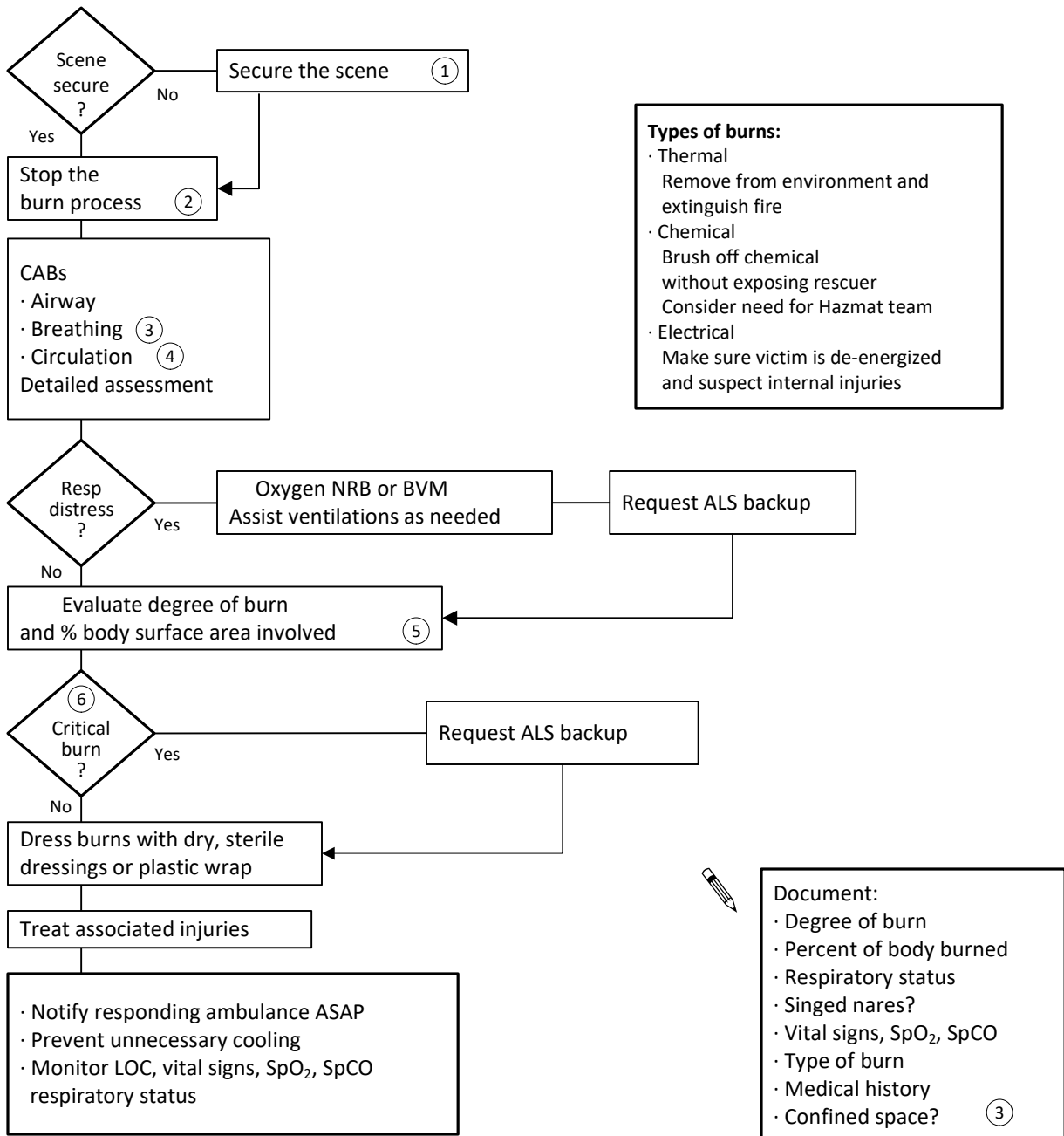
- 1** CPR is performed in cycles of chest compressions and ventilations with 5 cycles (2 minutes) between AED analysis. Push hard and fast, at least 100/minute, and release completely between compressions.
- 2** Use AED with pediatric dose attenuator for children 1 to 8 years of age. If unavailable, use adult AED. AED analysis should be done as soon as possible after determining that the patient is pulseless and not breathing.
- 3** CPR should be continued until patient is turned over to higher level of care, rescuer physically unable to continue, or patient shows signs of recovery.



- 1 CPR is performed in cycles of chest compressions and ventilations with 5 cycles (2 minutes) between rhythm analysis. Push hard and fast, at least 100 compressions/minute, releasing completely between compressions.
- 2 Use AED with pediatric dose attenuator for pulseless infants <1 year of age. If unavailable, use adult AED. AED analysis should be done as soon as possible after determining that patient is pulseless and not breathing.
- 3 CPR should be continued until patient is turned over to higher level of care, rescuer physically unable to continue, or patient shows signs of recovery.

Burns

Emergency Medical Responder Protocol



1 Make sure rescuers can safely help the victim.

2 Remove clothes and flood with water only if flames or smoldering is present.

3 Consider **carbon monoxide (CO)** poisoning if the victim was within a confined space. If potential for CO poisoning exists, administer oxygen by NRB. See Overdose: Carbon Monoxide protocol.

4 If shock is present, consider underlying causes. Request ALS backup.

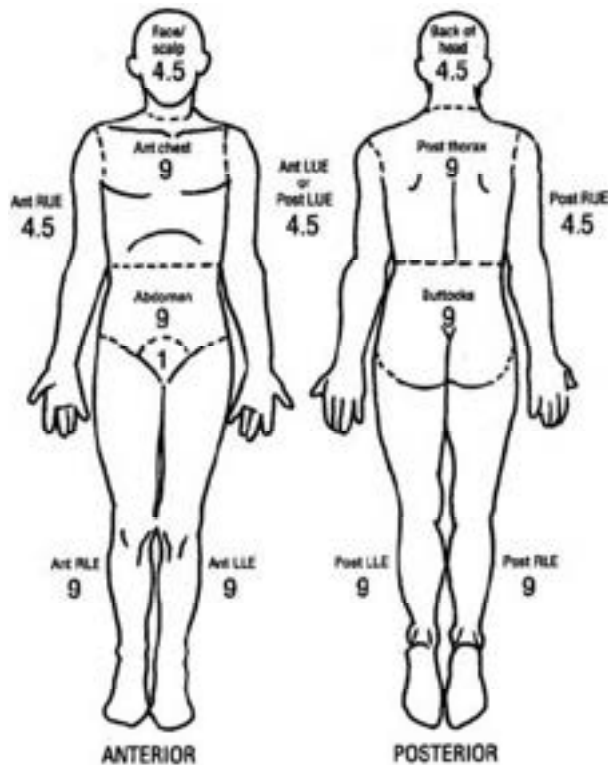
5 Note: The patient's palm represents 1% of his or her BSA. See Burns: Body Surface Area diagram.

6 Critical burn: Any degree 25% BSA; 3rd degree >10%; respiratory injury; involvement of face, hands, feet, or genitalia; circumferential burns; associated injuries; electrical or deep chemical burns; underlying medical history (cardiac, diabetes); age <10 or >50 years.

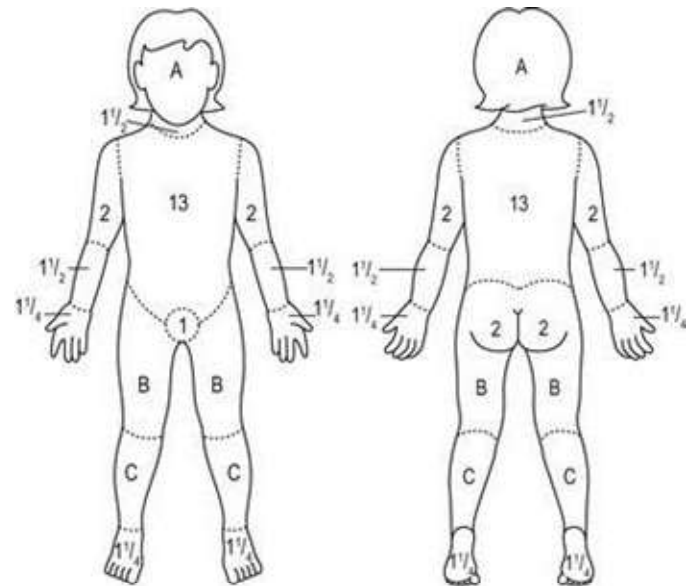
Burns: Body Surface Area Diagrams

Emergency Medical Responder Protocol

ADULT

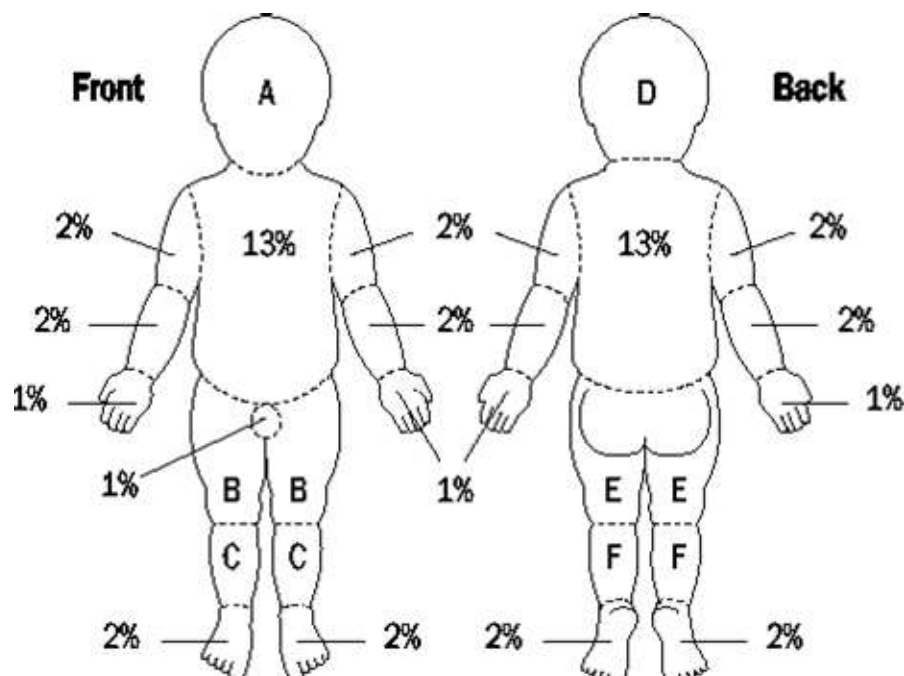


CHILD



Area	Age 0	Age 1	Age 5	Age 10	Age 15	Adult
A = 1/2 head area	9%	8 1/2%	6%	5 1/2%	4%	3%
B = 1/2 thigh area	2%	3%	4%	4%	4 1/2%	4%
C = 1/2 leg area	2%	2%	3%	3%	3%	3%

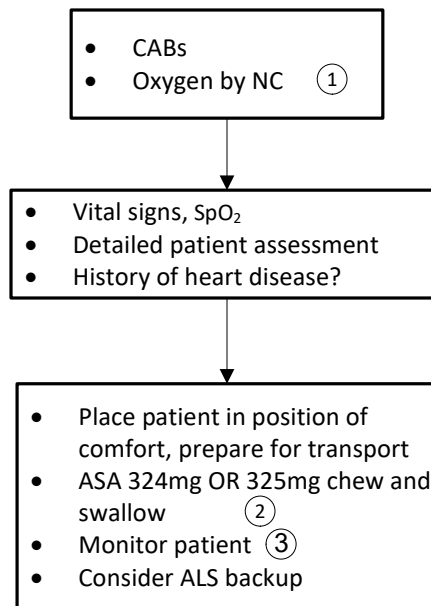
INFANT



Chest Pain

Suspected Cardiac Chest Pain

Emergency Medical Responder Protocol



Document:

- 
- ABCs
 - Medical history
 - Signs and symptoms
 - Quality of pulses
 - Vital signs, SpO₂
 - Glasgow Coma Scale
 - Color, diaphoresis?
 - Lung sounds
 - ASA dose and time
 - Response to treatment

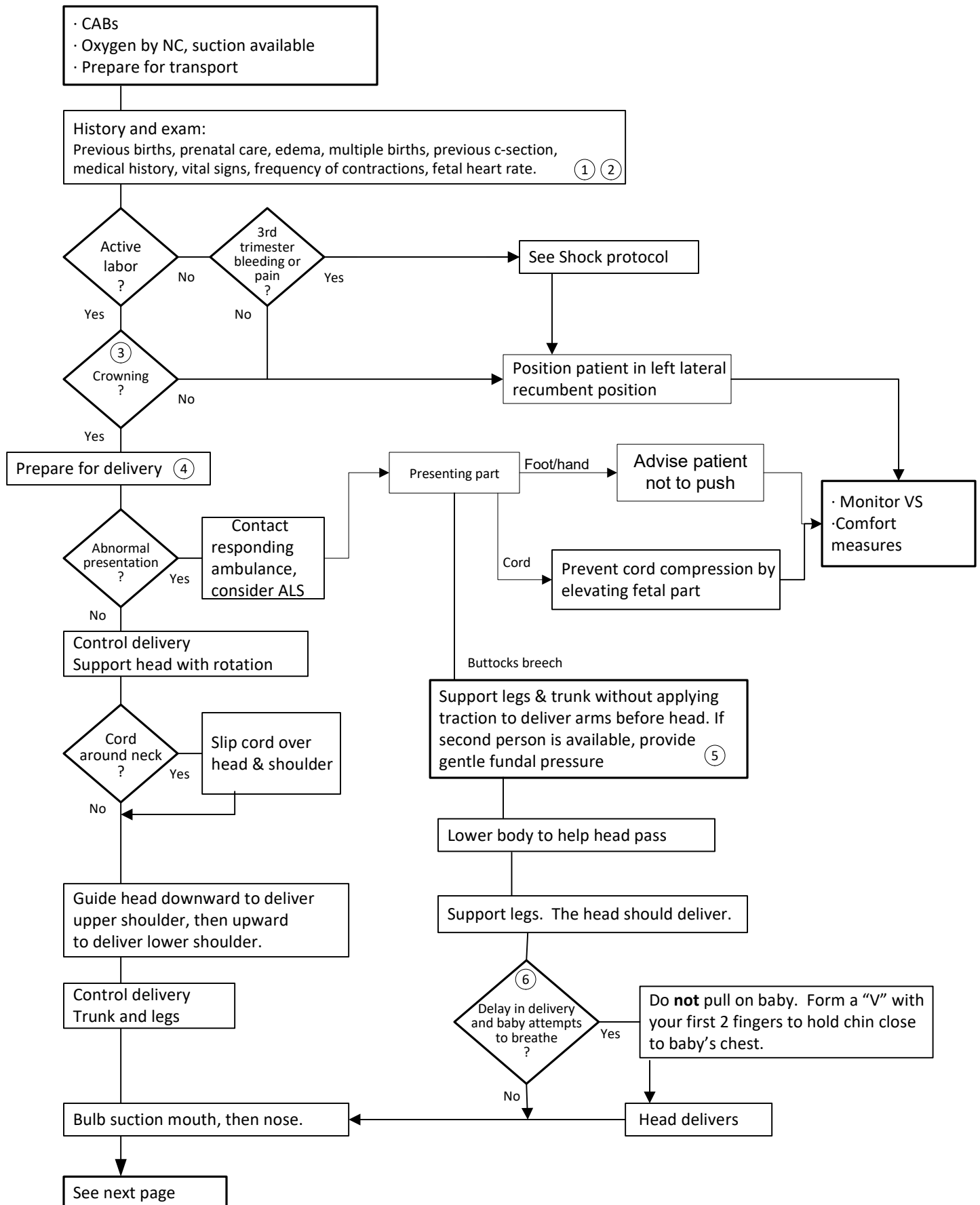
1 Oxygen: Adjust flow rate and route of administration as needed. Consider hypoxic drive in COPD patient and degree of respiratory effort. Non-COPD patients should be able to maintain SpO₂ of 95% or higher. Increase oxygen concentration if SpO₂ is low.

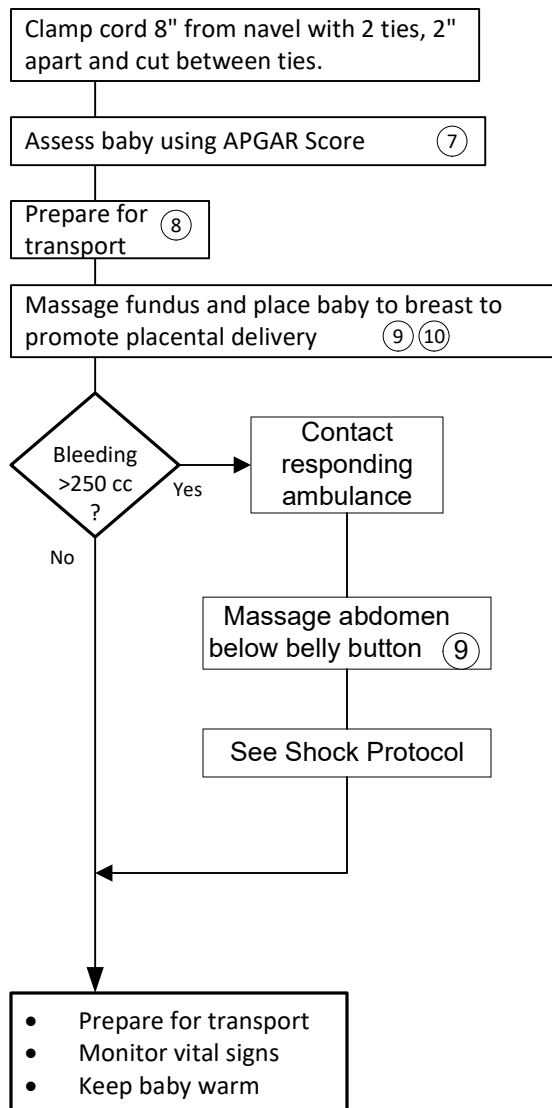
2 Administer ASA, if approved. Do **NOT** give ASA if patient reports allergy to ASA or NSAIDs such as Motrin or Aleve. If patient is on Coumadin or antiplatelet drug (Plavix, Ticlid), ASA should still be given. Any questions, contact medical control. See Medication: Aspirin Protocol.

3 If the patient becomes unresponsive, perform appropriate BLS interventions.

Childbirth

Emergency Medical Responder Protocol





Apgar Score

Sign	0	1	2
Heart rate	absent	<100/min	>100/min
Respiratory effort	absent	slow	good, crying
Muscle tone	limp	some flexion	active
Reflex irritability	no response	grimace	cough/sneeze
Color	blue, pale	body pink	completely pink

Document:

- Time of birth
- APGAR at 1 min and 5 min
- Time of placental delivery
- Estimated fluid and blood loss
- Complications, if any
- Care and supportive measures
- Oxygen provided
- Clinical assessment and vital signs of both mother and baby

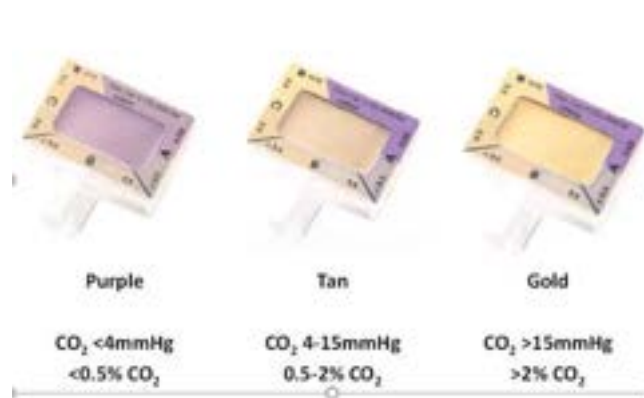
- 1 Normal fetal heart rate = 120 to 150 beats/min.
- 2 Do **NOT** perform a digital exam. Possible placental previa or abruptio placenta.
- 3 Crowning may first appear during a contraction. Look for crowning between and during contractions. Do **NOT** allow anyone to perform a digital exam.
- 4 Deliver baby on the scene only if delivery is imminent.
- 5 Do **not** pull on baby.
- 6 If the baby's head does not deliver and the baby begins to breathe with its face pressed against the vaginal wall, place a gloved hand in the vagina with the palm toward the baby's face. Form a "V" with the index and middle finger on either side of the infant's nose and push the infant's chin to their chest to allow unrestricted breathing.
- 7 Note exact time of birth.
- 8 Keep baby warm. Dry surface, cover head, and protect from falls.
- 9 Massage abdomen below belly button—gentle but firm intermittent massage.
- 10 Do **not** pull on cord.

Colorimetric EtCO₂ Detection Device

Emergency Medical Responder Protocol

Indication: Initial confirmation of proper placement of an advanced airway (King Airway)

Background: A colorimetric end tidal carbon dioxide (EtCO₂) detection device must be used as an adjunct in the initial confirmation of advanced airway placement. The colorimetric device is similar to litmus (pH) paper and is purple at baseline, turning lighter (yellow) in the presence of CO₂. The presence of CO₂ generally indicates proper (tracheal, not esophageal) placement of an advanced airway. However, a detector's indication may be incorrect if there is no exhaled CO₂ from the lungs (e.g. in situations of circulatory arrest with no tissue perfusion), or if there is CO₂ from the stomach (e.g. when carbonated beverages have been ingested). The presence of gastric acid, as from vomiting, may also result in color change despite esophageal ETT positioning (this "false-positive" color change will usually not vary with respiratory cycle).



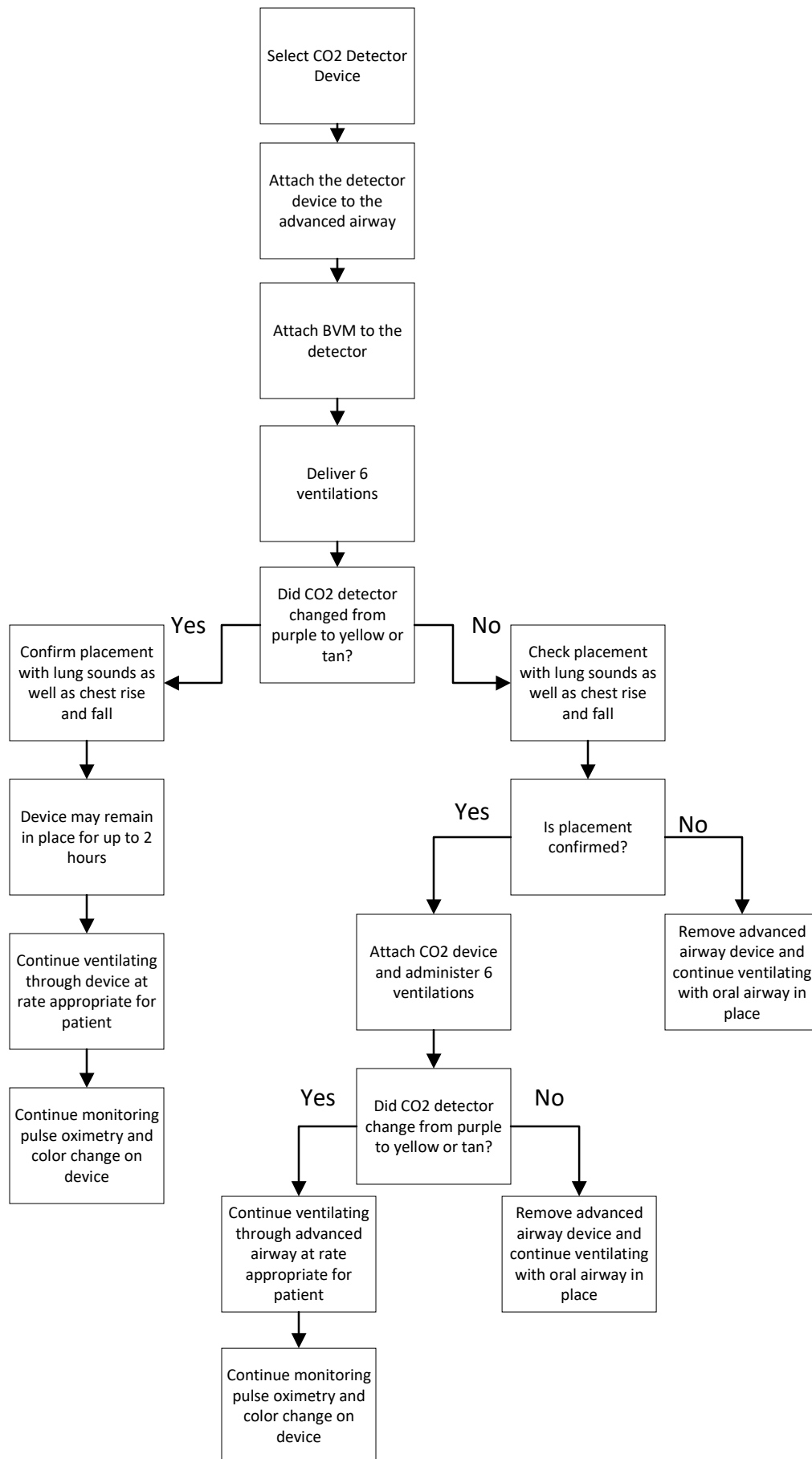
Reminders:

Colorimetric EtCO₂ devices are to be utilized for the initial confirmation of advanced airway placement. Quantitative waveform Capnography must be instituted as soon as possible, this would come from your paramedic intercept.

