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AMBULANCE REROUTING CRITERIA

(Abbreviated version - see Ambulance Rerouting policy in the Administration Manual for the complete policy)

REASONS FOR REROUTING OF AMBULANCES – Conditions that may necessitate REROUTING are:

- ▶ **CT Failure** - When the CT scanner is inoperative, patients demonstrating neurological signs/symptoms of stroke, or acute head injury will be diverted
- ▶ **Trauma Center Overload** - When it has been determined that the hospital is unable to meet the criteria for a Level II Trauma Center in Alameda County (O.R. is full)
- ▶ **STEMI Diversion** - STEMI/Cardiac Arrest Receiving Centers may divert due to diagnostic or treatment equipment failure or scheduled maintenance for patients experiencing acute MI or post cardiac arrest
- ▶ **Stroke Center Diversion** - Certified Stroke Centers may divert due to diagnostic or treatment equipment failure or scheduled maintenance for patients exhibiting signs of acute stroke symptoms/stroke alert
- ▶ **Extended Wait Times “Bypass”** - In the event a hospital is holding two or more ambulances for more than thirty (30) minutes, incoming ambulances may be rerouted and facility placed on bypass by an EMS transport provider supervisor for all non-critical patients until ED resolves transfer of care issues with ambulance service provider(s)
- ▶ **Physical Plant Casualty (Internal Disaster) - An unforeseeable physical or logistical situation/ circumstance** - (e.g., fire, bomb threat, power outage, etc.) that curtails routine patient care and renders continued routine ambulance delivery unsafe. A receiving hospital or trauma center may divert any patient, including critical trauma patients (CTP) as deemed necessary by the facility during this type of incident. The hospital must come off Physical Plant diversion immediately upon resolution of the issue

EXCEPTIONS the following patients may not be rerouted when a hospital is placed on “bypass”:

- ▶ Patients requiring **“Specialty Center”** services (i.e. Trauma, STEMI, Stroke)
- ▶ **Obstetric patients who may require imminent delivery** (e.g. - if baby is crowning, patient exhibiting delivery complications, etc.)
- ▶ **Sexual assault patients** (see policy #7006 for destination information pertaining to sexual assault). Specialized teams are available at Highland, Children's and Washington EDs
- ▶ **Direct admits- Receiving hospital MD has accepted the patient as a direct admit with an assigned hospital bed**
- ▶ **Patients with any uncontrollable problem in whom diversion would be life/limb threatening.** (e.g. - unmanageable airway, uncontrolled hemorrhage, unstable cardiopulmonary condition, full arrest etc.)
- ▶ **Unstable patients who** in the judgment of the paramedic may experience greater risk by being transported to an alternate hospital than the hospital on “bypass”. The patient should be transported to the closest most appropriate facility in accordance with the Alameda County EMS Transport Guidelines policy
- ▶ **Any patient who requests a specific facility.** Field personnel should explain the hospital's circumstances and that a wait for service is possible; however, if the patient continues to insist on transport, the patient should be transported to the hospital on “bypass” (excluding specialty interventions)

Reasons for Rerouting	Maximum time allowed	Condition	Types of patients rerouted	Appropriate facility for rerouted patients
Computerized Tomography (CT)	Until resolved	CT inoperative	<ul style="list-style-type: none"> ▶ Acute head injury ▶ Acute Stroke by CPSS 	<ul style="list-style-type: none"> ▶ Nearest Trauma Center ▶ Closest Stroke Center
Trauma Center Overload	Until resolved	Trauma resources depleted	Critical Trauma Patients	Designated Trauma Center
STEMI (equip. failure)	Until resolved	Diagnostic, Equipment failure or Scheduled Maintenance	STEMI/ post cardiac arrest	Closest STEMI/Cardiac Arrest Center
Stroke Center (equip. failure)	Until resolved	Diagnostic, Equipment failure or Scheduled Maintenance	Stroke patients	Closest Stroke Center
Extended Wait times/ “Bypass” (**EMS directed)	As soon as possible	Two or more ambulances stacked at a facility waiting turnover of care >30 minutes	All except noted exceptions	Closest appropriate facility
Physical Plant Casualty	Until resolved	Physical plant breakdown (bomb threat, fire, etc.)	All	Closest appropriate facility

EMERGENCY MEDICAL SERVICES - STAFF DIRECTORY

EMS Office	618-2050 (main number) 618-2099 (fax #)	
On-call EMS Staff	(925) 422-7595 – ACRECC	
EMS Website e-mail - www.alcoems.org alcoems@acgov.org		
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CERTIFICATION | RECERTIFICATION | ACCREDITATION CHECKLIST

EMT INITIAL CERTIFICATION

- ▶ A signed EMT Certification application (available at <http://www.acphd.org/ems> or from the EMS Agency).
- ▶ A copy of your EMT course completion certificate.
- ▶ A copy of your NREMT card.
- ▶ A copy of your driver's license, ID card, or valid military ID card (with photo).
- ▶ A copy of your completed Live Scan application.
- ▶ Pay the application fee (online, money order, cashier's check or municipal purchase order payable to Alameda County EMS - no personal checks or cash).