Contamination of the detector with gastric contents, medication, or mucous may increase resistance, alter color change, and affect ventilation. If the CO₂ detection device becomes contaminated, it should be discarded and replaced.

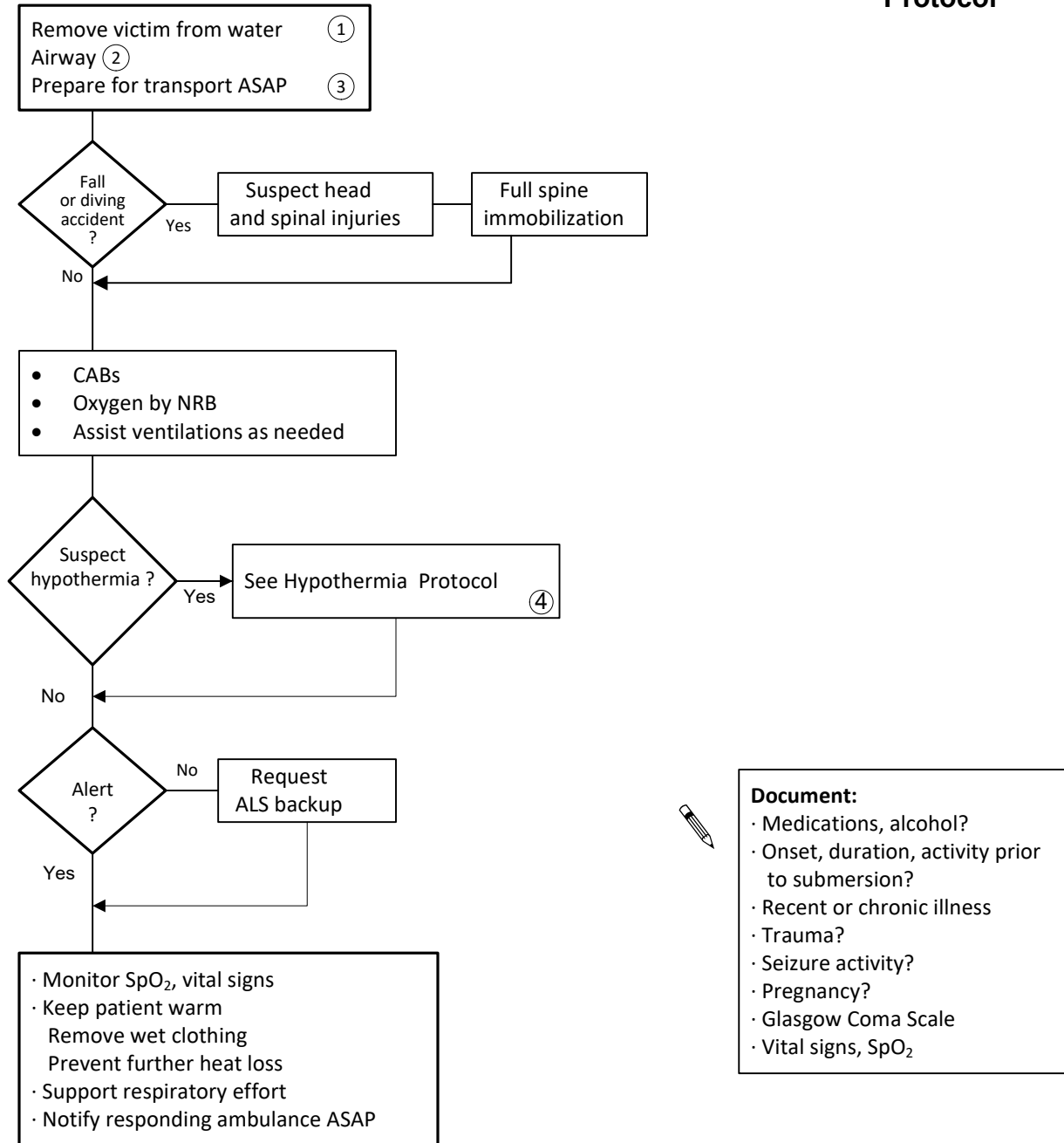
The detector device has a useful life of about two hours and may be left in place for that period of time.

See next page for Colorimetric EtCO₂ Detection Device Procedure



Drowning (Submersion)

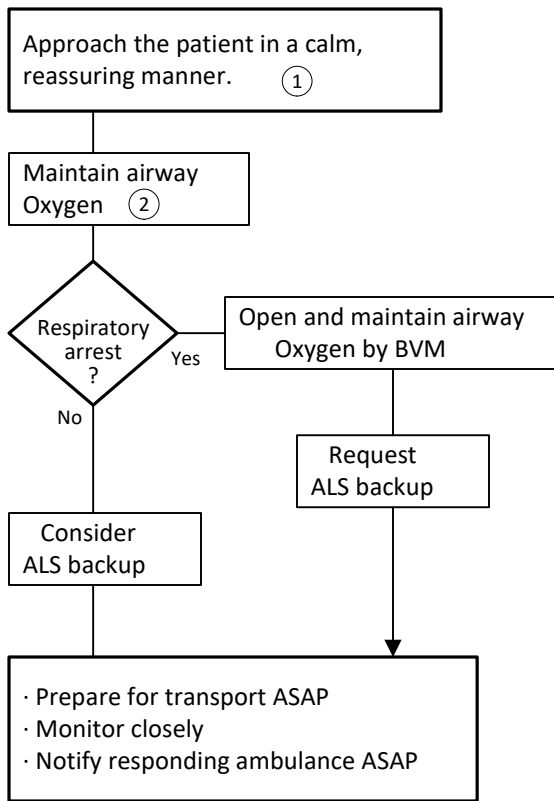
Emergency Medical Responder Protocol



- 1 Scene safety is imperative! Removal of victim from water to be performed by trained rescuers with appropriate rescue equipment.
- 2 Ventilation should be initiated while the patient is being rescued. Be prepared to suction due to increased risk of vomiting.
- 3 All near-drowning victims should be examined by a physician.
- 4 If use of AED is required, remove patient from standing water, dry chest with towels, and proceed with age appropriate BLS protocol.

Epiglottitis

Emergency Medical Responder Protocol



Common characteristics

Epiglottitis:

- Age usually >2 years
- Onset rapid
- Signs and symptoms: fever, often look sick; air hunger, nasal flaring, restlessness, drooling, retractions; want to sit upright

Croup:

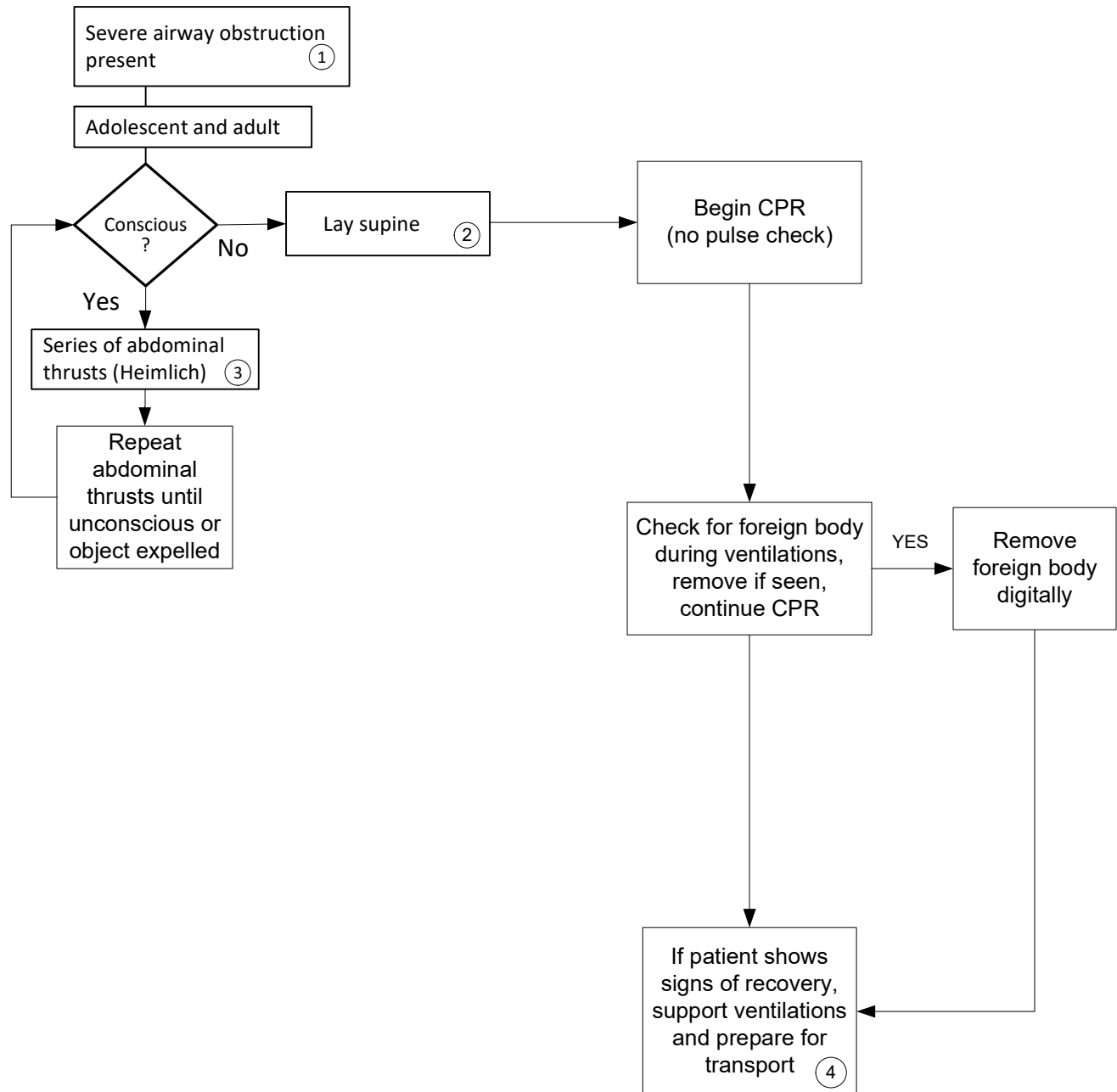
- Age 6 months to 3 years
- Onset gradual
- Signs and symptoms: often preceded by an upper respiratory infection; worse at night; may or may not have a fever; condition varies from mild to severe

Document:

- CABs
- Detailed assessment
- Vital signs, SpO₂
- Glasgow Coma Scale
- Lung sounds
- Skin color
- Treatment
- Response to treatment

1 Avoid startling the patient.

2 Consider blow-by or mask oxygen. Do **not** examine or place anything in the oral cavity.

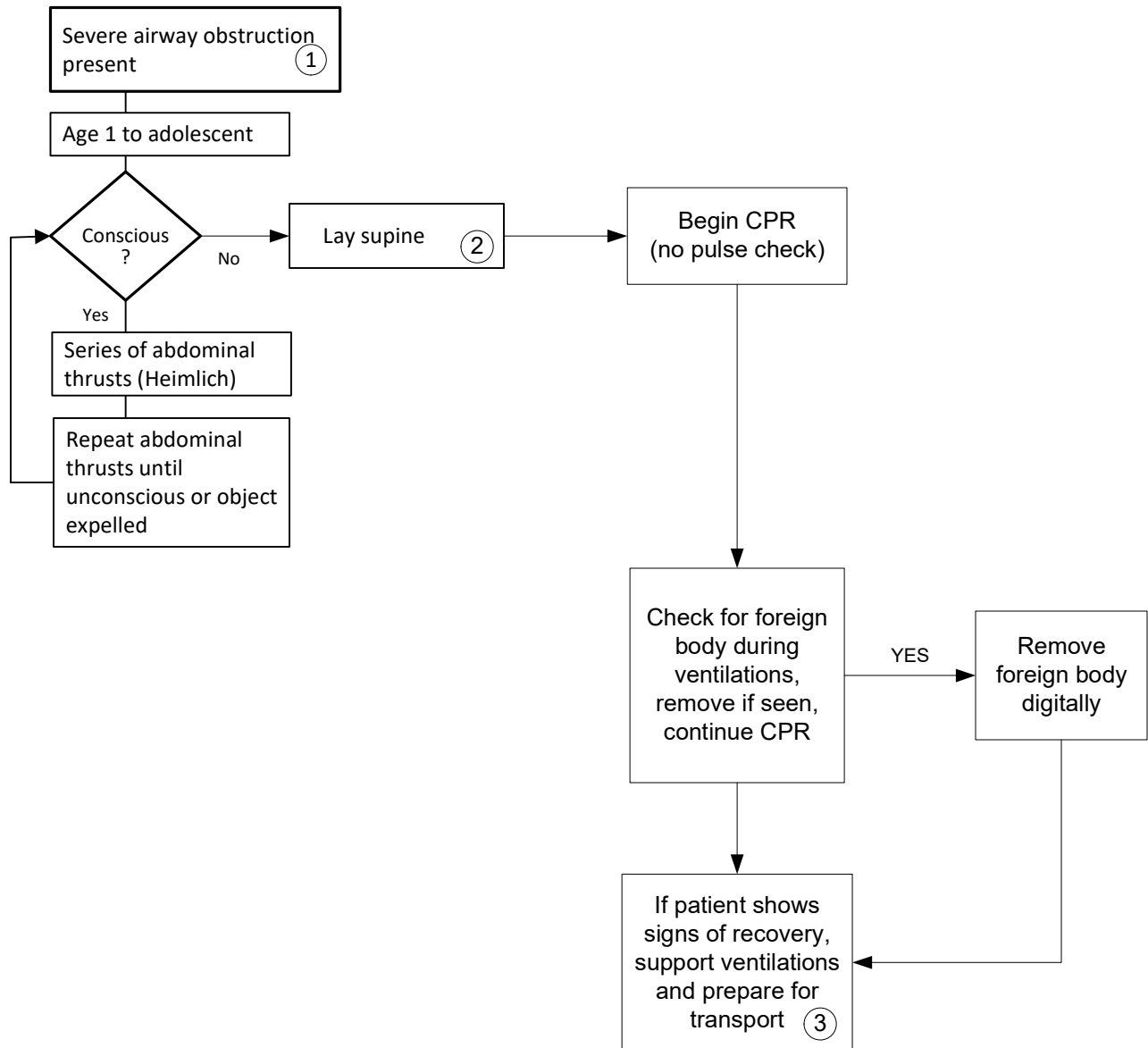


1 This protocol assumes the patient initially has a pulse. Assessment: Ask the patient, "Can you speak?"

2 Choking victims that are found supine and conscious should be given abdominal thrusts until the foreign body is expelled or they become unconscious.

3 **Chest thrusts** may be used if the patient is obese and the caregiver cannot reach his/her arms around the patient. **Chest thrusts** should also be used in patients during late stages of pregnancy.

4 Assist ventilations until consciousness returns. Consider need for advanced airway.



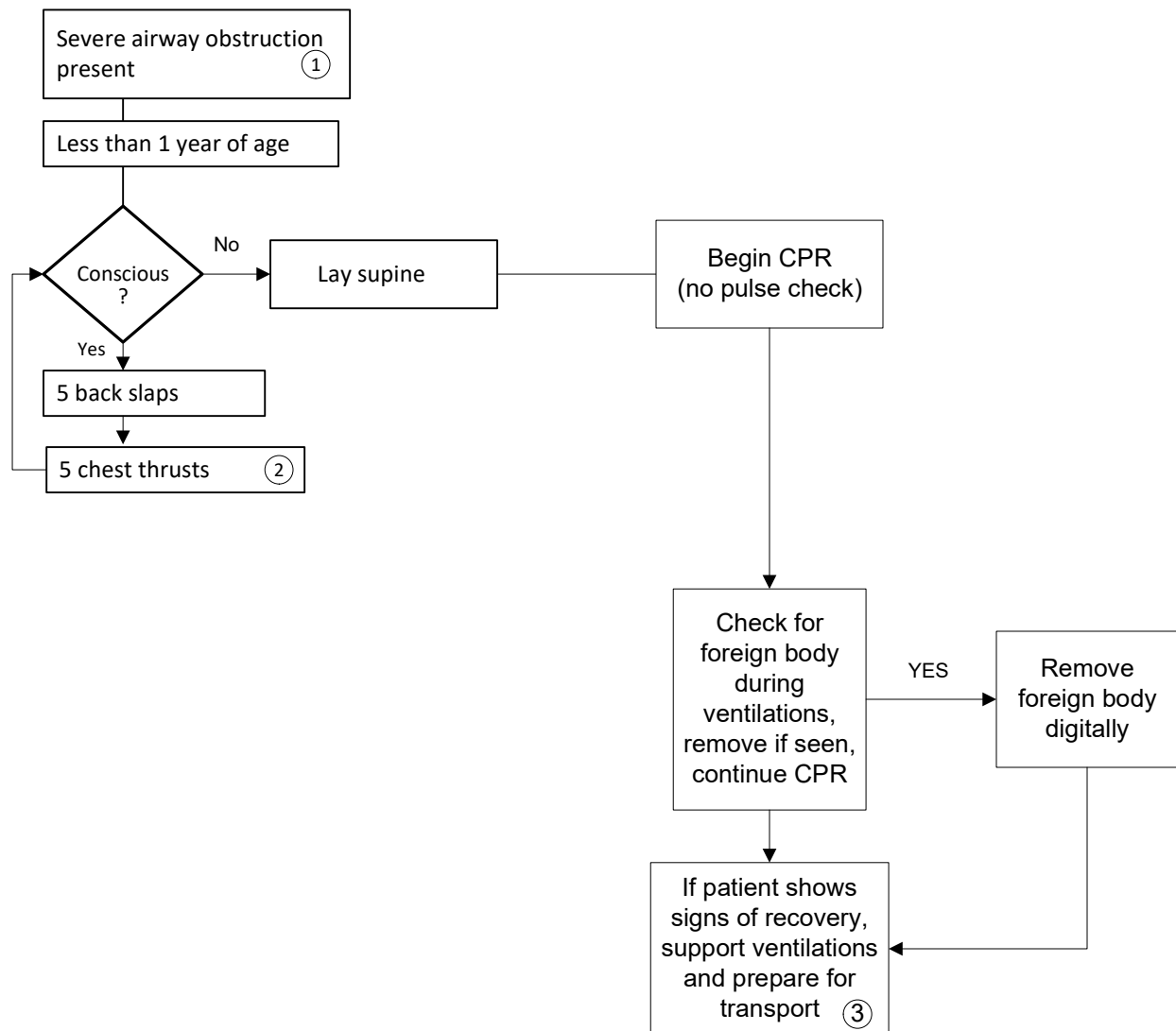
1 This protocol assumes the patient initially has a pulse. Assessment: Ask the patient, "Can you speak?"

2 Choking victims that are found supine and conscious should be given abdominal thrusts until the foreign body is expelled of they become unconscious.

3 Assist ventilations until consciousness returns. Consider need for advanced airway.

Foreign Body Airway Obstruction: Infant

Emergency Medical Responder Protocol



1 This protocol assumes the patient initially has a pulse.

2 Place head lower than trunk.

3 Assist ventilations until consciousness returns.

Glasgow Coma Scale

Emergency Medical Responder Protocol

Adult and Children

Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

Infant and Toddler

Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Smiles, interacts	5
	Consolable	4
	Cries to pain	3
	Moans to pain	2
Best motor response	None	1
	Normal movement	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

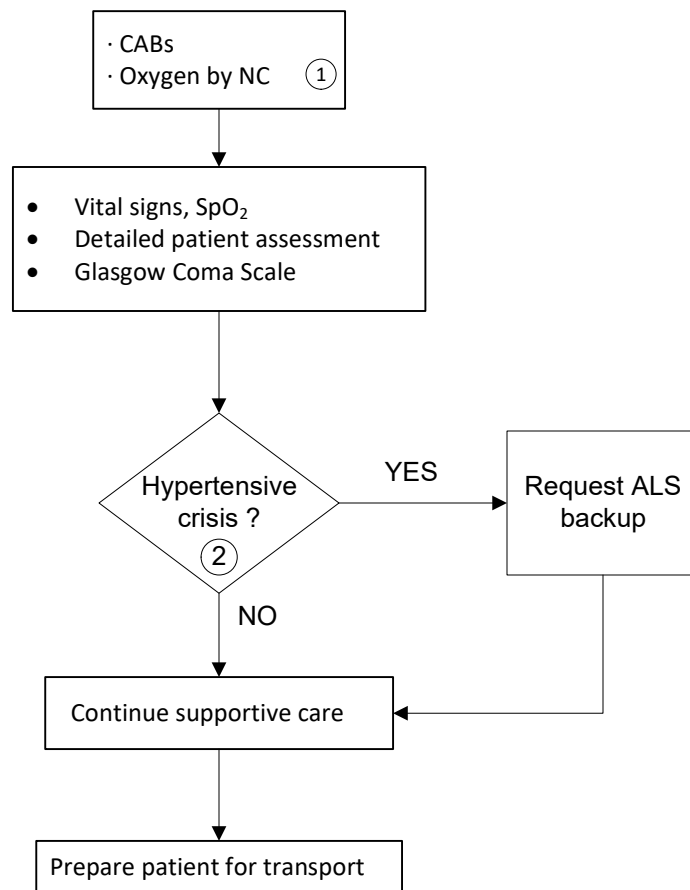
Glasgow Coma Scale (GCS)

Assess the patient in each category (eye opening, best verbal response, and best motor response) and add the scores from each category. Example: If the patient's best verbal response is a string of muffled, incomprehensible words, give a 2 for that category. The patient's Glasgow Coma Scale score will be the total of the scores for all three categories. A Glasgow Coma Scale score of 7 indicates coma.

Reassess the patient's score frequently. Record each observation and the time it was made. It is important to document initial GCS and compare to repeat GCS.

Hypertension

Emergency Medical Responder Protocol



Document:

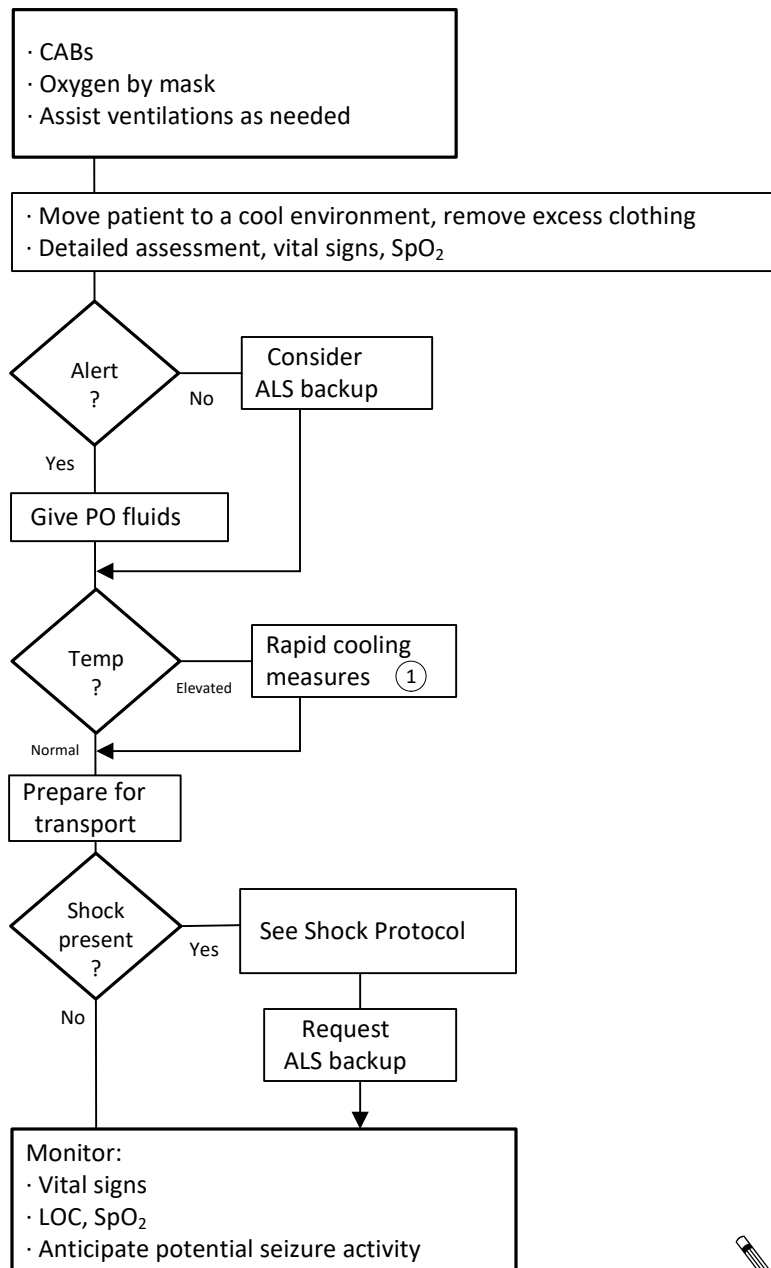
- Airway
- Vital signs, SpO₂
- Signs and symptoms
- Treatment
- Glasgow Coma Scale

1 Adjust oxygen concentration to patient needs. Consider hypoxic drive in COPD.

2 Hypertensive Crisis: defined as Systolic BP ≥ 200 mm Hg and/or Diastolic BP ≥ 130 mm Hg **and** symptoms of end-organ compromise (shortness of breath, chest pain, changes in mental status.)

Hyperthermia

Emergency Medical Responder Protocol



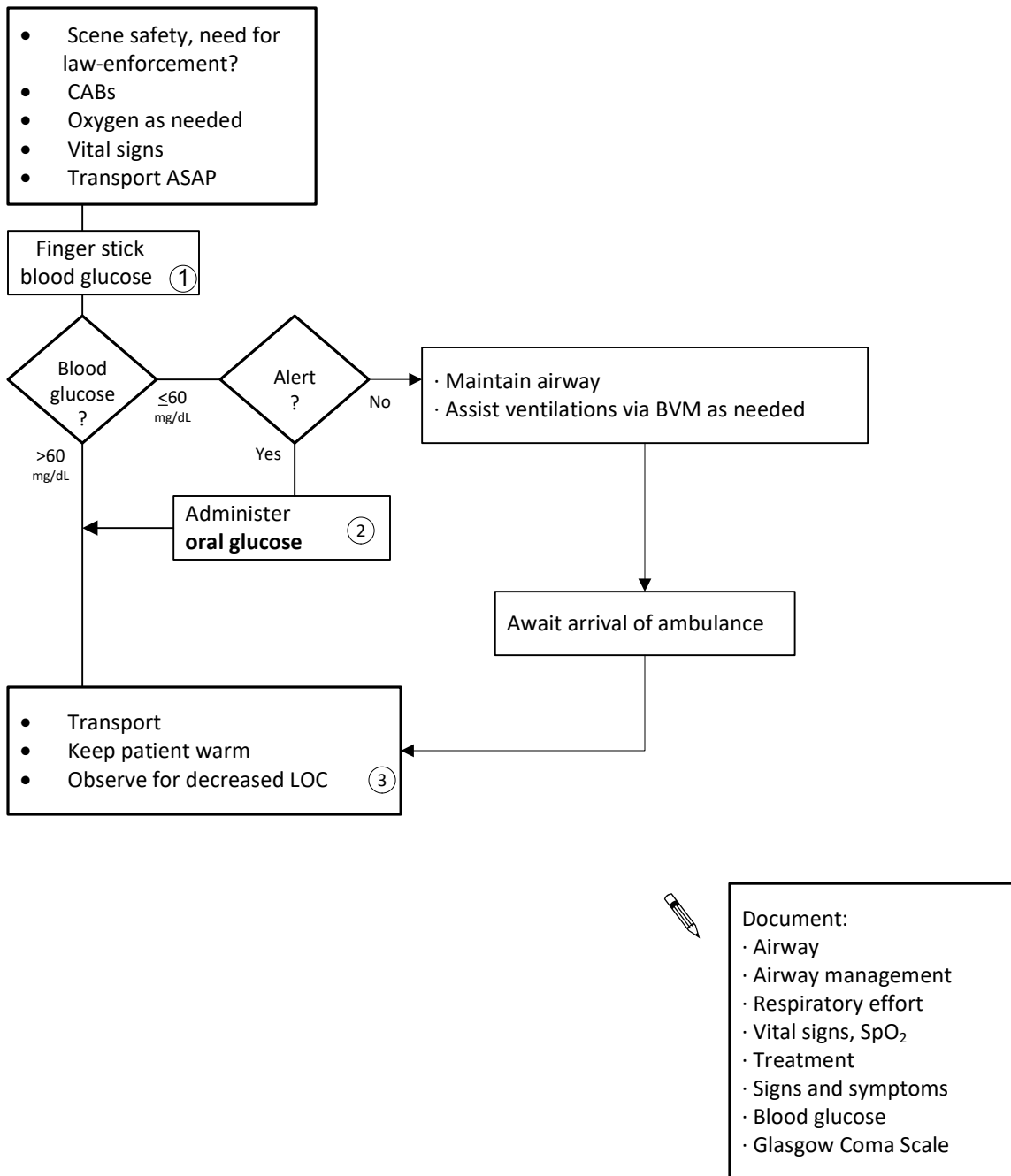
Document:

- Neurologic status
- Glasgow Coma Scale
- Ambient temperature
- Response to treatment
- Signs and symptoms
- SpO₂, vital signs

1 Spray with water mister and fan patient; apply ice packs to neck, arm pits, and groin.
If patient begins to shiver, reduce cooling measures.

Hypoglycemia

Emergency Medical Responder Protocol



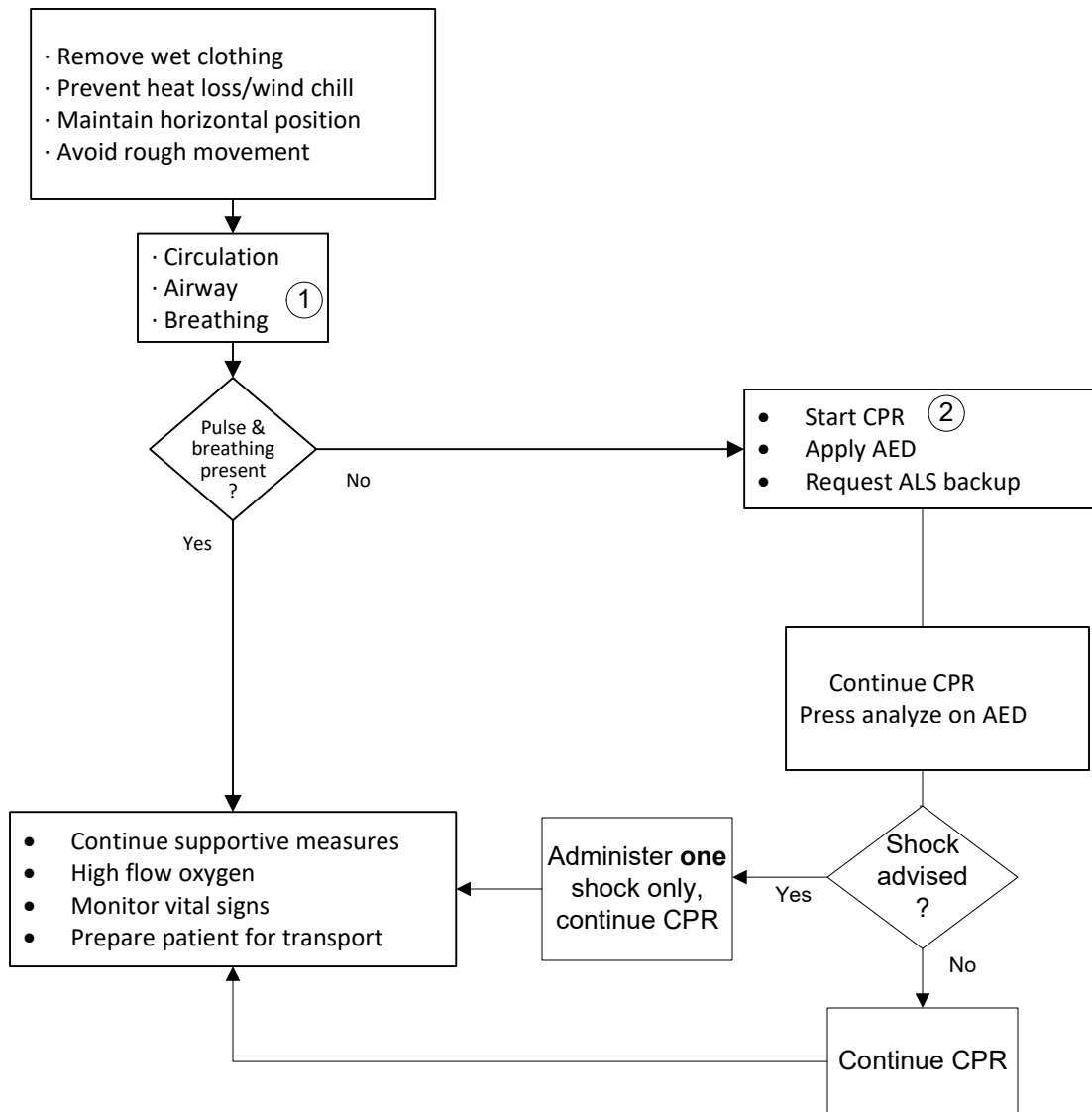
1 If initial finger stick blood glucose is borderline low, and patient remains symptomatic, recheck finger stick blood glucose in 3 to 5 minutes.

2 Full glass of sweetened juice or **glucose oral gel** 25 g PO. May repeat dose if condition does not improve or if a second finger stick blood glucose check remains ≤ 60 mg/dL. Must have an intact gag reflex. See Medication: Glucose, Oral protocol.

3 Observe for decreased LOC. Recheck finger stick blood glucose.

Hypothermia

Emergency Medical Responder Protocol



Document:

- Signs and symptoms
- Vital Signs, SpO₂
- Mechanism of injury, ambient temperature
- Treatment
- Response to treatment

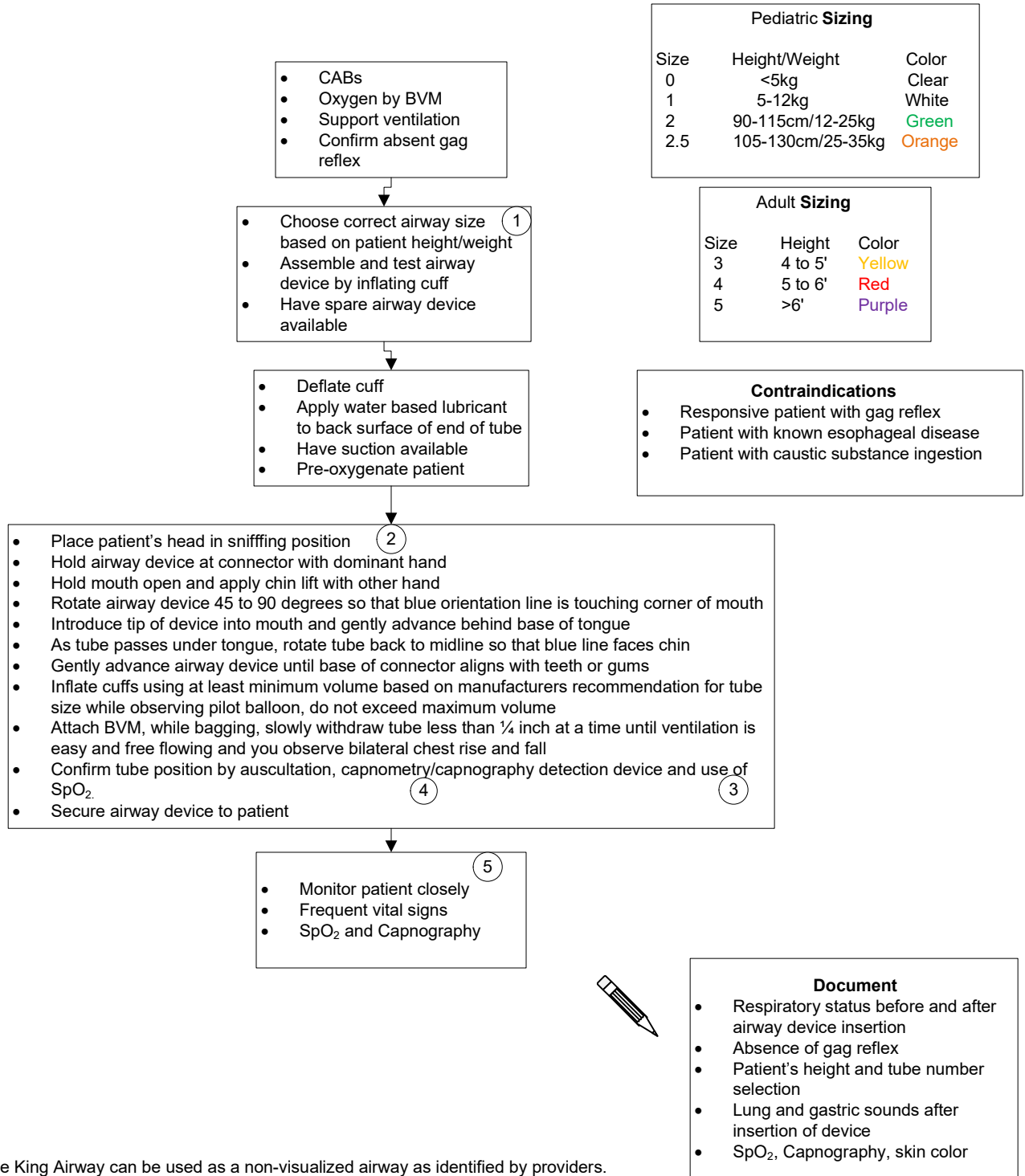
1 Bradycardia and slow respiratory rate are common in moderate to severe hypothermia.

When checking pulse and respiratory rate, **take full 60 seconds** to assess.

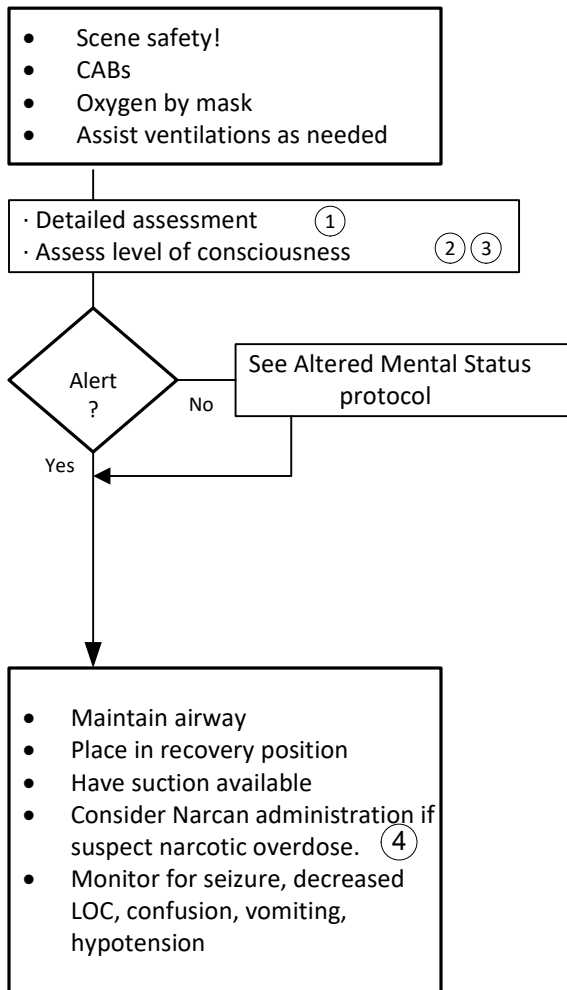
2 Consider NVA.

King LT- D/LTS-D Airway Device

Emergency Medical Responder Protocol



Overdose and Poisoning: General Management



Emergency Medical Responder Protocol

Internal contamination:

- What was ingested?
- Time of consumption?
- Amount consumed?
- Past medical history?

External contamination:

- Protect self and crew
- Remove contaminated clothing
- Flush contaminated skin and eyes with copious amount of water

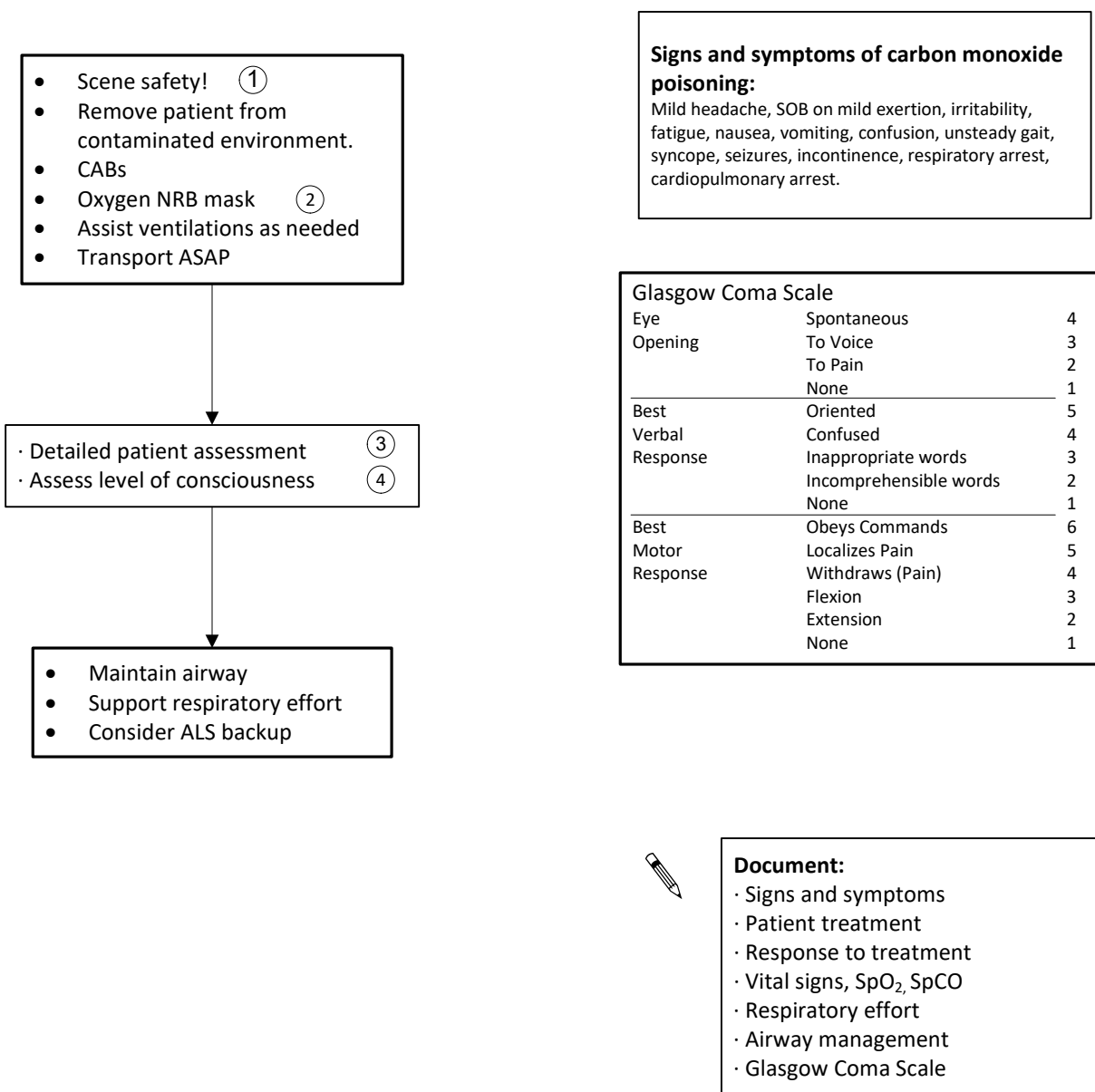
Glasgow Coma Scale

Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

Document:

- Type of ingestion, poisoning
- Signs and symptoms
- Treatment, Narcan dose(s) and times if used
- Response to treatment
- Vital signs, SpO₂

- 1 Observe the environment closely for signs of potential overdose, attempt to identify and document drug or toxins. Collect **all** medications and/or empty medication containers for transporting ambulance.
- 2 Pupillary response may indicate the type of overdose/poisoning; pinpoint pupils suggest narcotic use.
- 3 Determine and document Glasgow Coma Scale score.
- 4 Administer Narcan, if approved. See Overdose: Narcotic protocol.



- 1 Carbon monoxide is an odorless, colorless, tasteless and non-irritating gas that is extremely dangerous! All rescuers need to wear SCBA (Self Contained Breathing Apparatus) until carbon monoxide exposure risks have been mitigated. Departments are encouraged to use portable CO detectors to identify hazardous environments.
- 2 An SpO₂ monitor does **not** distinguish CO from O₂. Important: administer oxygen by NRB, **regardless** of SpO₂.
- 3 Use non-invasive CO monitor to document patient SpCO level. Normal SpCO level 0 – 2%, smoker ≤9%, toxic ≥ 20%. Although SpCO levels are helpful in the diagnosis of CO poisoning, they do **not** always correlate with the patient's clinical findings. Provide high flow oxygen to all patients suspected of CO poisoning regardless of SpCO level.
- 4 Use Glasgow Coma Scale.

Overdose: Narcotics

Emergency Medical Responder Protocol

Common Drugs:

Codeine (Tylenol #3, Fioricet)
Hydrocodone (Vicodin, Lortab, Tussionex)
Oxycodone (Percocet, Roxicet, Endocet, Oxycontin)
Fentanyl (Duragesic)
Morphine (MS Contin)
Hydromorphone (Dilaudid)
Meperidine (Demerol)
Methadone (Dolophine)
Tapentadol (Nucynta)
Tramadol (Ultracet)
Diphenoxylate (Lomotil)
Butorphanol (Stadol)
Pentazocine (Talwin)
Heroin

1

- CABs
- Oxygen by mask

- Detailed patient assessment
- Attempt to identify drug
- If narcotic overdose suspected, administer Narcan
- Bring all medications to ED

3

Signs and Symptoms of Overdose:

- Decreased LOC
- Respiratory depression
- Miosis (pupil constriction)

2

Monitor:

- Vital signs, SpO₂
- LOC
- Have suction available
- Consider ALS backup
- Transport ASAP

Document:

- Suspected overdose medication
- Patient assessment
- Vital signs, SpO₂
- Glasgow Coma Scale
- Patient management
- Patient treatment, Narcan dose(s) and times if used
- Response to treatment

1 Some of these medications are available in a transdermal (patch) formulation. If the patient is showing signs of narcotic overdose, it is acceptable to remove the patch while wearing protective gloves.

2 Demerol and Lomotil do not always produce miosis (pupil constriction.)

3 Administer IN Narcan as per Medication: Narcan protocol.

Overdose: Organophosphates ①

Emergency Medical Responder Protocol

Scene Safety! ②

- Protect self from exposure
- CABs
- Oxygen by NRB
- Assist ventilations as needed

· Detailed assessment
· Assess level of consciousness ③

· Maintain airway
· Support respiratory effort
· Prepare patient for transport

Signs and symptoms of organophosphate exposure:

S = salivation, seizure

L = lacrimation

U = urination

G = GI (vomiting, diarrhea)

B = bradycardia, bronchospasm

A = arrhythmias

M = miosis (constricted pupils), mydriasis (dilated pupils)

Mark-1 Auto-injector (or equivalent, for self and crew)

- If approved, used by emergency responders for exposure to nerve agents, **not** for treatment of patients.
- Do **not** attempt to rescue anyone in a suspected or known contaminated area. ④

Document:

- Signs and symptoms
- Treatment
- Clinical response to treatment
- Vital signs, SpO₂
- Respiratory effort
- Airway management
- Mechanism of exposure

1 Includes parathion and malathion insecticides, which are highly toxic in very small quantities. See Hazmat Protocol.

2 Scene safety/security: Avoid exposure to EMS crews. Avoid contact with contaminated clothing and individuals. Consider Hazmat team activation to decontaminate patients.

3 Calculate Glasgow Coma Scale score.

4 Nerve agents, chemically similar to organophosphate pesticides, are considered weapons of mass destruction potentially creating a mass casualty incident. Nerve agents include Tabun, Sarin, Soman, GF, and VX. The Mark-1 Auto-injector kit contains atropine and pralidoxime which counteract the effects of the nerve agent. Refer to Mark-1 Auto-injector package insert for administration procedure.

Oxygen Administration and Airway Adjuncts

Emergency Medical Responder Protocol

Oxygen Delivery:

Nasal Cannula	1 to 6 liters/minute
Simple Mask	8 to 12 liters/minute
Nonrebreather Mask	10 to 15 liters/minute
Bag Valve Mask	10 to 15 liters/minute ^①

Provide oxygen using method that will maintain a SpO₂ of 95% to 100%. Patients with COPD often depend on hypoxic drive to breath. In these cases, expect and accept SpO₂ readings of 85% to 90%. Lower concentrations of oxygen may be indicated, however, never deprive a COPD patient in respiratory distress of oxygen. Patients with obvious respiratory distress should immediately be placed on oxygen by NRB, and if necessary, ventilations should be assisted by BVM.

Calculating remaining useable oxygen in D and E oxygen cylinders:

$$\text{Safe duration of oxygen flow in minutes} = \frac{(\text{Gauge pressure in psi} - 200) \times \text{cylinder constant}}{10}$$

Cylinder constant for D cylinder = 0.16

Cylinder constant for E cylinder = 0.28

Oropharyngeal Airway:

- For use in unconscious patients with **no** gag reflex.
- Select proper size by measuring from center of patient's mouth to angle of mandible (jaw).