EMT RECERTIFICATION

- ▶ A signed EMT Recertification application (available at <http://www.acphd.org/ems> or from the EMS Agency).
- ▶ A copy of the front and back of your signed CPR card.
- ▶ A copy of your driver's license, ID card, or valid military ID card (photo id).
- ▶ Copies of your continuing education certificates or your refresher certificate.
- ▶ A copy of your Skills Verification form.
- ▶ A copy of your completed Live Scan application form if this is your first recertification with Alameda County EMS.
- ▶ Pay the application fee (money order, cashier's check or municipal purchase order payable to Alameda County EMS - no personal checks or cash).
- ▶ If your certificate has expired, see EMT Certification policy # 3200 (Administration Manual).

MAINTAINING PARAMEDIC ACCREDITATION

Your accreditation is continuous as long as you:

- ▶ Maintain your California Paramedic license.
- ▶ Are employed by an approved paramedic provider agency.
- ▶ Meet local requirements for updates in local policy, procedure, protocol and local optional scope of practice, and comply with the requirements in the system-wide quality improvement program (policy # 2000).

If any of the above requirements are not met or maintained, accreditation to practice shall be withdrawn until successful completion of the requirement(s). A paramedic whose accreditation has been withdrawn for more than one year shall be required to re-apply for initial accreditation. You may only work in your basic scope of practice until your accreditation is current.

Rev. 12/2011

**This is an abbreviated version of the requirements.
For more information see the EMT Certification policy (# 3200)
and Paramedic Accreditation policy (# 3302) in the EMS Administration Manual.**

Approved Abbreviations

AAA	Abdominal aortic aneurysm	CMED	Central Medical Emergency Dispatch
Ab	abortion	CNS	central nervous system
ABC	airway, breathing, circulation	c/o	complaints of
abd	abdomen, abdominal	CO	carbon monoxide
ABG	arterial blood gases	cod	codeine
abn	abnormal	consc	conscious
AC	antecubital	cont	continued
AED	automated external defibrillator	COPD	chronic obstructive pulmonary disease
A-fib	atrial fibrillation	CP	chest pain
AIDS	Acquired Immune Deficiency Syndrome	CPAP	Continuous positive airway pressure
ALCO	Alameda County	CPR	Cardiopulmonary resuscitation
ALOC	altered level of consciousness	CSF	cerebrospinal fluid
ALS	advanced life support	CSM	Circulation, sensation, and movement
am or		C-Section	cesarean section
a.m.	morning	C-Spine	cervical spine
AMA	against medical advice	CT	Computerized Tomography
amb	ambulatory	CVA	cerebrovascular accident
amp.	ampule	D & C	dilatation and curettage
A+O	alert and oriented	d/c or	Discontinue, discontinued
ant	anterior	dc'd	
approx	approximately	DCAP-BTLS	deformities, contusions, abrasions, punctures, burns, tenderness, lacerations, swelling
ASA	aspirin	D₂₅	Dextrose 25%
ASAP	as soon as possible	D₅₀	Dextrose 50%
ASHD	Arteriosclerotic heart disease	D₅W	Dextrose 5% in water
AV	atrioventricular	DDS	Doctor of Dental Surgery
BBB	bundle branch block	Dig	Digitalis
BCP	birth control pills	Disch	discharged (from hospital)
bicarb	sodium bicarbonate	DM	diabetes mellitis
bid	twice a day	DOA	dead on arrival
bilat.	bilateral	DOE	dyspnea on exertion
BLS	basic life support	DPT	diphtheria, pertussis, tetanus
BM	bowel movement	DT's	delirium tremens
BP or BP	blood pressure	Dr.	doctor
BS	breath sounds or blood sugar	dsg	dressing
C	centigrade	Dx	diagnosis
°	with	EB or E/B	eastbound
C-2	Code 2	ED	emergency department
C-3	Code 3	EDC	estimated date of confinement
CA	carcinoma	EDD	Esophageal detection device
CaCl	calcium chloride	EEG	electroencephalogram
caps	capsules	EKG	electrocardiogram
cath	catheter/catheterize	Emb	embolus
CAT	computerized axial tomography	ENT	Ear, nose and throat
cc	cubic centimeter	E/O	east of
CC	chief complaint	Epi	Epinephrine
CCU	Coronary Care Unit	ER	Emergency Room
CHF	congestive heart failure	ET	endotracheal
cm	centimeter	ETT	endotracheal tube