Nasopharyngeal Airway:

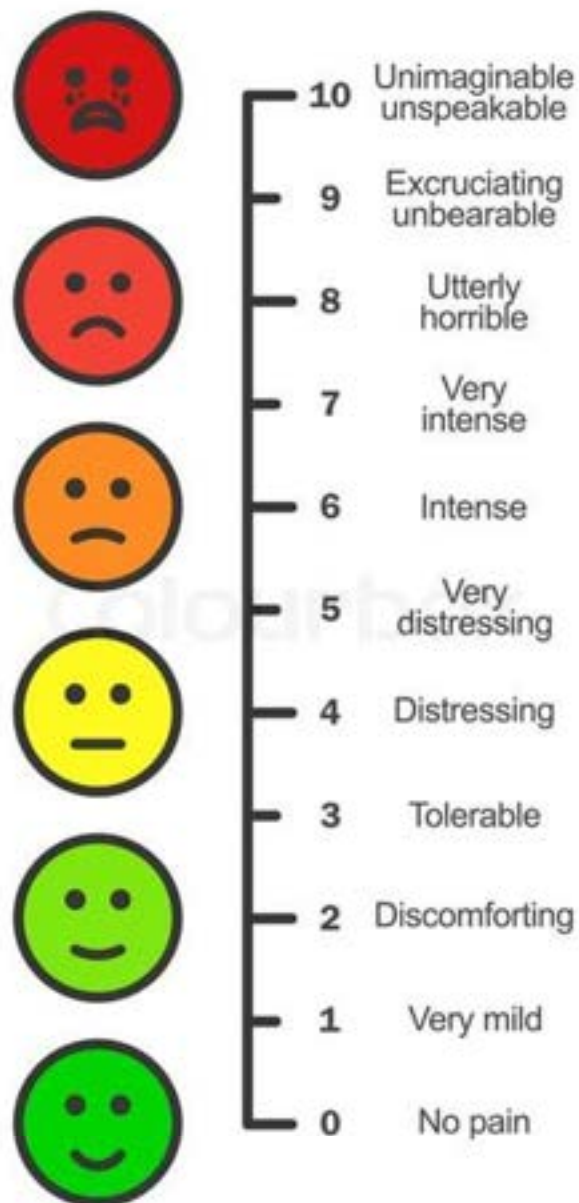
- For use in semiconscious patients with a gag reflex.
- Select proper size by measuring from tip of patient's nose to earlobe.
- Select proper diameter by matching tube diameter with patient's little finger.
- Lubricate with water based lubricant.
- Use **contraindicated** in patient's with facial fractures or nose bleeds.
- Use with caution in patient's on Coumadin (Warfarin.)

¹ Oxygen flow rate should be adjusted so that the NRB and BVM reservoir bag remains inflated during patient inhalation and exhalation.

Pain Rating Scale

Emergency Medical Responder Protocol

The pain rating scale provides both a visual and verbal numerical method of enabling the patient to convey their severity of pain. The number should be reported to the responding ambulance and documented on the patient record:



PULSE OXIMETRY

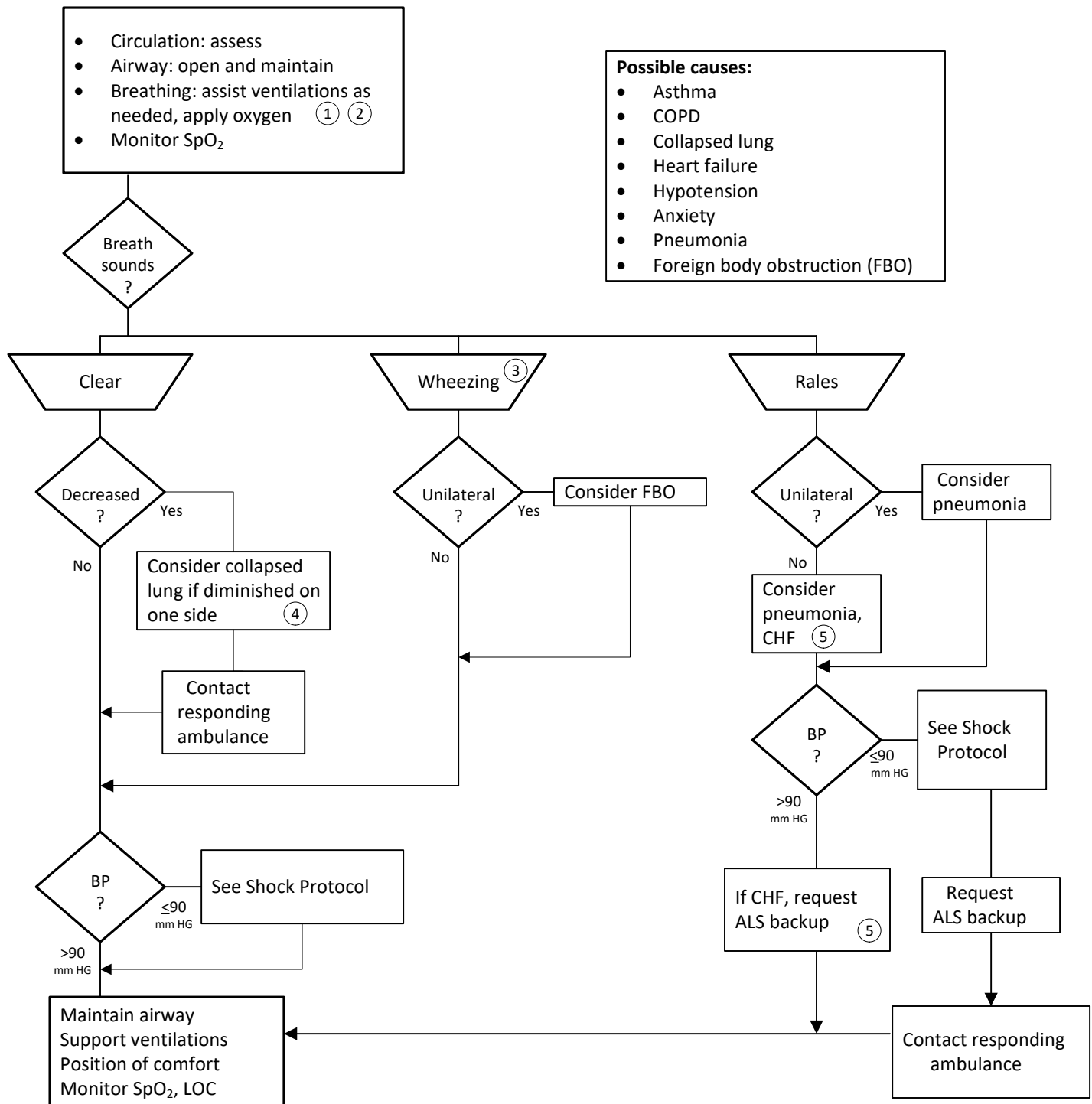
Pulse oximetry represents a numerical value of the patients blood oxygenation and is a valuable tool for detecting hypoxemia. Pulse oximetry does **not** provide any information about the patients ventilatory status. If there is inadequate tissue perfusion due to hypotension, hypothermia, or vasoconstriction, the pulse oximetry value will be unreliable. The normal range for pulse oximetry in healthy patients is 94 to 100%. COPD patients typically have lower SPO₂ baseline values. During treatment of COPD exacerbations, expect and accept SPO₂ values of 85% to 90%. Carbon monoxide poisoning will give an inaccurate overestimation of the actual oxygen saturation.

Pulse oximetry should be monitored in patients with the following presentations:

- respiratory distress
- altered mental status
- patients receiving supplemental oxygen

Respiratory Distress

Emergency Medical Responder Protocol



1 COPD patients depend on hypoxic drive to breathe. In these cases, expect and accept SpO₂ readings between 85% and 90%.

2 Request ALS backup if: ventilations need to be assisted, decreased LOC, SpO₂ <90% despite therapy; respiratory rate <10 or >29; patient responds with single-word phrases and shows obvious signs of fatigue; use of accessory muscles of respiration; or on your discretion.

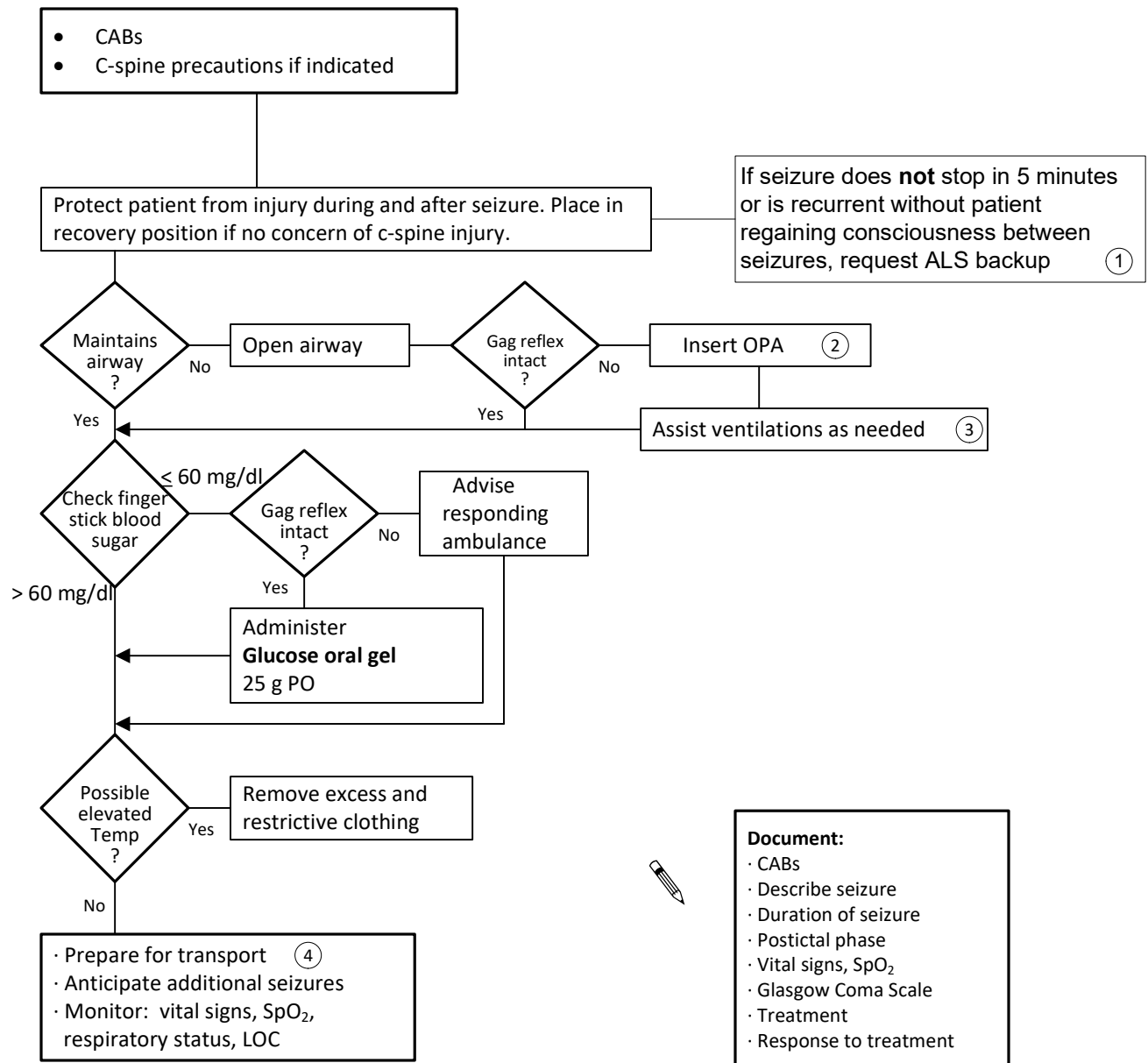
3 Wheezing may be caused by CHF, asthma, COPD, allergic reaction, or aspiration.

4 Consider collapsed lung with potential for tension pneumothorax. Request ALS backup as needed.

5 Signs and symptoms often seen with congestive heart failure are shortness of breath with shallow, rapid respiratory rate, low SpO₂, ankle swelling, neck vein distension, and rapid heart rate. Patients are often agitated and prefer to sit upright.

Seizure

Emergency Medical Responder Protocol

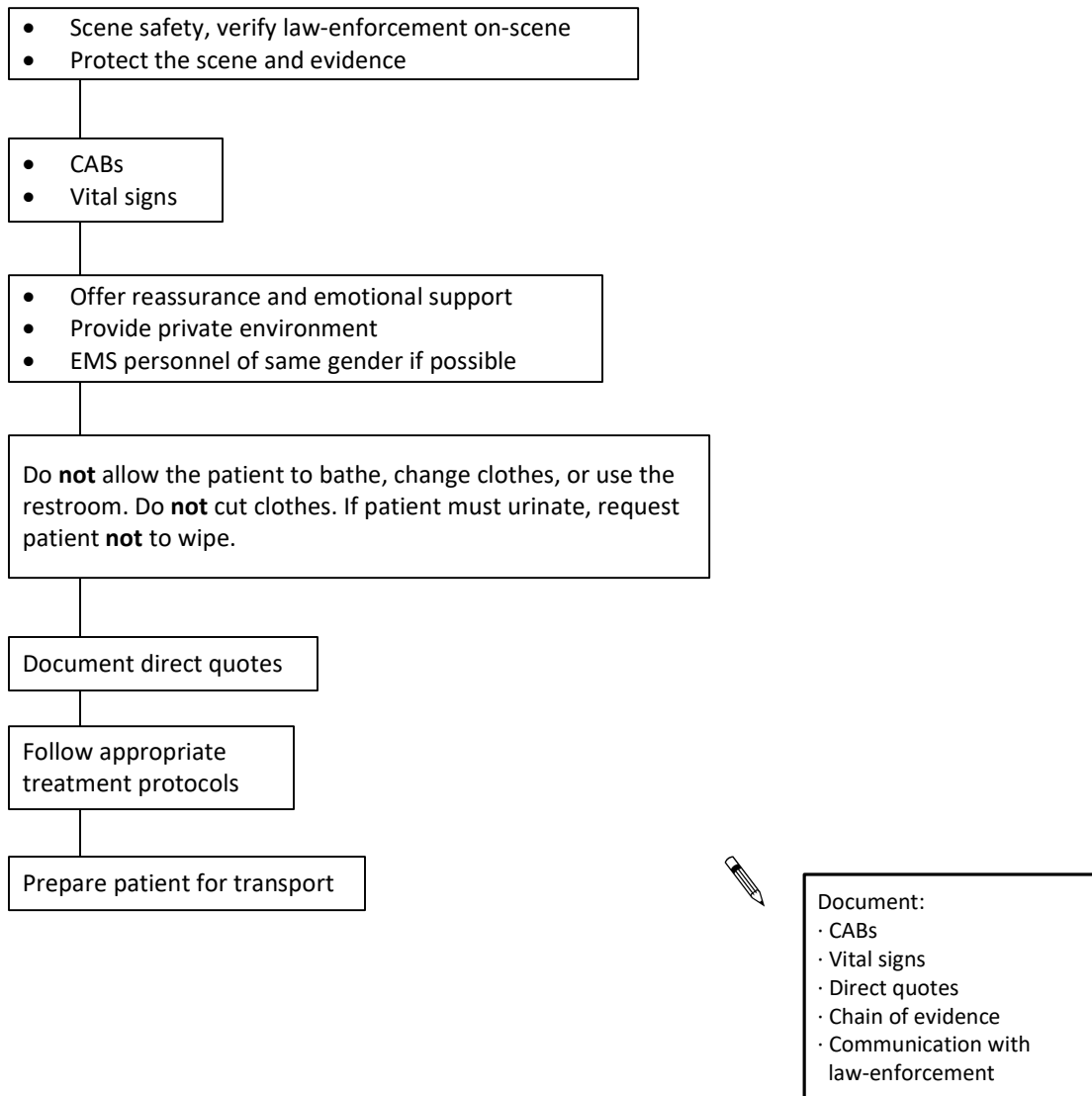


1 Prolonged seizures, or recurrent seizures without the patient regaining consciousness between seizures is a neurologic emergency requiring advanced life support measures.

2 Do **not** attempt to insert an OPA (oropharyngeal airway) during a seizure. Note: Most postictal patients do **not** need an OPA. If an OPA is used, be prepared to remove it as consciousness returns. Consider a nasopharyngeal (trumpet) airway.

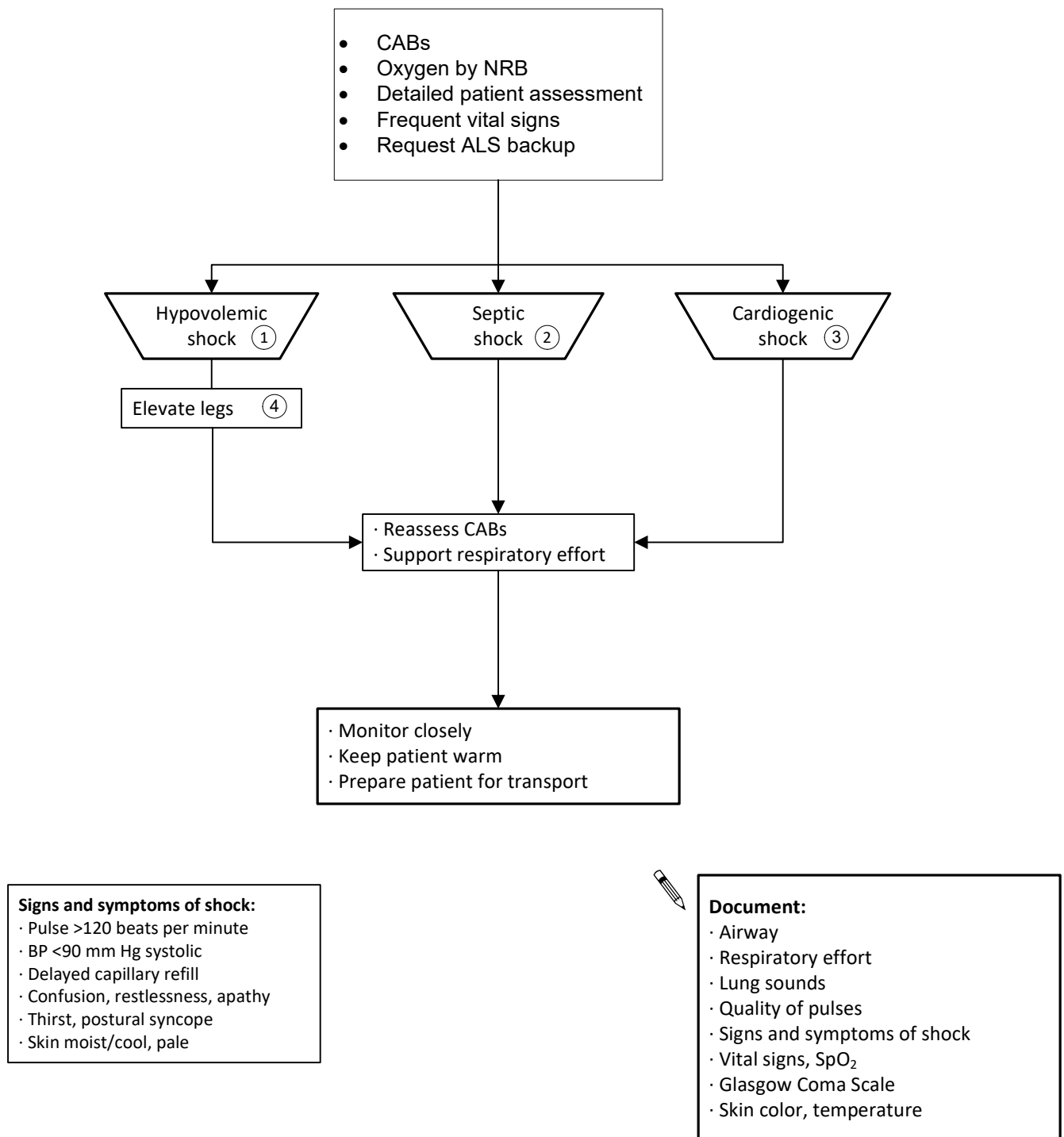
3 Ventilatory assistance may be required, but most postictal patients do **not** need assistance. Consider ALS backup.

4 Provide a quiet, calm environment.



Shock

Emergency Medical Responder Protocol



1 See trauma protocols if appropriate. Control external bleeding.

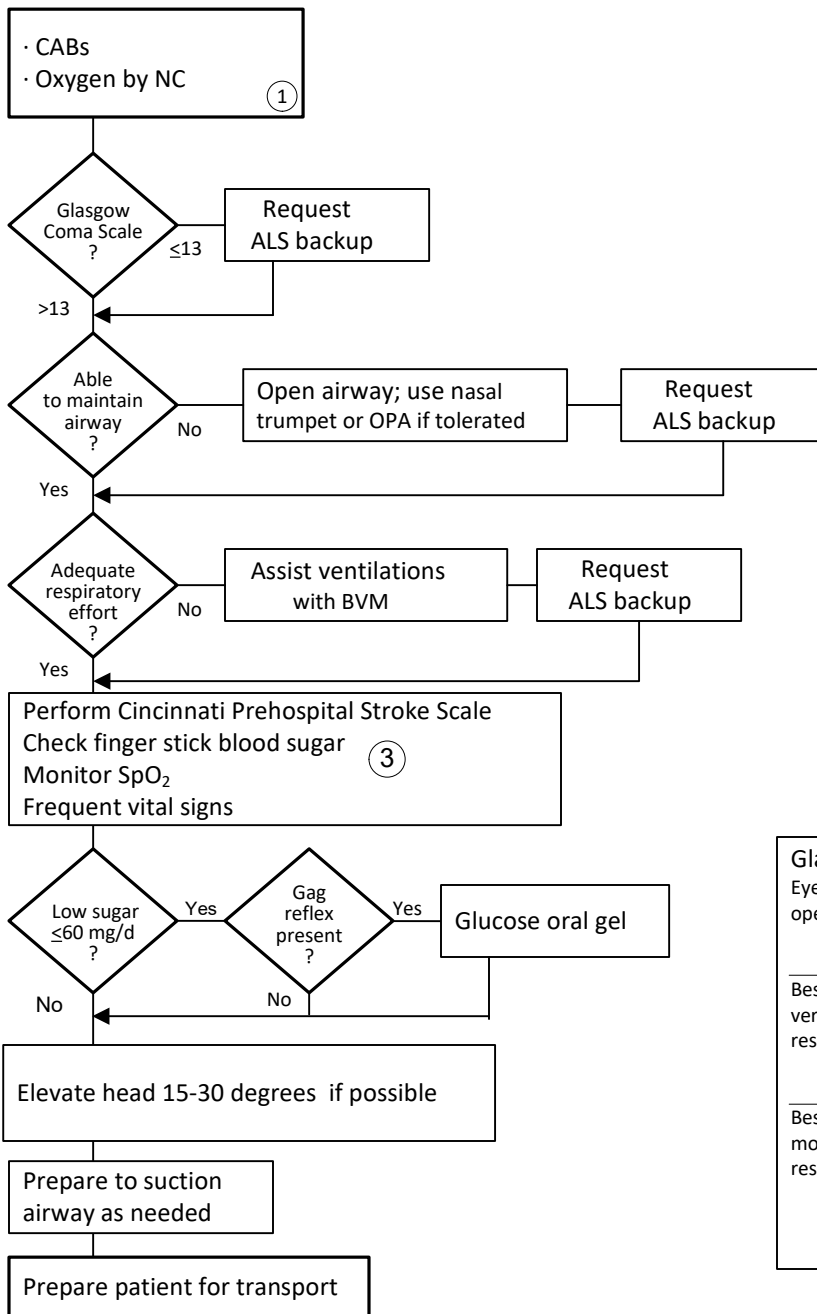
2 Septic shock is a medical emergency; patient may or may not have a fever.

3 Patient complains of chest pain and shortness of breath.

4 If history of trauma and concerns of spinal injury, do **not** elevate legs. See Trauma: Spinal Cord protocol.

Stroke

Emergency Medical Responder Protocol



Document:

- CABs
- Detailed assessment, document time patient last seen normal (2)
- Vital signs, SpO₂
- Glasgow Coma Scale
- Motor function
- Neurologic deficits
- Treatment
- Response to treatment

Glasgow Coma Scale

Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

The Cincinnati Prehospital Stroke Scale

Facial droop (have patient show teeth or smile):

- Normal—both sides of face move equally
- Abnormal—one side does not move as well as the other

Arm drift (patient closes eyes and holds arms out):

- Normal—both arms move the same or both arms do not move at all
- Abnormal—one arm does not move or one arm drifts down

Speech (have the patient say "You can't teach old dogs new tricks"):

- Normal—patient uses correct words with no slurring
- Abnormal—patient slurs words, uses inappropriate words, or is unable to speak

If any 1 of these 3 signs are abnormal, probability of stroke is 72%.

1 Time in the field must be minimized, help expedite transport.

2 It is important for ED staff to know when the stroke-like symptoms began.

3 See Hypoglycemia protocol.

Suction

Emergency Medical Responder Protocol

Indications:

Obstruction of airway due to secretions, blood or other substances in a patient who cannot maintain or keep the airway clear.

Procedure:

1. Ensure suction device is in proper working order
2. Pre-oxygenate the patient if possible
3. Explain the procedure to the patient if alert
4. Examine the oropharynx and remove potential foreign bodies or materials which may occlude the airway if dislodged by suction device ie: dentures.
5. Use the suction device to remove any secretions, blood or any other substance.
6. Reapply oxygen administration if necessary
7. Repeat as necessary

Suction with Advanced Airway in Place

Indications:

Obstruction of the airway in a patient currently being assisted by an airway adjunct.

Procedure:

1. Ensure suction device is in proper working order.
2. Pre-oxygenate the patient.
3. Measure the desired depth the suction catheter will be advanced through the airway.
4. Remove BVM from the airway
5. Insert suction catheter through the airway device. Note: catheter can be difficult to pass through the King airway. Attempt to turn the tip of the suction catheter to successfully pass through the airway. Do not forcefully push the suction catheter. At times you may not be able to pass the suction catheter. You may consider the depth the airway is placed, a king airway placed too deep may make suctioning more difficult.
6. Once the desired depth has been reached, occlude the thumb port and remove the suction slowly (no longer than 10 seconds)
7. Reattach BVM and ventilate patient
8. Repeat as necessary

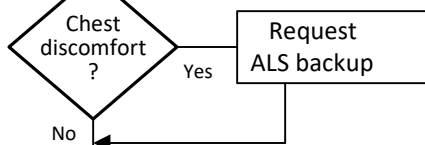
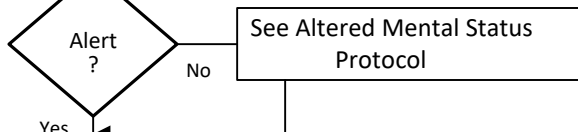
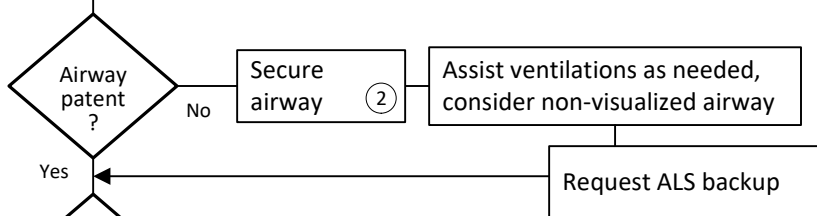
When suctioning through an advanced airway, attempt to keep the suction catheter clean or sterile if possible.



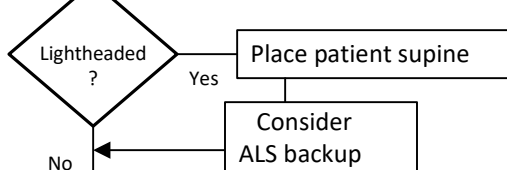
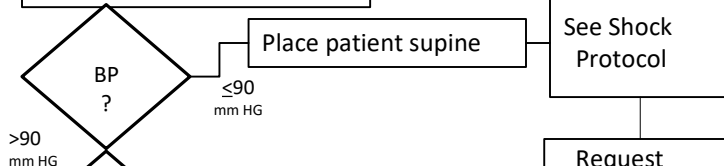
Suction is measured by bringing the suction from the corner of the nose around the ear to the suprasternal notch.

- CABs ①
- C-spine precautions as needed ②
- Oxygen as needed to maintain SpO₂ > 93% ③

- Medications
- Vasovagal response
- Hypovolemia
- Hypoglycemia
- Heart rate or rhythm
- Fatigue
- Heart disease
- Heat stroke



- Detailed assessment ④
- Obtain history
- Obtain and transmit 12 lead if capable.



- Supportive measures
- Keep patient warm
- Monitor LOC
- If approved, check FBS and treat if necessary.

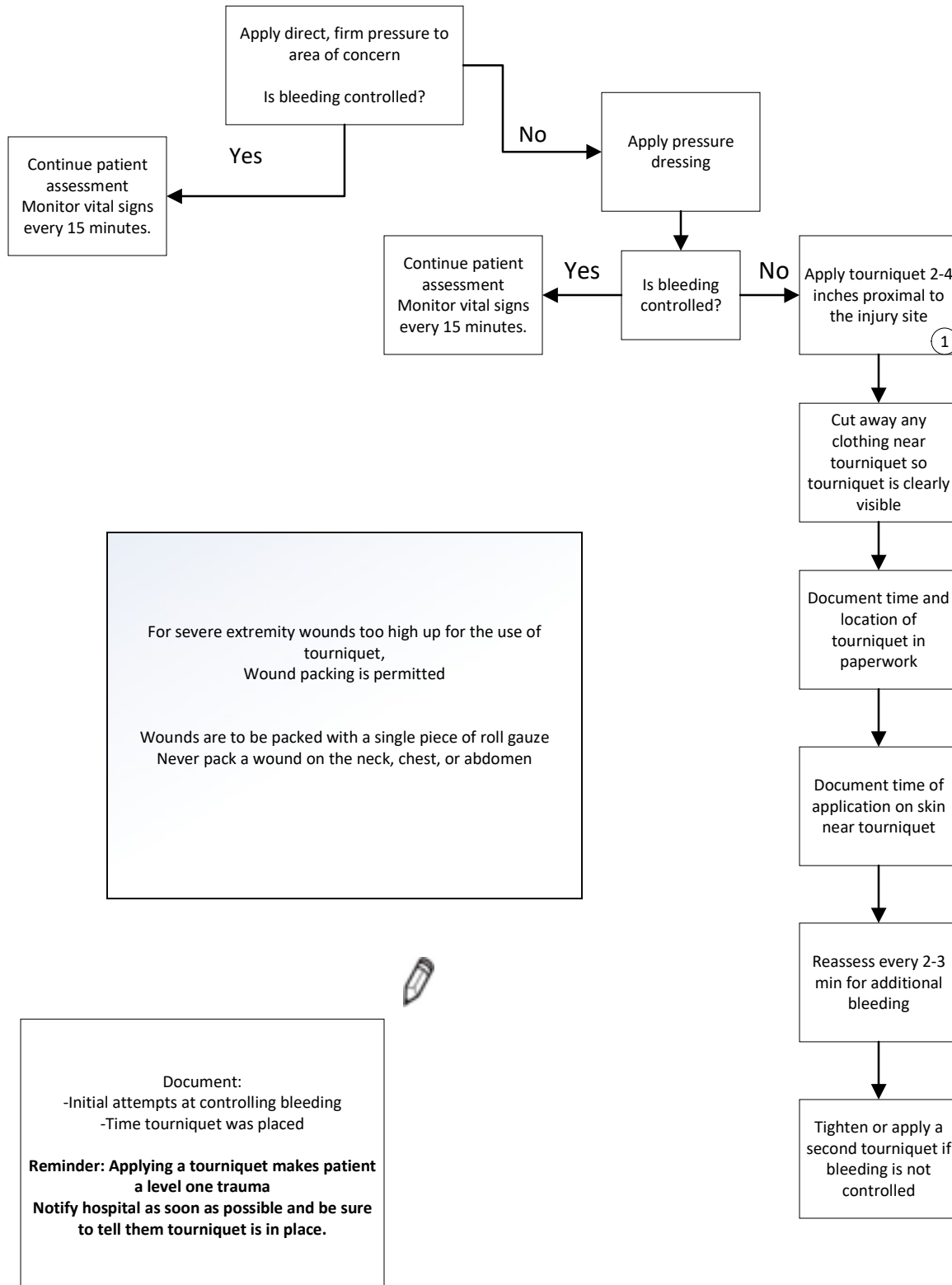
Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

- Medications
- Onset and duration of loss of consciousness
- Activity prior to loss of consciousness
- Recent or chronic illness
- Trauma
- Seizure activity
- Glasgow Coma Scale
- Vital signs, SpO₂

- 1 Have AED available.
- 2 Establish spinal immobilization if associated with fall or trauma.
- 3 Higher concentration of oxygen may be indicated. Consider hypoxic drive in COPD.
- 4 Monitor SpO₂, vital signs, and Glasgow Coma Scale score, obtain and transmit 12 lead ECG if capable.

Tourniquet/Hemorrhage Control

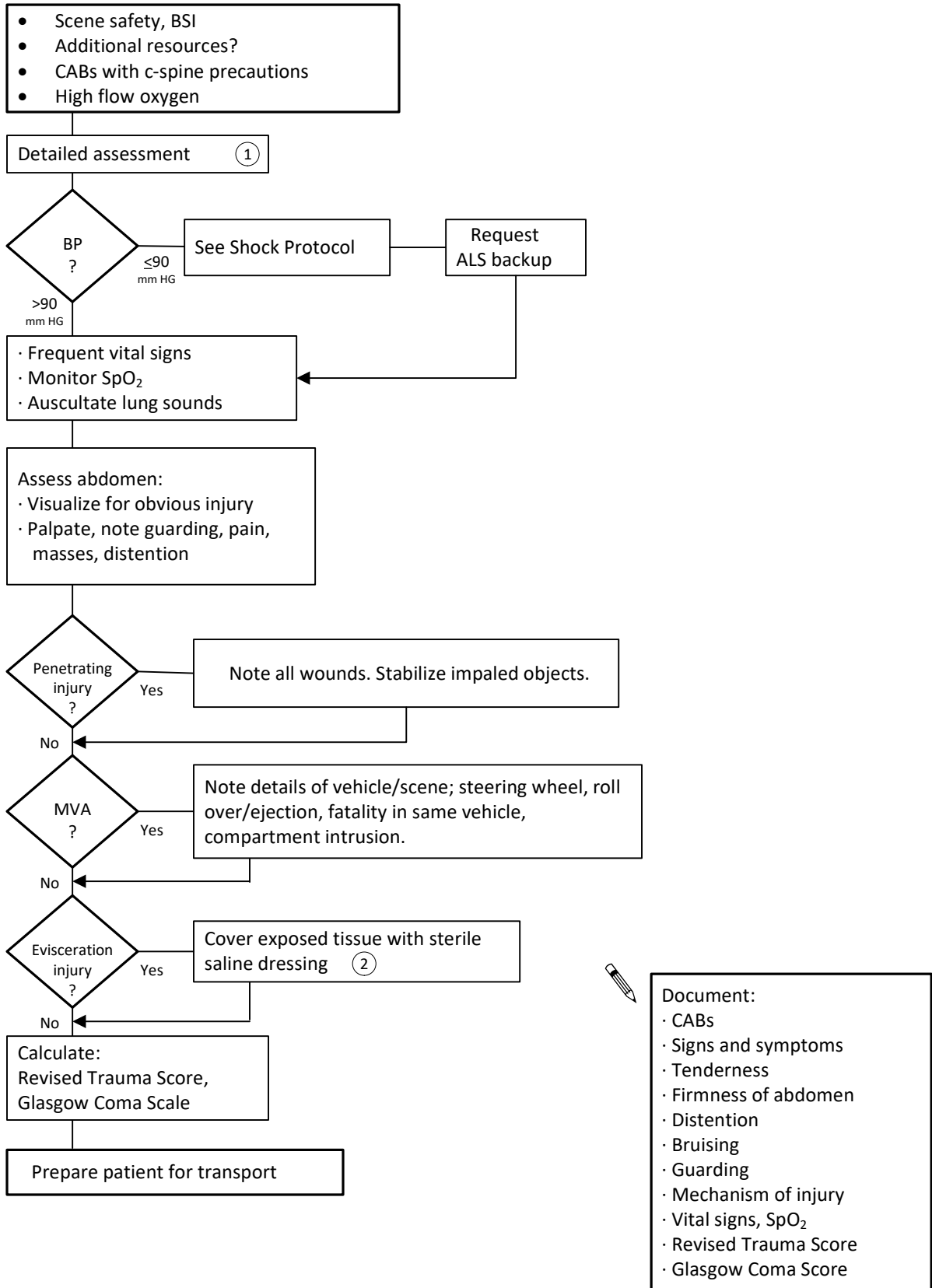
Emergency Medical Responder Protocol



1 Never apply tourniquet across a joint

Response to trauma incidents present the EMR with a set of unique challenges. Scene safety and use of appropriate BSI should be addressed before contact with the patient.

- Consider if adequate resources are available including additional EMS, ALS, Police, Fire suppression, Hazmat, water rescue.
- Trauma protocols are divided in to body regions. Keep in mind that a patient may have multiple body areas injured.
- Make appropriate use of c-spine immobilization with back board Back Raft or KEDS device.
- Splint all significant extremity injuries.
- AED application in a traumatic PNB is a lower priority as most of these patients will not have a heart rhythm that would benefit from defibrillation. Begin CPR and address life threatening injuries such as uncontrolled hemorrhage. When life threatening injuries have been treated and adequate EMS resources are available, apply the AED.

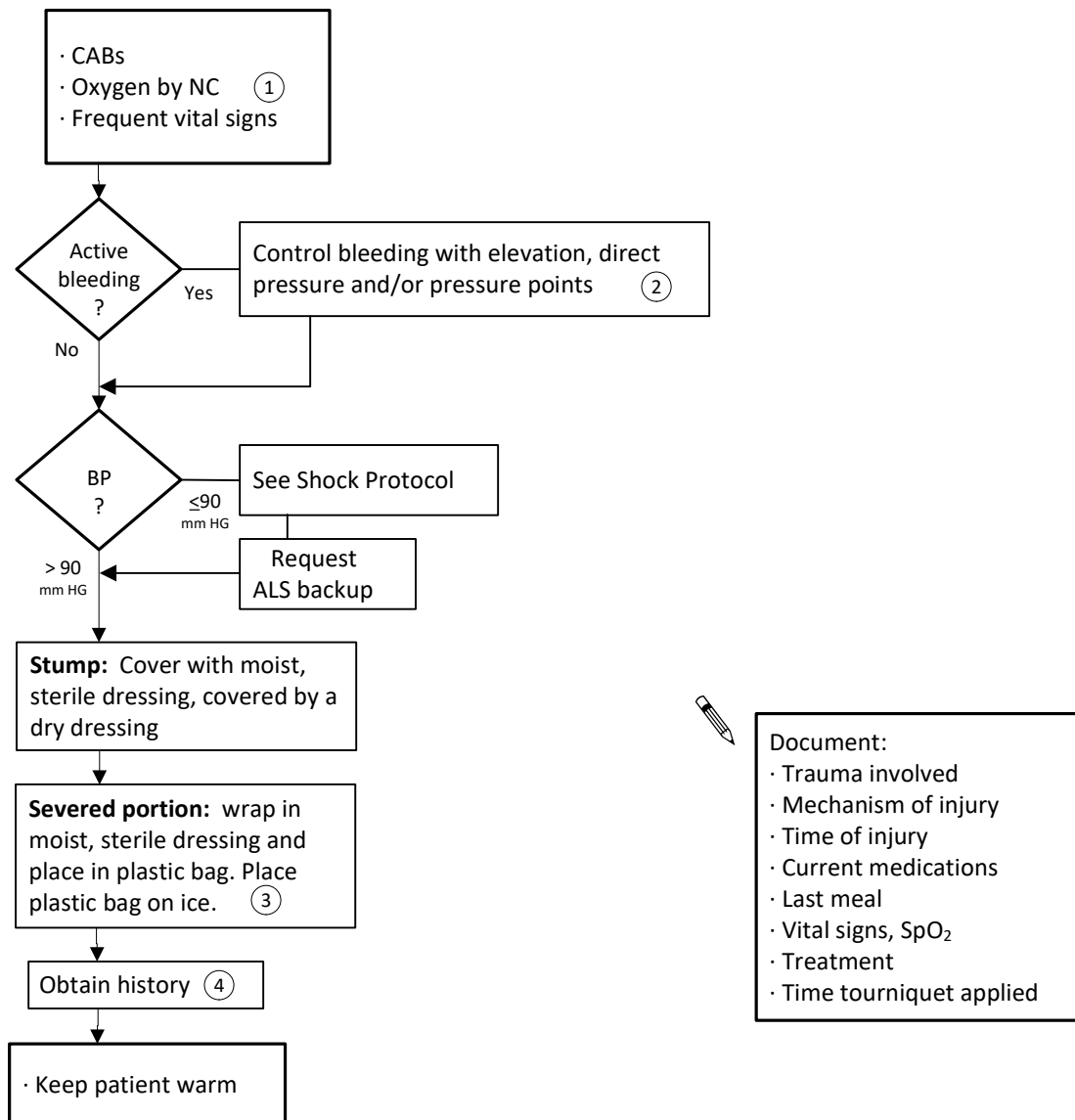


1 Assessment: Associate injury site with underlying anatomy.

2 Do **not** reduce or attempt to reinsert abdominal contents. Do **not** remove impaled objects, stabilize in place.

Trauma: Amputation

Emergency Medical Responder Protocol



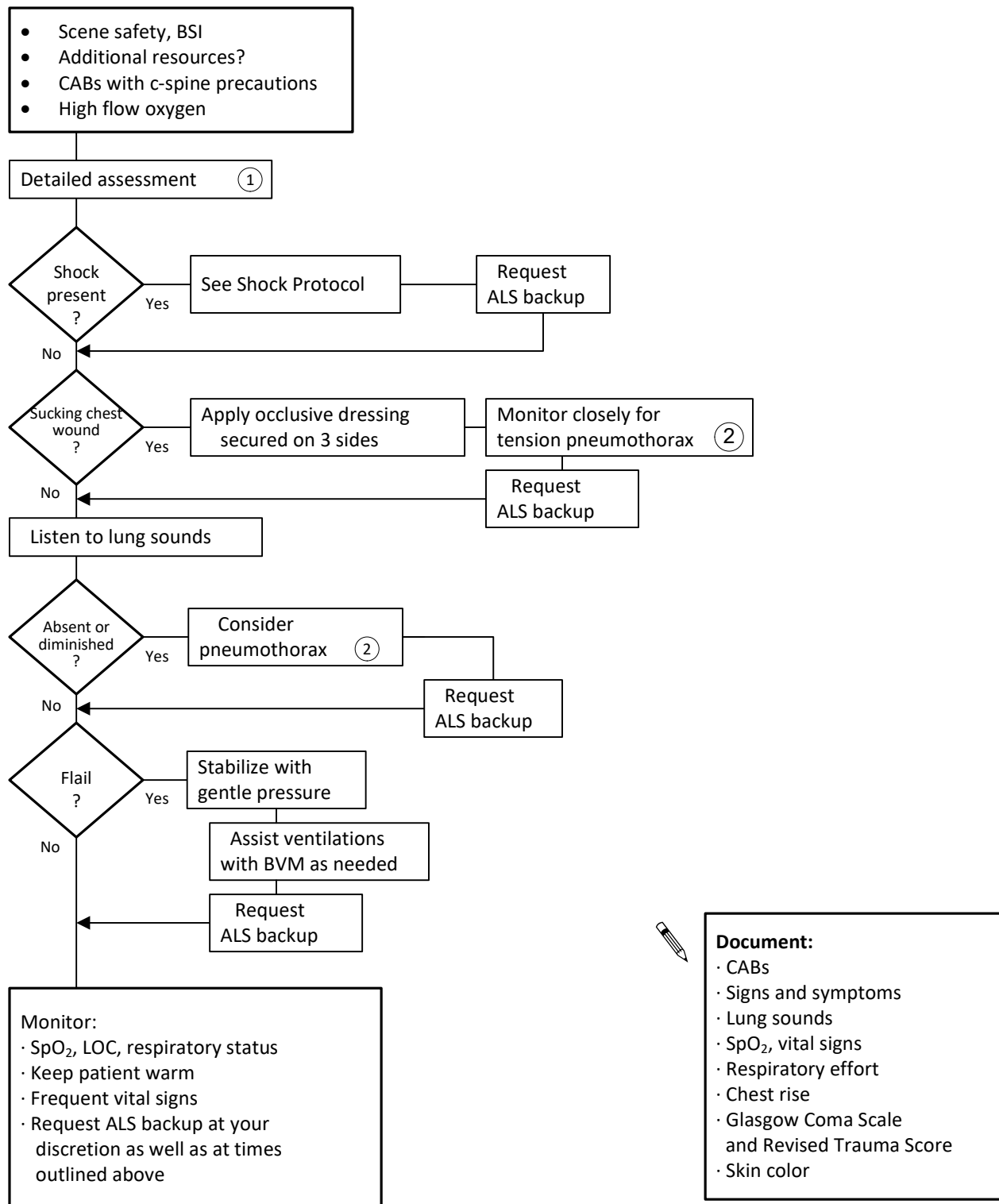
1 Administer higher concentrations if needed.

2 Use pressure point proximal to site if direct pressure does not control the bleeding. The application of a tourniquet is appropriate in life-threatening hemorrhage **not** controlled by other measures.

3 Keep severed part moist. Do not allow to soak in a solution or freeze.

4 History: Note time of amputation, mechanism involved, current medications, bleeding disorders.

Exam: Note anatomical location of amputation. Estimate total blood loss.

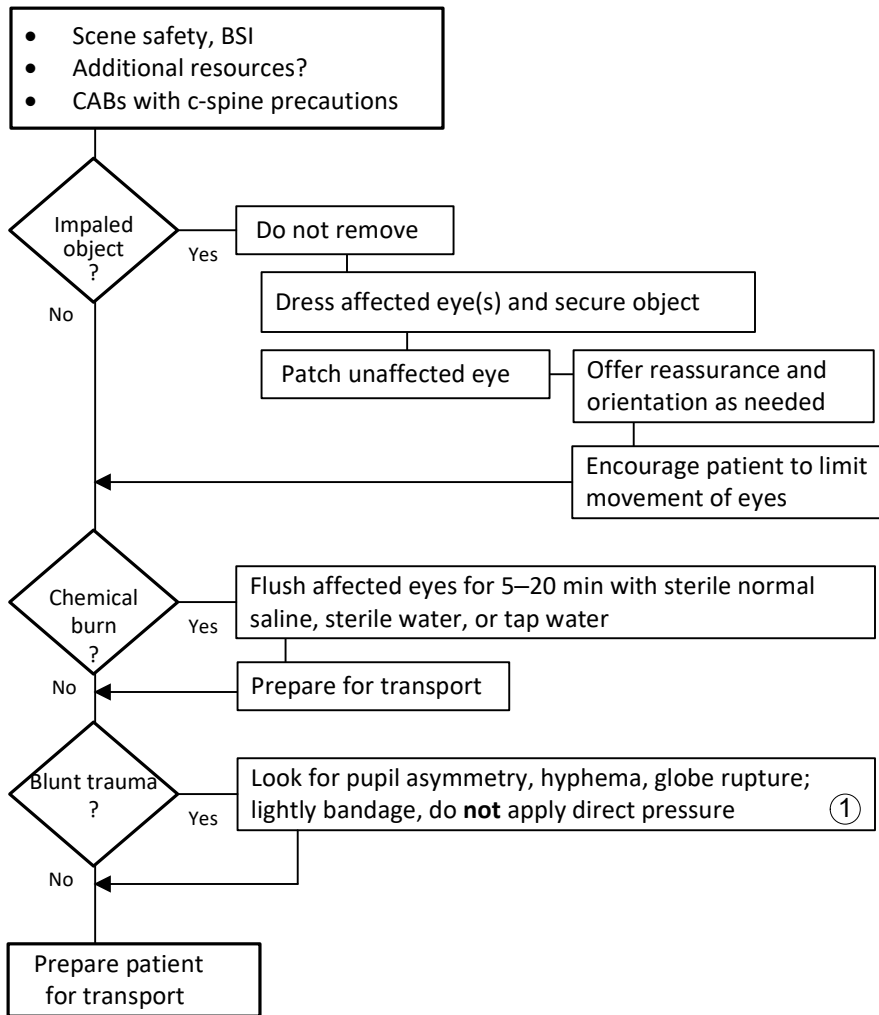


1 Do **not** remove impaled objects, stabilize in place. Defer calculation of Glasgow Coma Scale and Revised Trauma Score until patient stabilized.

2 Monitor closely for tension pneumothorax which causes tracheal deviation, increasing respiratory distress, and hypotension.

Trauma: Eye

Emergency Medical Responder Protocol



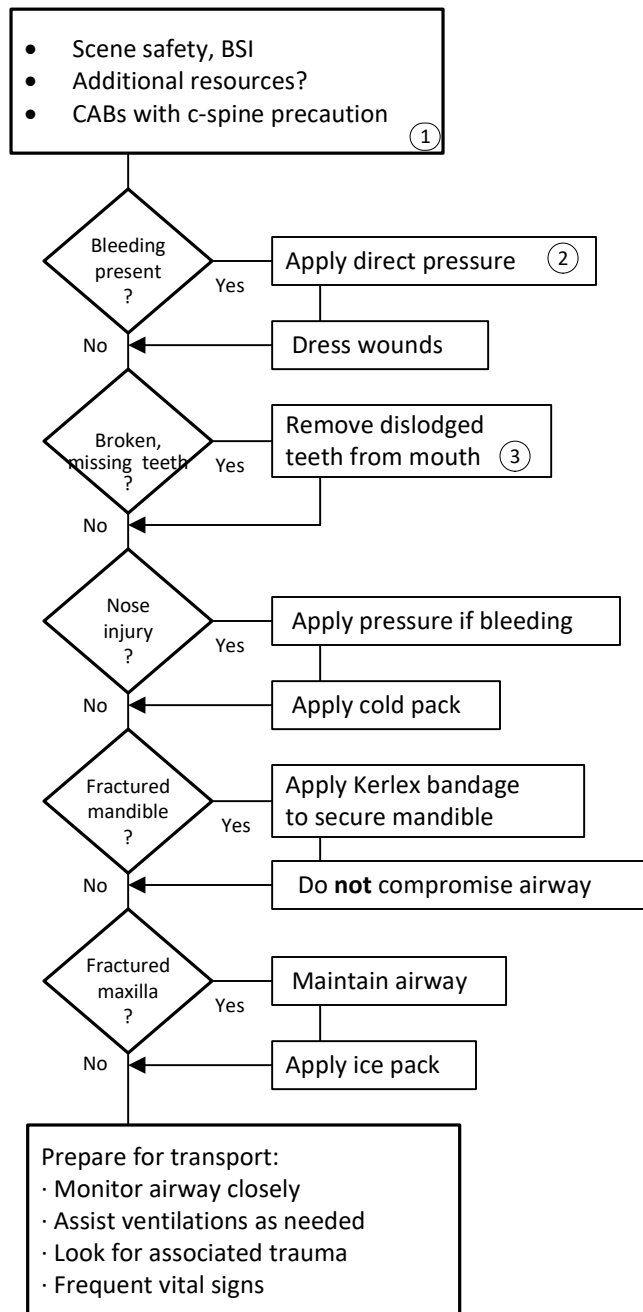
Document:

- Signs and symptoms
- Appearance of eye
- Quality, nature of pain
- Pupil: size, reaction to light
- Treatment
- Glasgow Coma Scale
- Revised Trauma Score
- Mechanism of injury

1 Hyphema is a collection of blood in the anterior chamber (clear portion) of the eye which often layers out.

Trauma: Facial

Emergency Medical Responder Protocol



Document:

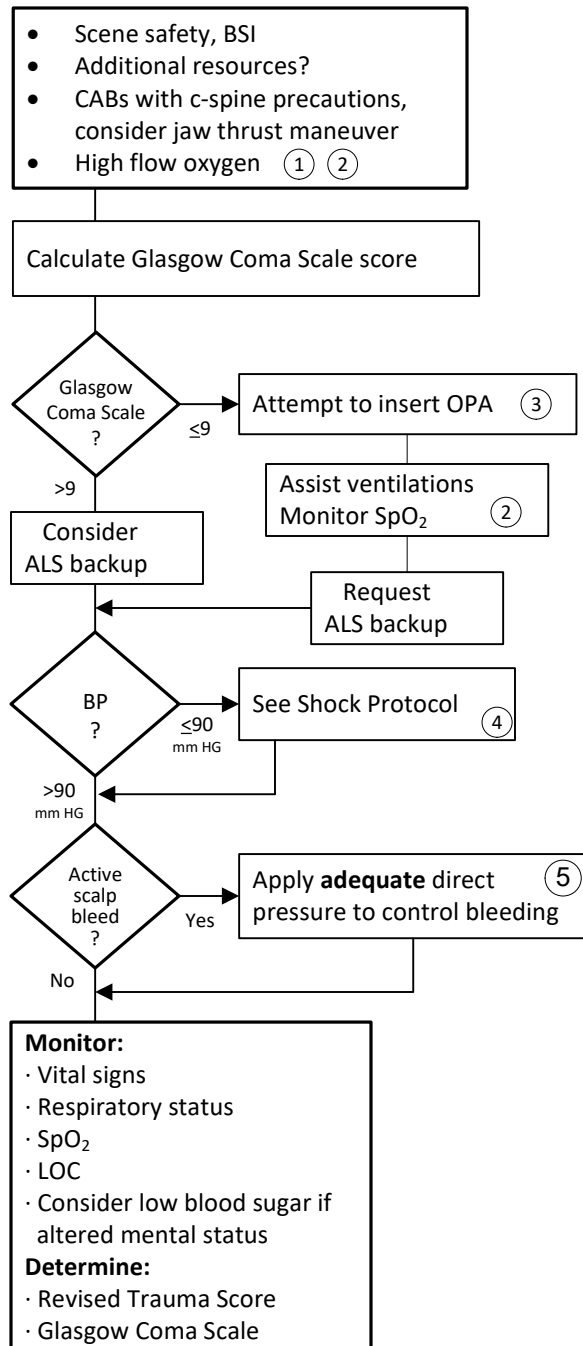
- Signs and Symptoms
- Airway
- Respiratory effort
- Lung sounds
- Vital signs, SpO₂
- Pupil: size, reaction to light
- Trachea, midline?
- Fluid from ears?
- Fontanel in infant
- Treatment
- Glasgow Coma Scale
- Revised Trauma Score
- Mechanism of injury

1 If patient has airway problems, or is in respiratory distress, request ALS backup ASAP. If impaled object is causing airway problems, it is acceptable to remove the object, otherwise, objects should be stabilized in place.

2 Use pressure point if needed.

3 If you find an intact missing tooth, pick it up by its crown (protect root) and place in moist sterile dressing for transport with patient to the hospital.

Trauma: Head



Emergency Medical Responder Protocol

Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

Document:

- CABs
- Signs and symptoms
- Glasgow Coma Scale
- Revised Trauma Score
- SpO₂, vital signs
- Motor/sensation
- Respiratory effort
- Skin color
- Mechanism of injury
- Onset and duration of loss of consciousness

1 Oxygen 100% per nonrebreathing mask or bag-valve-mask as needed.

2 Aggressive ventilatory support may be needed. If the patient's ventilations are not effective, secure patient's airway and assist ventilations.

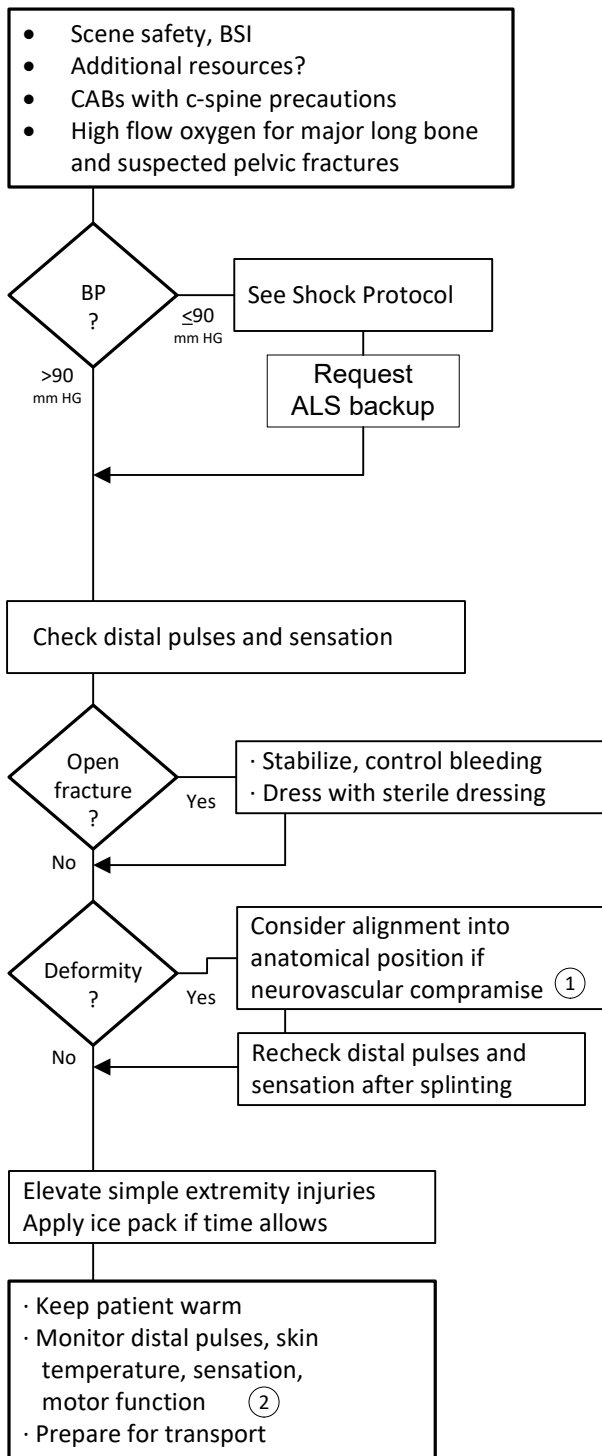
3 Insert oropharyngeal airway only if gag reflex is absent.

4 Isolated head injuries rarely cause shock. If shock is present, look for another cause. Note: Head injury may cause shock in infants.

5 Scalp lacerations can cause significant blood loss if bleeding is not controlled. Do **not** remove impaled objects, stabilize in place.

Trauma: Orthopedic

Emergency Medical Responder Protocol



Document:

- Signs and symptoms
- Distal circulation, sensation, motor function
- Treatment
- Degree of deformity
- Skin color
- SpO₂
- Mechanism of injury

Pelvic sling for mechanically unstable pelvic fracture:

- Locate the greater trochanter (lateral aspect of the femoral head)
- Place a bed sheet beneath location
- Bring the ends of the sheet together (gently squeezing the anterior aspect of the pelvis together)
- Tie the sheet together

1 Closed, angulated fractures **without** a distal pulse can be attempted to place in an anatomical position, unless the fracture involves a joint, which should be splinted in the position found. Consider traction splint for femur fracture. See Trauma: Traction Splinting protocol. **Never attempt to reduce fractures/dislocations.**

Contact responding ambulance for management guidance.

2 SpO₂ monitoring may help you confirm circulation in an extremity.

Trauma Score: Revised

Emergency Medical Responder Protocol

Revised Trauma Score		
Respiratory rate	10–29	= 4
	>29	= 3
	6–9	= 2
	1–5	= 1
	None	= 0
.....		
Systolic BP mm Hg	>89	= 4
	76–89	= 3
	50–75	= 2
	1–49	= 1
	No pulse= 0	
.....		
Glasgow Coma Scale	13–15	= 4
	9–12	= 3
	6–8	= 2
	4–5	= 1
	3	= 0
Revised Trauma Score		

To calculate the Revised Trauma Score: Determine the patient's respiratory rate.

If the respiratory rate is greater than 29 breaths per minute, the patient receives a score of 3.

Calculate the patient's systolic BP. If the patient's systolic BP is less than 49, the patient receives a score of 1 for systolic BP.

Calculate the Glasgow Coma Scale score.

If the patient's GCS is 8, the patient receives a score of 2 in this category.

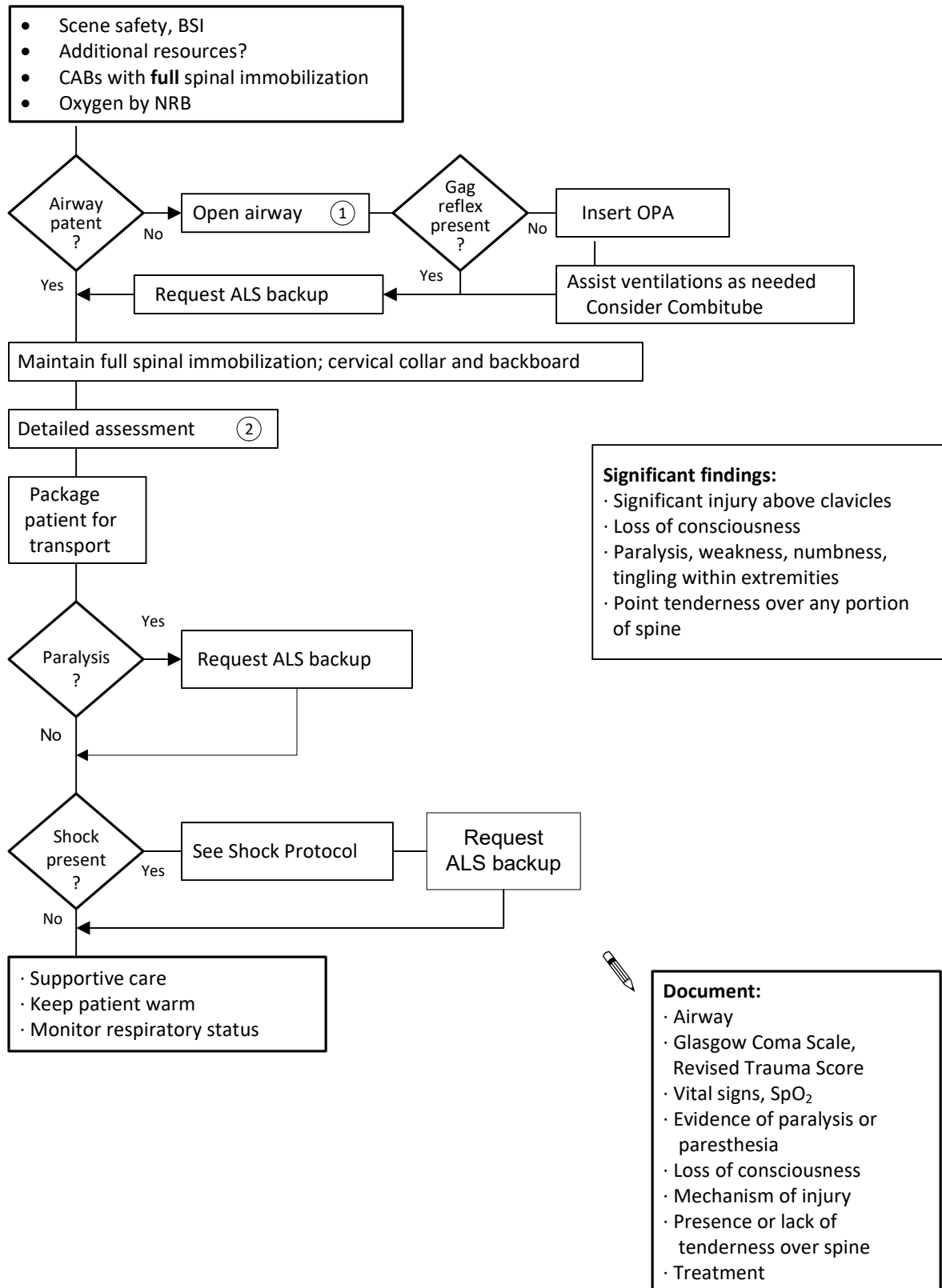
Add the 3 scores together. This gives you the patient's Revised Trauma Score. In this example, the RTS would be 6. Lower scores are associated with higher mortality. To see how to calculate a Glasgow Coma Scale score, go to the Glasgow Coma Scale protocol.

Adult and Child

Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best motor response	None	1
	Obeys commands	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1

Infant and Toddler

Glasgow Coma Scale		
Eye opening	Spontaneous	4
	To voice	3
	To pain	2
	None	1
Best verbal response	Smiles, interacts	5
	Consolable	4
	Cries to pain	3
	Moans to pain	2
Best motor response	None	1
	Normal movement	6
	Localizes pain	5
	Withdraws (pain)	4
	Flexion	3
	Extension	2
	None	1



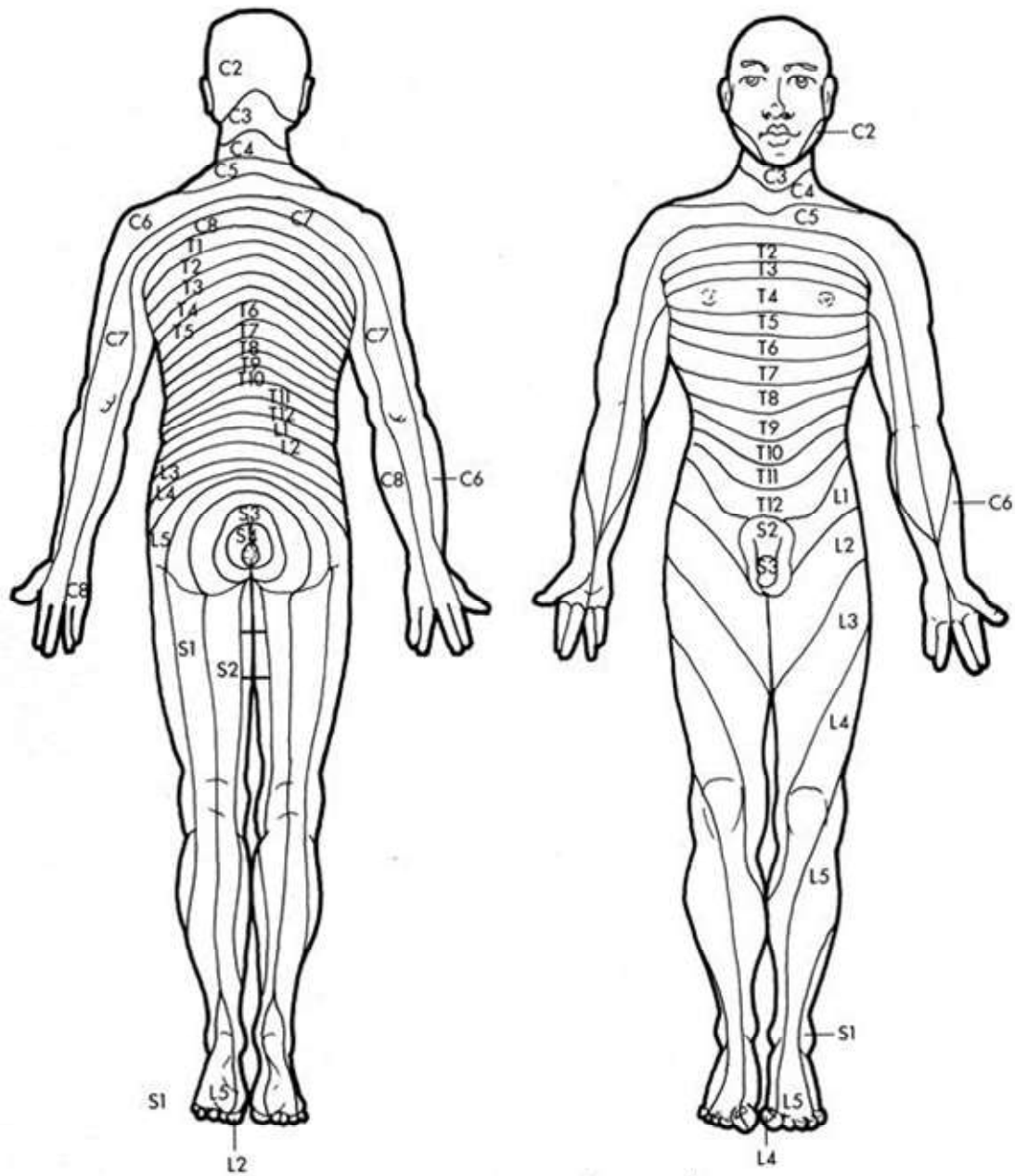
1 Maintain strict spinal immobilization; consider jaw thrust maneuver.

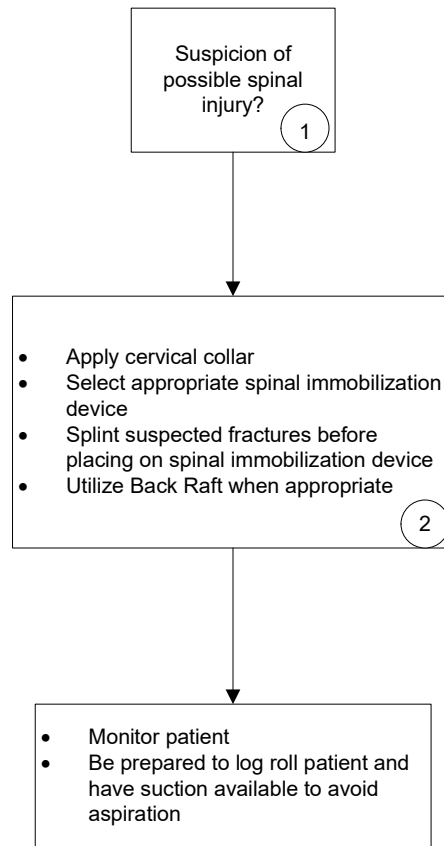
2 Secondary survey to include frequent neurologic checks and CMS (circulation, motor, sensation).

Determine level of injury by dermatome involved. See Trauma: Spinal Cord Dermatome Diagram.

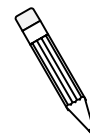
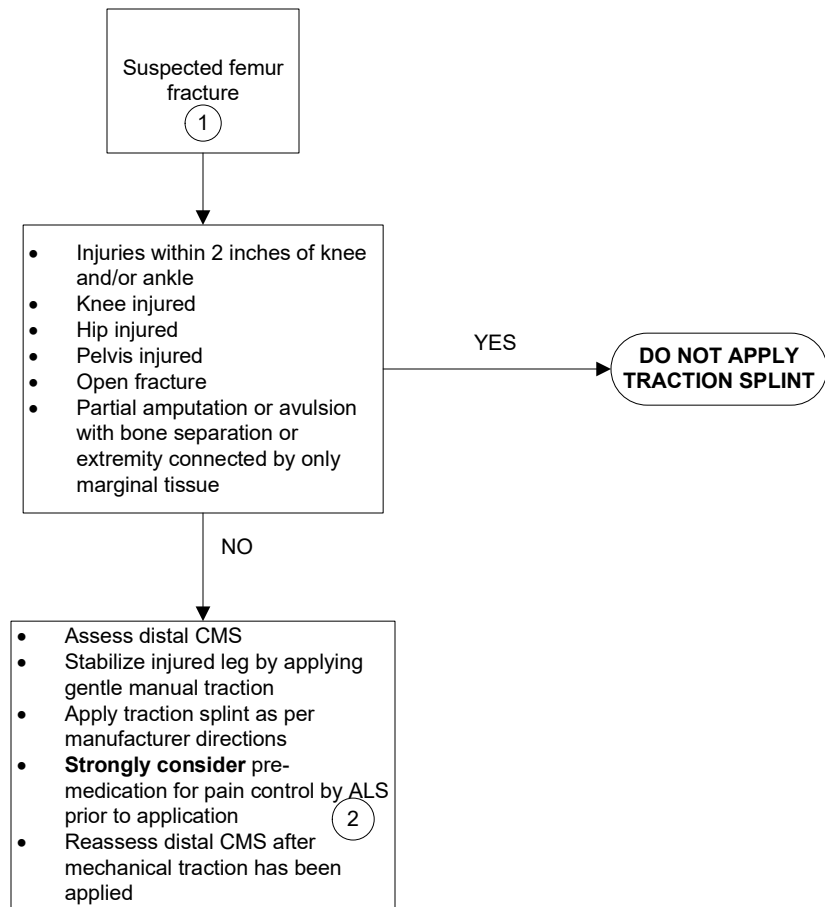
Trauma: Spinal Cord Dermatome Diagram

Emergency Medical Responder Protocol





- 1 Mechanism of injury, patient complaints of midline spinal pain or tenderness, and focal neurologic deficits such as numbness or weakness, should determine the need to apply a spinal immobilization device. There should be a higher index of suspicion for spinal injuries in those patients that have altered mental status, alcohol and drug intoxication, or distracting injuries.
- 2 Spine immobilization devices include long spine board, short spine board, vest-type extrication device (KED), scoop stretcher, basket stretcher, and vacuum spine board.



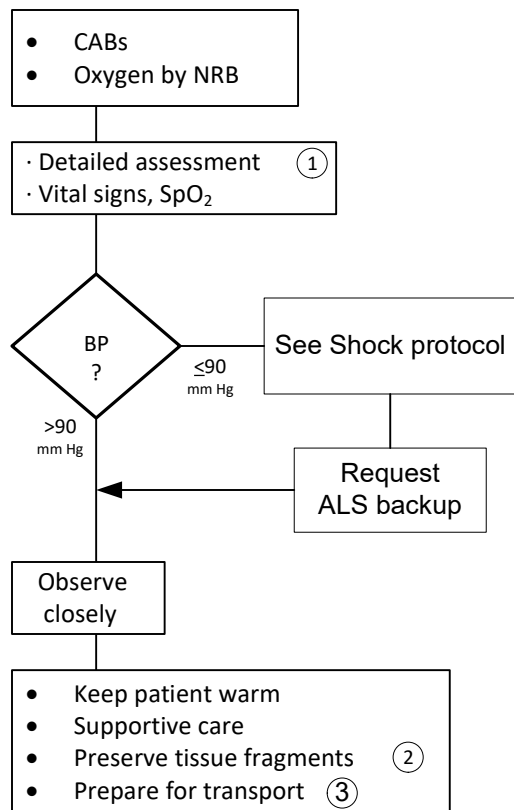
- Document:**
- Injured leg(s)
 - CMS before and after application of traction splint
 - Time traction splint applied

1 Findings consistent with possible femur fracture include thigh deformity, swelling, and shortening of the affected leg.

2 Application of mechanical traction can initially create severe pain. Ideally, ALS should administer pain medication before mechanical traction is applied.

Vaginal Bleeding

Emergency Medical Responder Protocol



Possible causes:

- Miscarriage ②
- Trauma
- Infection
- Placenta previa (abnormal placenta location)
- Abruptio placentae (tearing of placenta)
- Ectopic pregnancy ⑥

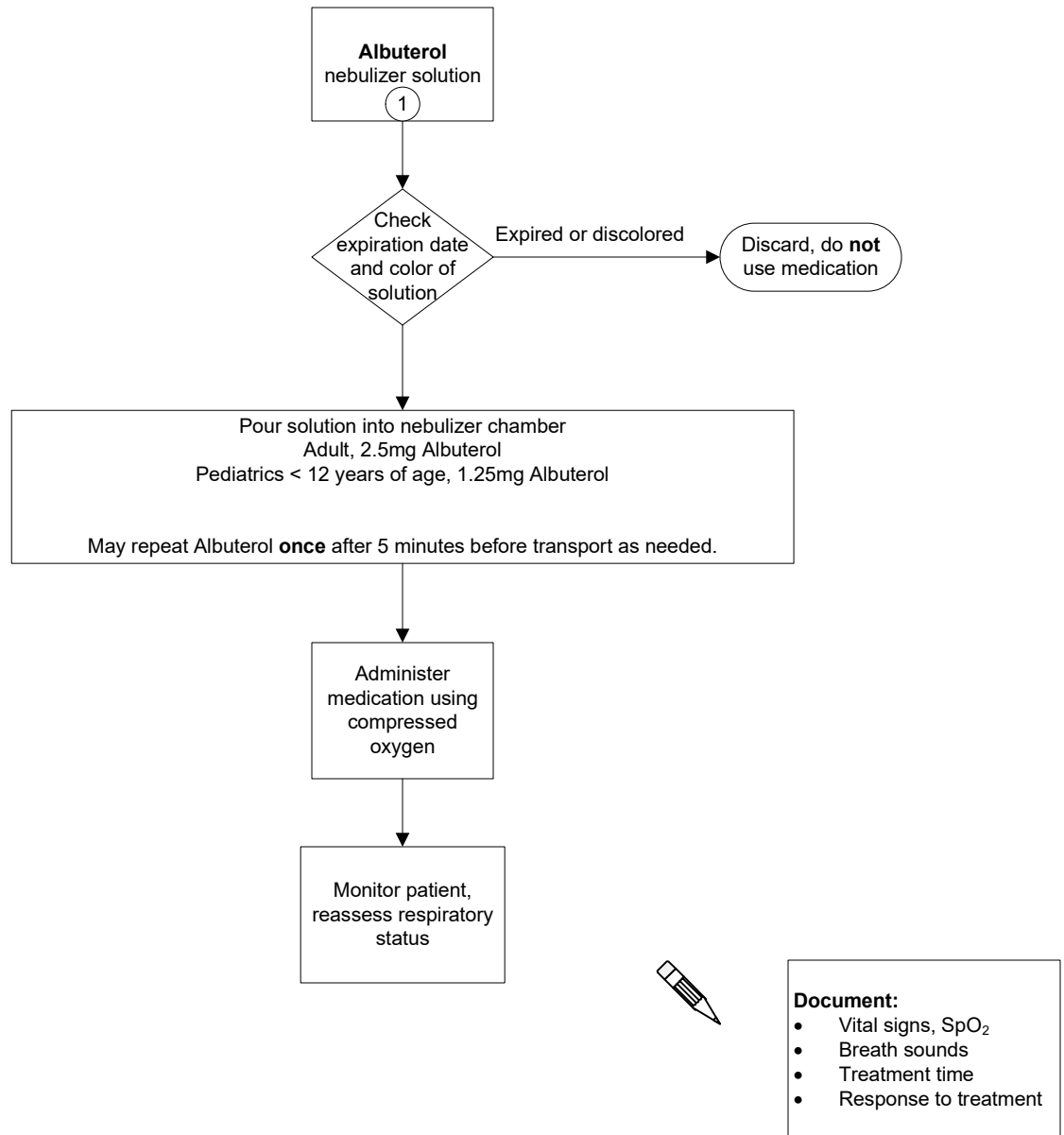
Document:

- Gravida ④
- Para ⑤
- Estimated blood loss
- Color of blood
- Presence of tissue
- Last menstrual period
- Possibility of pregnancy
- Possibility of assault
- Vital signs, SpO₂
- Detailed assessment

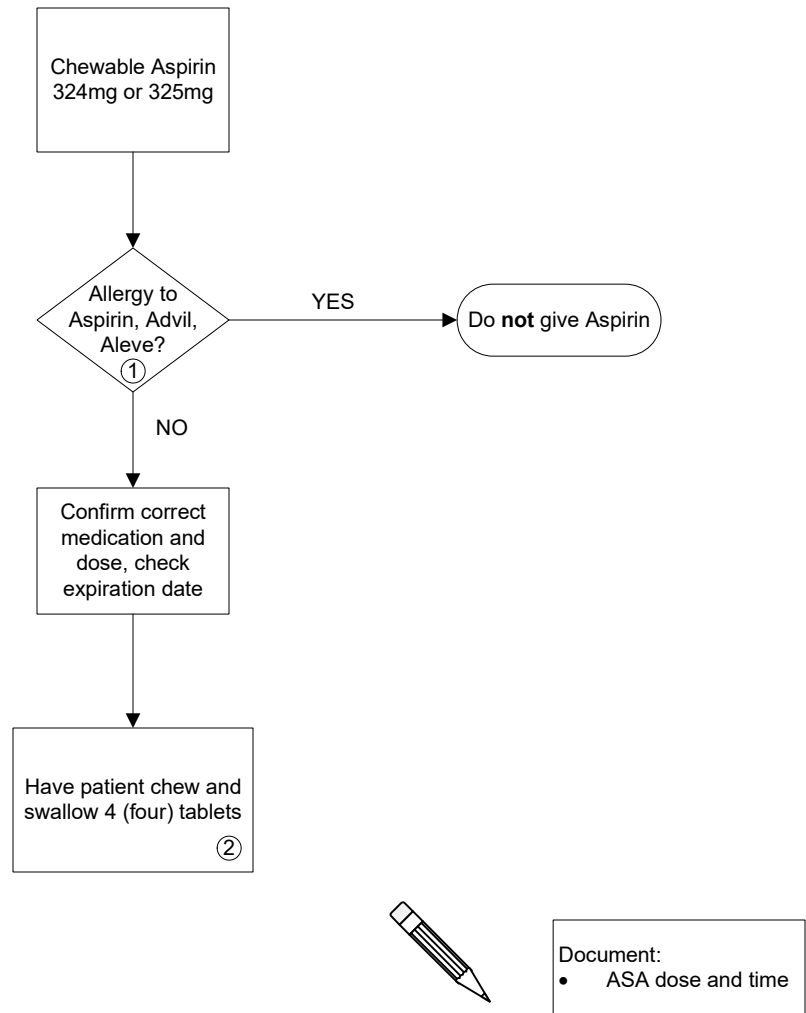
- 1 If the possibility of assault exists, law-enforcement must be present; maintain the chain of evidence. If possible, have a female attendant in the patient care area. Provide privacy for patient. See Sexual Assault protocol.
- 2 If miscarriage, collect tissue fragments and blood if present and transport with patient.
- 3 If patient is beyond late second trimester (≥5 months) of pregnancy, place in left lateral recumbent position for transport.
- 4 Gravid: pregnant, heavy with child. Record the number of times the patient states she has been pregnant (i.e., Gravida, 3 indicates the patient has been pregnant 3 times, including her current pregnancy if she is pregnant at the time of the exam).
- 5 Para: number of live, viable births she has delivered.
- 6 Vaginal bleeding and severe pelvic pain in the first trimester (3 months) of pregnancy should be considered a ruptured ectopic pregnancy until proven otherwise. Expedite preparation for transport and consider requesting ALS backup.

Medication: Albuterol

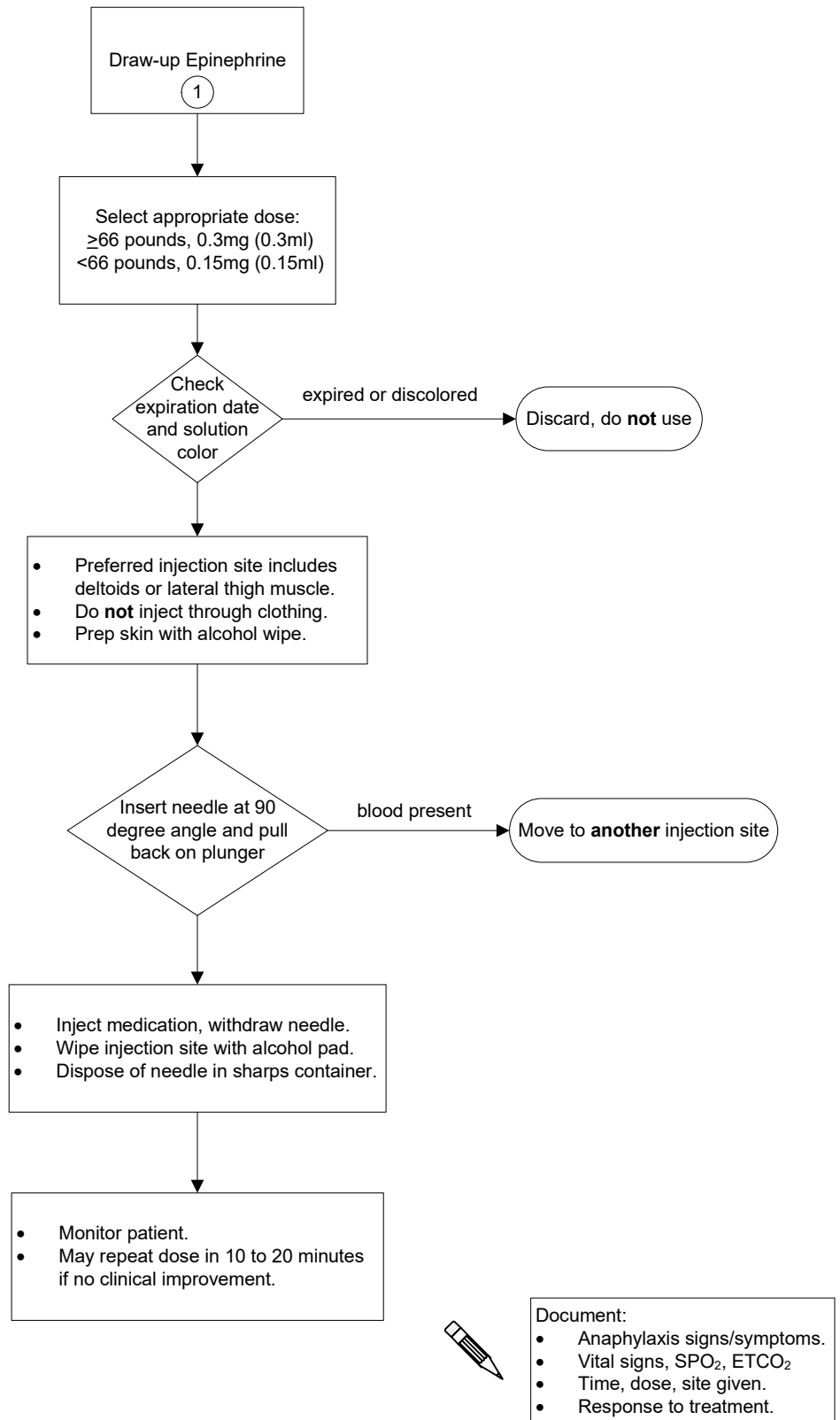
Emergency Medical Responder Protocol



1) Do **not** administer Albuterol to patients that report an allergy to Albuterol.



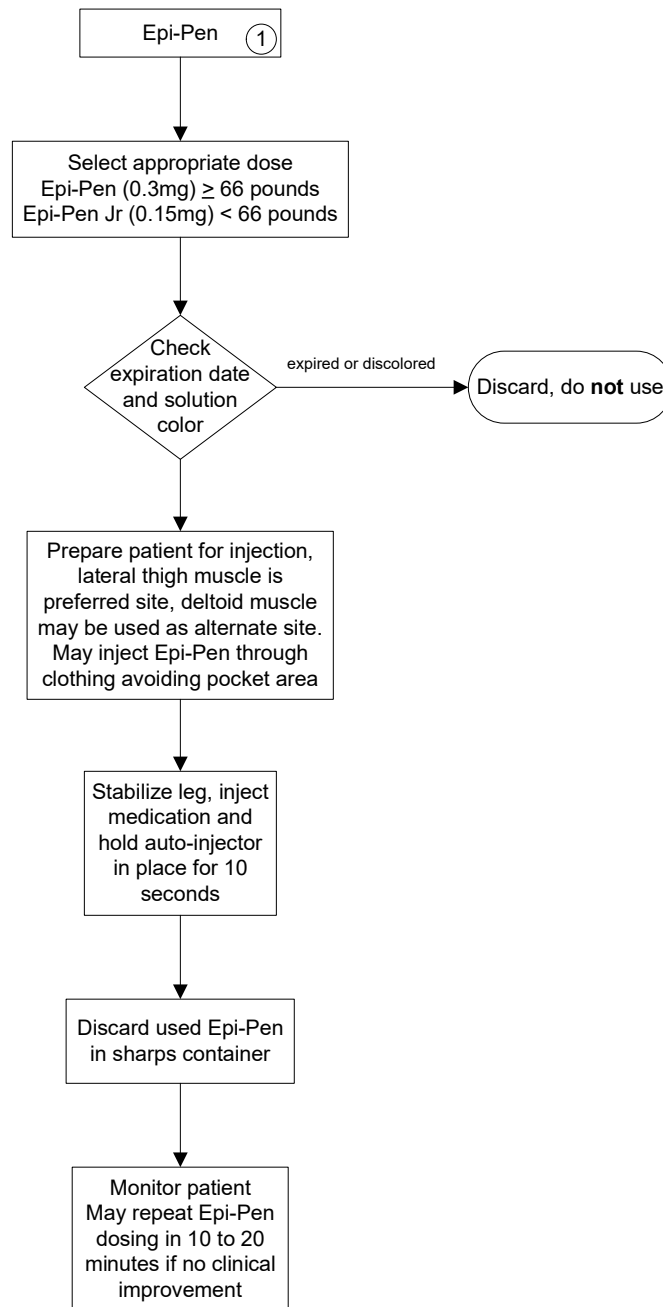
- 1** Allergy refers to symptoms and signs of trouble breathing, wheezing, and/or hives when exposed to the medication. Stomach intolerance to Aspirin, Advil, or Aleve is **not** a true allergy or contraindication to giving the medication. If uncertain, contact medical control.
- 2** Give aspirin regardless of patient reporting taking aspirin before EMS arrival. Coumadin and antiplatelet drugs (Plavix) are **not** a contraindication to giving aspirin.



1 Draw-up Epinephrine is to be used for patients with **severe** allergic reactions, including airway difficulties, and/or hypotension. Do **not** use draw-up Epinephrine for minor allergic reactions such as hives and itching.

Medication: Epi-Pen

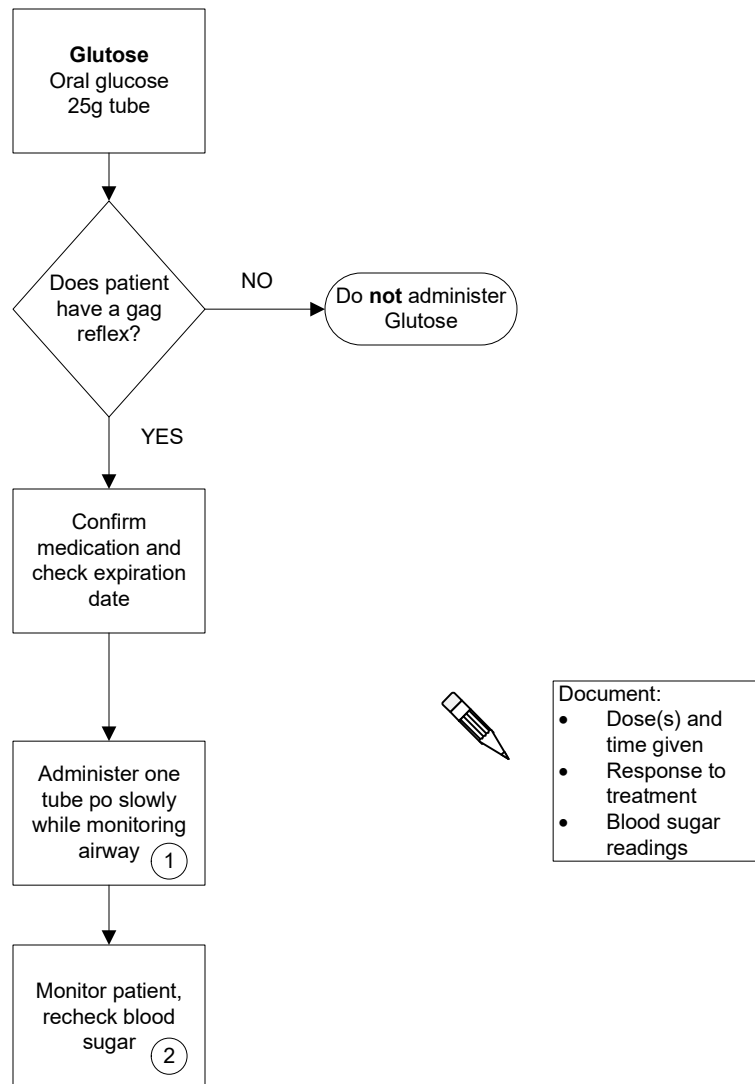
Emergency Medical Responder Protocol



Document:

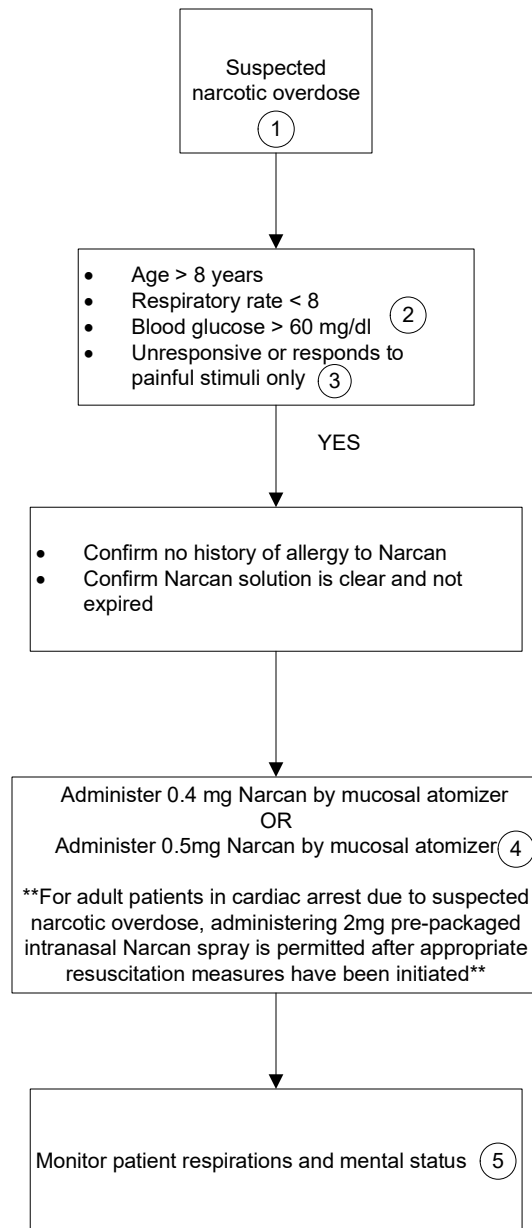
- Anaphylaxis signs/symptoms
- Vital signs, SpO₂, ETCO₂
- Time, dose, site given
- Response to treatment

1 Epi-Pen is to be used for patients with **severe** allergic reactions, including airway difficulties, and/or hypotension. Do **not** use Epi-Pen for minor allergic reactions such as hives and itching.



1 Patients that are supine should be log rolled and the Glucose administered slowly in the downside facial cheek while monitoring the airway.

2 May repeat dose if patient remains symptomatic and blood glucose <60mg/dl.



1 Findings of narcotic overdose include a confused or unresponsive patient, overdose history provided by bystander, paraphernalia or medical history consistent with narcotic use. Narcotic overdose creates pinpoint pupils and respiratory depression.

2 If blood glucose is less than 60 mg/dl, treat low blood sugar first, then reassess patient.

3 If patient can be aroused by painful stimuli, enough to maintain an appropriate respiratory effort and protect airway, consider withholding Narcan.

4 0.4mg single dose unless supplied in 2mg/2ml prefilled ampules then single dose is 0.5mg.

5 If no improvement after 5 minutes of initial dose of Narcan and/or deterioration in respiratory status, give a second dose of Narcan IN. Narcan can continue to be administered every 5 minutes up to a total dose of 2.0 mg.

ALS Ground intercept is recommended for patients presenting with the following signs and symptoms:

- Airway compromise not corrected by initial BLS interventions.
- Breathing difficulties not corrected by initial BLS interventions.
- Cardiopulmonary arrest.
- Hypotension.
- Chest pain that is likely cardiac.
- Altered level of consciousness that is not corrected by initial EMR interventions.
- OB patient in active labor.
- Seizures that are prolonged or repetitive.
- Hypoglycemia not responsive to initial BLS interventions.
- Anaphylaxis not responsive to initial BLS interventions.
- High risk injuries:
 - Motor vehicle vs pedestrian.
 - High speed vehicle crash with or without roll over with significant structural damage.
 - Death of vehicle occupant.
 - Extrication time > 20 minutes.
 - Ejection from vehicle.
 - Head injury with altered LOC and/or risk of airway difficulties.
 - Chest injury with breathing difficulties.
 - Abdominal injury with unstable vital signs.
 - Multiple long bone deformities with or without open fractures.
 - Suspected spinal injury with or without neurologic deficit.
 - Significant high speed separation of rider from ATV, snowmobile, or motorcycle.
 - Falls > 10 feet (twice patient's height for pediatric patient).
 - Burns >15% BSA and/or involving face or neck.
 - Multiple trauma involving extremes of age, <5 and >55 years of age.
 - Penetrating injuries to the head, neck, chest, abdomen or pelvis.
- Low risk injuries requiring pain control.

Request for a helicopter is limited to accident scenes where distance to transport the patient to a trauma center exceeds 15 minutes or there will be a delay in transport due to prolonged extrication. Another consideration for use of the helicopter is delay in accessing the transporting ground ambulance due to terrain. As a rule, unstable and/or high risk medical patients should be initially transported by the responding ground BLS ambulance with a request for ground ALS intercept. The helicopter should **not** be requested for out of hospital medical cardiopulmonary arrests.

EMS Departments are responsible for developing and implementing body substance isolation policies and bloodborne pathogen exposure control programs. It is recommended that departments utilize the most current Occupational Safety and Health Bloodborne Pathogen Exposure Program.

Personal protective equipment is to be worn by all EMS personnel having patient contact which includes, but is not limited to:

- Latex - free disposable gloves
- Eye and face protection
- Protective clothing

EMS providers with known exposure to blood or other potentially infectious patient body substances will, as soon as practical, report the exposure to the ED physician/staff on duty and the ambulance director.

Adult patients (18 years of age or older) with valid DNR orders are to be provided comfort measures only. DNR status **prohibits** EMS personnel from initiating any heroic resuscitative interventions including but not limited to:

- CPR.
- Advanced airway placement.
- Assisting ventilations.
- Application of an AED.

Acceptable interventions that can be provided to a DNR patient include but are not limited to:

- Clearing of airway.
- Providing oxygen.
- Placing patient in position of comfort.
- Splinting extremities.
- Controlling bleeding.
- Providing emotional support.
- Pain control; consider ALS intercept if patient is being transported.

There are two styles of DNR bracelets worn by patients; a plastic bracelet, similar to a hospital bracelet, with an official State of Wisconsin logo with the ordering physician's printed name, signature, and business telephone number. A metal DNR bracelet is engraved with "WI - Do - Not - Resuscitate - EMS" on one side and the patient's first and last name on the other side.

The patient, patient's legal guardian, medical power of attorney, or health care provider that signed the original DNR order can revoke the DNR order at any time. Should the DNR order be revoked in the presence of EMS providers, the patient should be provided with the level of care consistent with the EMS service's scope of practice and the medical needs of the patient. ALS intercept should be requested for those patients meeting ALS criteria.

If there is any doubt about initiating treatment or the level of care to be provided to a DNR patient, **contact on-line medical control**.

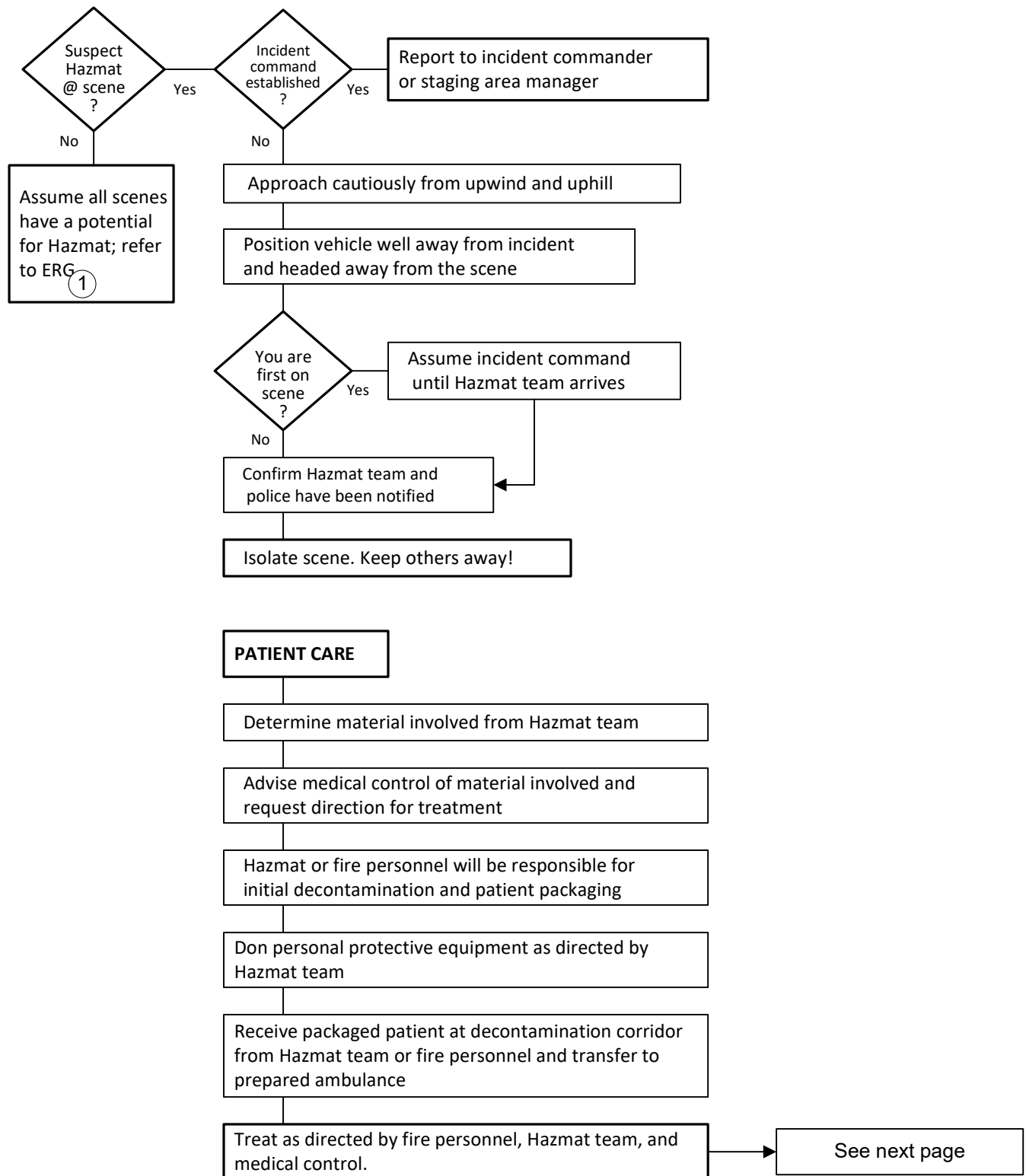
Each department will establish guidelines addressing the appropriate use of emergent response to an incident consistent with Wisconsin state statutes. Emergent response requires the use of **both** red lights and sirens. The risks to the First Responder and public while responding to an incident emergently have to be weighed against the potential benefits to the patient. This should be determined on a case by case basis factoring in dispatch information, reported patient presentation, road conditions, distance to scene, and distance from the responding ambulance. The following clinical presentations are to be used as guidelines for emergent response:

- Airway compromise.
- Breathing difficulties .
- Cardiopulmonary arrest.
- Hypotension.
- Chest pain that is likely cardiac.
- Altered level of consciousness.
- Obstetrical patients in active labor.
- Seizures that are prolonged or repetitive.
- High risk injuries, see ALS Ground Intercept and Helicopter Request protocol.

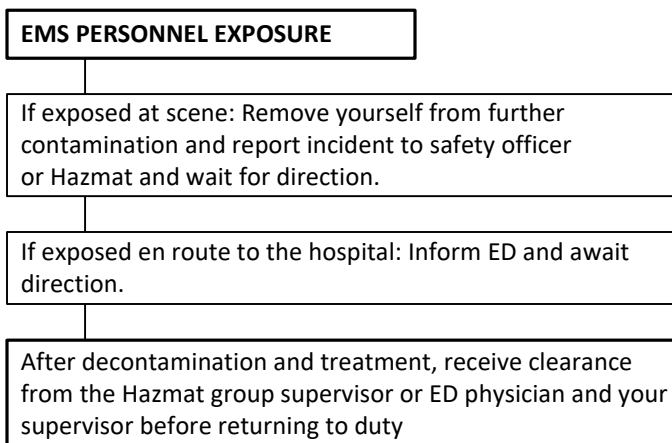
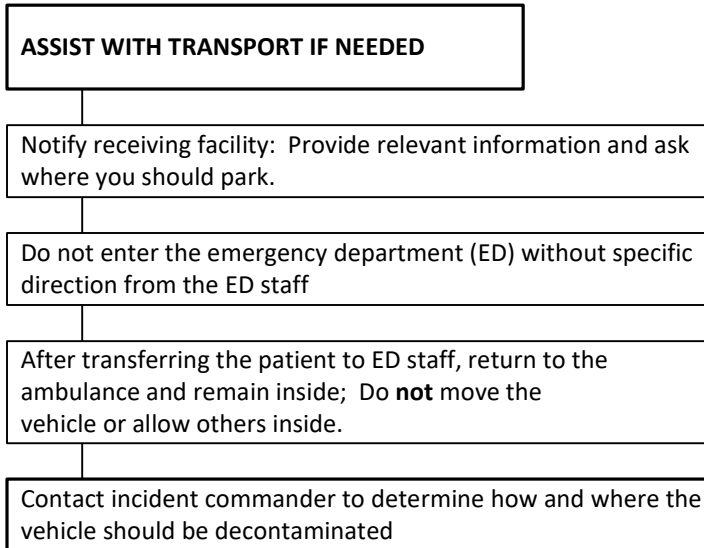
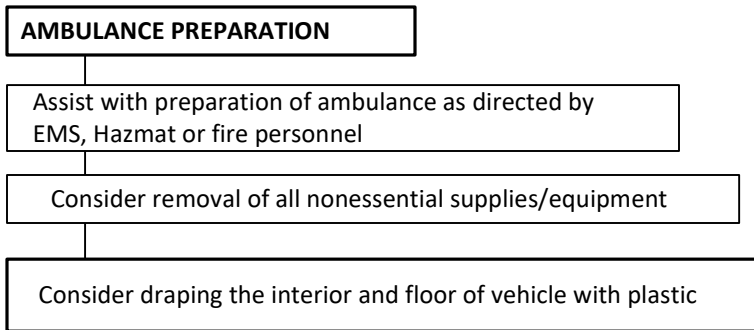
Hazmat

For Non-Hazmat Personnel

Emergency Medical Responder Protocol



1 Emergency Response Guidebook (ERG) is published by the DOT and is used to identify hazardous materials and to provide action plans listing health risks and necessary protective equipment to deal with hazardous materials. A current copy of the ERG should be carried in all emergency response vehicles.



- Document:**
- Patient care
 - Response to treatment
 - Hazardous material
 - Communication with ED, medical control, Hazmat team
 - Measures taken to limit exposure
 - Decontamination

Individuals identifying themselves as health care providers (physician, physician assistant, nurse, paramedic, EMT, EMR) that are not affiliated with the responding EMS service may already be on scene, or arrive on scene, offering to assist with patient care. These individuals will be required to show identification with proof of current State of Wisconsin certification and/or licensure.

The care provided by these individuals will be limited to the scope of practice of the responding EMS service, **not** the health care provider. It is the EMS incident commander's decision whether or not to allow these individuals to participate in the care of the patient. If the individual is asked to leave the scene, refuses, and becomes disruptive to patient care, law enforcement should be requested.

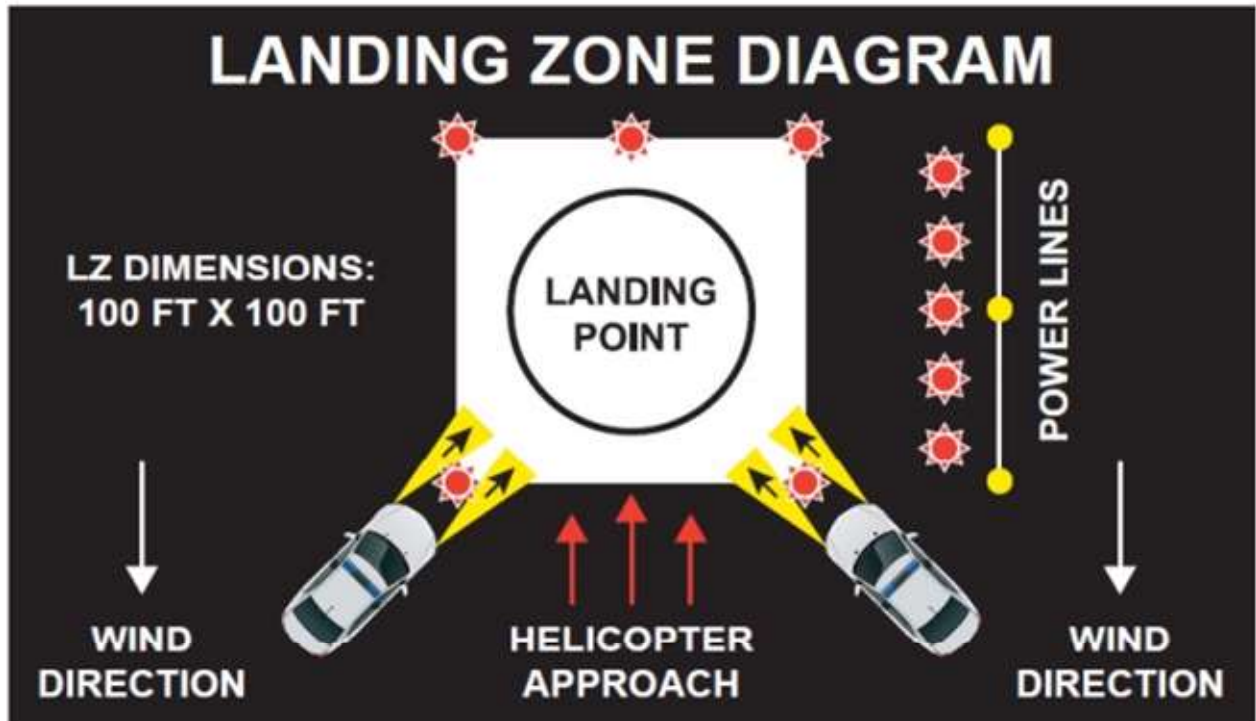
A physician may assume the role of on scene medical control if the following requirements are met:

- Physician provides proof of current licensure in Wisconsin.
- Physician agrees to sign the prehospital ambulance report.
- Physician agrees to accompany the patient in the ambulance to the hospital.

On-line Medical Control at Marshfield Medical Center will be contacted to approve transfer of medical direction to the on scene physician.

Make your decision to request a medical helicopter **early** based on dispatch information or patient information from the scene provided by law-enforcement or first responders. The helicopter can be placed on flying standby, saving valuable time if the aircraft is eventually required.

- Landing zone (LZ) procedures:
- LZ must be flat and be a minimum of 100 X 100 feet.
- LZ must be set up to facilitate takeoffs and landings into the wind.
- Approach and departure ends of the LZ should be clear of obstructions (trees, telephone poles, wires, etc.)
- Debris such as wood, cans, and plastic should be removed from the LZ. Consider lightly hosing down the LZ area with water if sand or dust is present to prevent reduced visibility from rotor wash.
- For night operations, the LZ must be clearly marked and adequately illuminated using flares, vehicle lights, or other portable lighting. Do **not** shine lights at the approaching helicopter as this will adversely effect the pilot's night vision.
- LZ officer will stand at the upwind edge of the LZ, facing the approaching helicopter, with his/her back to the wind. The pilot will utilize MARC II frequency to contact the LZ officer requesting LZ description including presence and location of wires and other hazards, approximate wind speed and direction, and if the LZ is secure for landing. The LZ officer should continue monitoring the MARC II frequency throughout the scene incident until after departure of the helicopter.
- If at any time the security of the LZ is violated, the LZ officer should immediately notify the pilot by radio.
- After the aircraft has landed, stay at least 50 feet from the helicopter. Do **not** approach the helicopter without permission of the pilot or medical crew. Anyone approaching the helicopter must be accompanied by a member of the medical crew.
- Fire or EMS personnel may be requested by the medical crew or pilot to function as a tail rotor guard. A tail rotor guard stands 50 feet behind the helicopter facing the rear of the aircraft and prevents any unauthorized personnel from approaching the rear of the helicopter.
- Secure all loose items including sheets, clothing, and hats in preparation for transferring the patient to the helicopter. EMS personnel should also remove caps and secure helmet with chin strap.
- Wait for medical crew to escort patient and assisting EMS personnel to the helicopter. Assist in loading the patient as directed by the medical crew. With permission of the medical crew or pilot, exit in the same direction you approached the helicopter.



As practical as possible, latex free products should be used for all patient care:

- Observe standard body substance isolation precautions.
- Latex free gloves will be worn by all EMS providers that have contact with the patient.
- If equipment is needed for patient care and is known to contain, or possibly contain latex, wipe all contact sites with clean cloth or gauze and/or apply latex free tape to cover areas that may result in patient exposure.
- If the patient has a known latex allergy and has a latex-free treatment kit, it is acceptable to use the contents of the kit if necessary.
- Do **not** delay medical care to modify latex containing equipment in critically ill or injured patients.

Patient restraints should be used only when necessary to prevent injury to the patient or EMS personnel. This protocol applies to all patients, including patients being treated under implied consent:

- Ensure that the scene is safe.
- Utilize law-enforcement whenever possible.
- Ensure that sufficient EMS personnel are present to safely control the patient while restraining.
- Place patient face up or on side.
- Secure extremities: for adults use four point restraints, one arm up over head, the other arm down by side. Alternatively, patient may be wrapped in a sheet to prevent movement of arms or legs. For children, use three point restraint (two arms and one leg.) Alternatively, patient may be wrapped in a sheet to prevent movement of arms and legs.
- Patients under police custody that are handcuffed will be placed face up with handcuffs immediately accessible on the anterior portion of the patient's torso. Ideally, the officer will remain with the patient at all times, including during transport. Alternatively, the officer may closely follow the ambulance to the ED.
- TASER barbs should **not** be removed by EMS personnel, especially TASER barbs located in the eye, face, or genitalia. Patients restrained with a TASER may have significant injuries which requires a thorough EMS assessment with documentation. All patients restrained with a TASER require medical evaluation and/or clearance by medical control.
- Consider use of cervical extrication collars and additional padding to prevent injury in those patients that continue to resist restraint measures.
- Patient positioning should be modified to a neutral position when restraining patients with preexisting limited mobility, e.g. elderly patients with kyphosis or cerebral palsy patients with contractures.
- Always be prepared to log roll the patient and provide suctioning in the event of vomiting!
- Monitor and document, at least every fifteen minutes, patient vital signs, SpO₂ and the neurovascular status of restrained extremities.
- Detailed documentation of indications for use of restraints, type of restraint(s) used, and time restraints initially placed.

First Responders are authorized to prepare patients for transport, consistent with their scope of practice, level of training and ambulance service guidelines. It is understood that there will be situations requiring movement of the patient before arrival of the responding ambulance.

These situations include, but are not limited to:

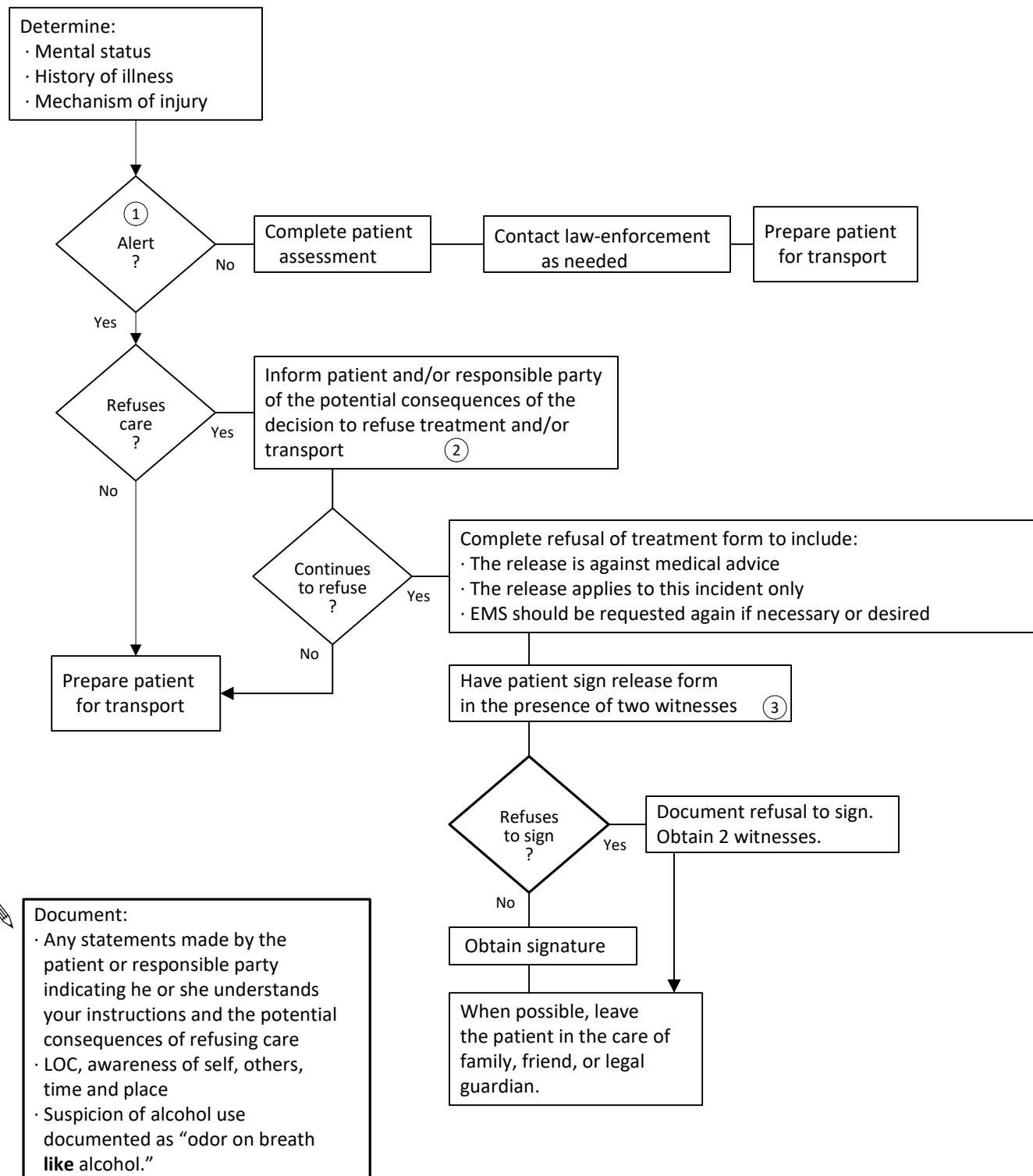
- gaining access to the patient to adequately provide care.
- safety concerns for the patient and First Responder.
- adverse environmental conditions.
- accessing the ambulance.

First Responder services that utilize rescue equipment such as ATVs and snowmobiles may use these vehicles to convey a patient to an ambulance when direct access to the patient by the ambulance is not possible. It is assumed that the patient will be appropriately packaged and secured to the transferring device in a way that is safe and consistent with individual department policy.

A patient may also be placed in a stationary modular first responder vehicle while awaiting arrival of the transporting ambulance when there are adverse environmental conditions. The first responder vehicle is to remain stationary while awaiting arrival of the ambulance and is **not** to be used to transport the patient.

Refusal of Care

Emergency Medical Responder Protocol



Note: This protocol assumes it is medically indicated to treat or transport this patient.

1 "Alert" implies the patient is conscious and oriented to person, place, and time, (Glasgow Coma Scale Score = 15), **without** evidence of head injury or suspicion of drug/alcohol use.

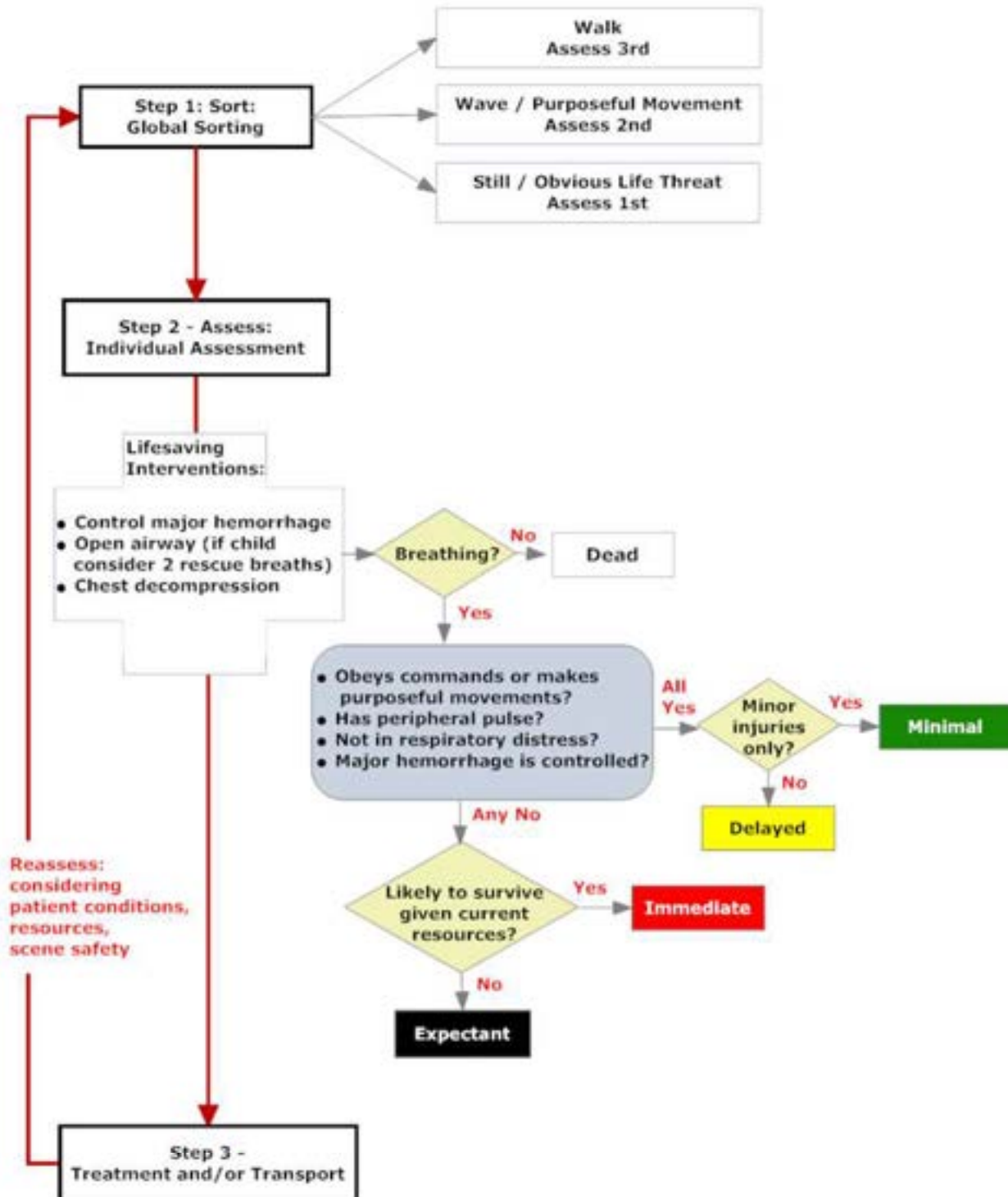
2 Ensure that the patient understands these consequences. Minors **cannot** refuse treatment. If the minor continues to refuse care, stay with the patient and contact law enforcement.

3 The witness should be someone other than EMS personnel, if possible, and must sign the release.

S.A.L.T. Triage

Sort, Assess, Lifesaving Interventions, Treat/Transport

Emergency Medical Responder Protocol



National Guideline for the Field Triage of Injured Patients

RED CRITERIA High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	All Patients • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% Age 0–9 years • SBP < 70mm Hg + (2 x age in years) Age 10–64 years • SBP < 90 mmHg or • HR > SBP Age ≥ 65 years • SBP < 110 mmHg or • HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment
• High-Risk Auto Crash – Partial or complete ejection – Significant intrusion (including roof) • >12 inches occupant site OR • >18 inches any site OR • Need for extrication for entrapped patient – Death in passenger compartment – Child (age 0–9 years) unrestrained or in unsecured child safety seat – Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height > 10 feet (all ages)	Consider risk factors, including: • Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers If concerned, take to a trauma center

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

It is acceptable to **withhold** resuscitative measures on patients presenting with one or more of the following conditions:

- Decapitation
- Transection of the torso
- Rigor mortis ①
- Body decomposition
- Dependent lividity ②
- Valid DNR identification

Contact law-enforcement and the Coroner.

Exceptions to withholding resuscitative measures include:

- Pediatric patients
- Hypothermic patients
- Victims of electrocution or lightning strike
- Drowning (submersion) victims

1 Rigor mortis is defined as postmortem muscle rigidity which begins approximately 3 hours after death and lasts about 72 hours.

2 Dependent lividity is defined as a bluish skin discoloration in the dependent portions of the body which occurs within 20 minutes to 3 hours after death.

Any questions regarding withholding of resuscitative measures, contact on-line medical control.