ETCO₂	Endtidal CO ₂	LBB	left bundle branch block
ETA	estimated time of arrival	lido	lidocaine
ETDLA	Esophageal tracheal double lumen airway	LLL	Left Lower Lobe
ETOH	ethyl alcohol	LLQ	Left Lower Quadrant
exam	examination	LMP	Last Menstrual Period
ext	external	LNMP	Last Normal Menstrual Period
F	Fahrenheit	LOC	Loss Of Consciousness
FB	foreign body	LPM	Liters per Minute
FBO	foreign body obstruction	LSD	lysergic acid diethylamide
FHT	fetal heart tone	LS	lung sounds
fr.	french	LUL	Left upper lobe
FUO	fever of unknown origin	LUQ	left upper quadrant
fx	fracture	max	maximum
g	gauge	MCA	motorcycle accident
GC	Gonococcus	mcg	micrograms
GI	gastrointestinal	meds	Medicines
gm	gram	mEq	Milliequivalent
GOA	gone on arrival	mg or	Milligram (s)
gr	grain	mgs	
GSW	gunshot wound	MI	Myocardial Infarction
gtt. or	drop/drops	Min. or	Minute (s)
gtts		mins.	
GU	genitourinary	min	minimum
GYN	gynecology	ml	milliliter
H or hr	hour	mm	millimeter
H₂O	water	mod	moderate
HCTZ	Hydrochlorothiazide	MRI	Magnetic Resonance Imaging
HEENT	Head, ears, eyes, nose, and throat	MS	Morphine sulfate
HOB	head of bed	MVA	Motor vehicle accident
HS	hour of sleep	N & V or	Nausea and vomiting
ht	height	NV	
HTN	hypertension	NaHCO₃	Sodium bicarbonate
Hx	history	N/A	Not applicable
irreg	irregular	NAD	no acute distress
ICU	Intensive Care Unit	NB or N/B	northbound
IFO	in front of	NC	Nasal cannula
IM	intramuscular	N/G or NG	nasogastric
IN	intranasal	NKA	No known allergies
inj or inj's	Injury(ies)	NKDA	no known drug allergies
IV	intravenous	N/O	North of
IVP	intravenous push	NORM	normal
JVD	jugular venous destination	NPO	Nothing by mouth
K⁺	potassium	NRB	nonrebreather
KCl	potassium chloride	NRBM	non-rebreather mask
kg	kilogram	NS	Normal saline
L	liter	NSR	Normal sinus rhythm
LA	left arm	NTG	nitroglycerine
lat	lateral	O₂	oxygen
lac	laceration	OB	obstetrics
lb or lbs	pound (s)	OBS	Organic Brain Syndrome

Occ	occult	Rx	prescription
OD	overdose	̄	without
OPA	oropharyngeal airway	SB or S/B	southbound
Ortho	orthopedic	SL or s1	sublingual
oz	ounce	S/O	south of
P	pulse	SOAP	subjective, objective, assessment, plan
PAC	Premature Atrial Contraction	SOB	shortness of breath
palp	palpate	SpO₂	pulse oximetry (saturation of peripheral oxygen)
PCR	Patient Care Report Form	stat	immediately
PE or P. E.	physical exam	STEMI	ST elevation myocardial infarction
Ped	pedestrian	SW	stab wound
Pedi	pediatric	sub-q or sq	subcutaneous
PERL	Pupils Equal, Reactive to Light	Surg	surgery
PERRLA	Pupils Equal, Round, Reactive to Light Accommodation	Sx	symptom
PID	pelvic inflammatory disease	sz	seizure
pm or p. m.	afternoon - evening	tab	tablet
PMD	private medical doctor	TB	tuberculosis
PNB	pulseless non- breathing	Tbsp or T	tablespoon
PND	paroxysmal nocturnal dyspnea	T&C	Tylenol and Codeine
po	by mouth	TCN	Tetracycline
POV	privately owned vehicle	TCP	Transcutaneous pacing
poss	possible	temp	temperature
post-op	after surgery	TIA	transient ischemic attack
PRN	as needed or when necessary	tid	three times a day
psych	psychiatric	TKO	to keep open
pt or pts	patient(s)	trans	transport
PTA	prior to arrival	tsp or t	teaspoon
Pul	pulmonary	Temp	temperature
Pulse Ox	Pulse oximetry	Tx	treatment
PVC or PVCs	premature ventricular contraction(s)	u	units
qd	every day	UA	urinalysis
qh	every hour	URI	upper respiratory infection
q2h	every 2 hours	UTI	urinary tract infection
qid	four times a day	vag	vaginal
qod	every other day	VD	venereal disease
qt	quart	vs	vital signs
R	right	V-tach or VT	Ventricular tachycardia
RA	right arm	WB or W/B	westbound
RBBB	right bundle branch block	Wk or wks	Week(s)
reg	regular	WNL	within normal limits
resp	respiration	WO	west of
r/o	rule out	ws or w/s	watt seconds
RLL	right lower lobe	wt	weight
RLQ	right lower quadrant	x	times
ROM	range of motion	yo	year old
RR	respiratory rate	yr or yrs	year(s)
Rt or R	right		
RUL	Right upper lobe		
RUQ	Right upper quadrant		

HOSPITALS

ACMC	Alameda County Medical Center (Highland)
AH	Alameda Hospital
ABMC	Alta Bates Medical Center
CHO	Children's Hospital
EMC	Eden Medical Center
JMMC	John Muir Medical Center
KF	Kaiser Fremont
KO	Kaiser Oakland
KSL	Kaiser San Leandro
KWC	Kaiser Walnut Creek
SLH	San Leandro Hospital
SRH	St. Rose Hospital
SRR	San Ramon Regional
SMC	Summit Medical Center
SUH	Stanford University Hospital
VCMC	ValleyCare Medical Center
WTH	Washington Township Hospital

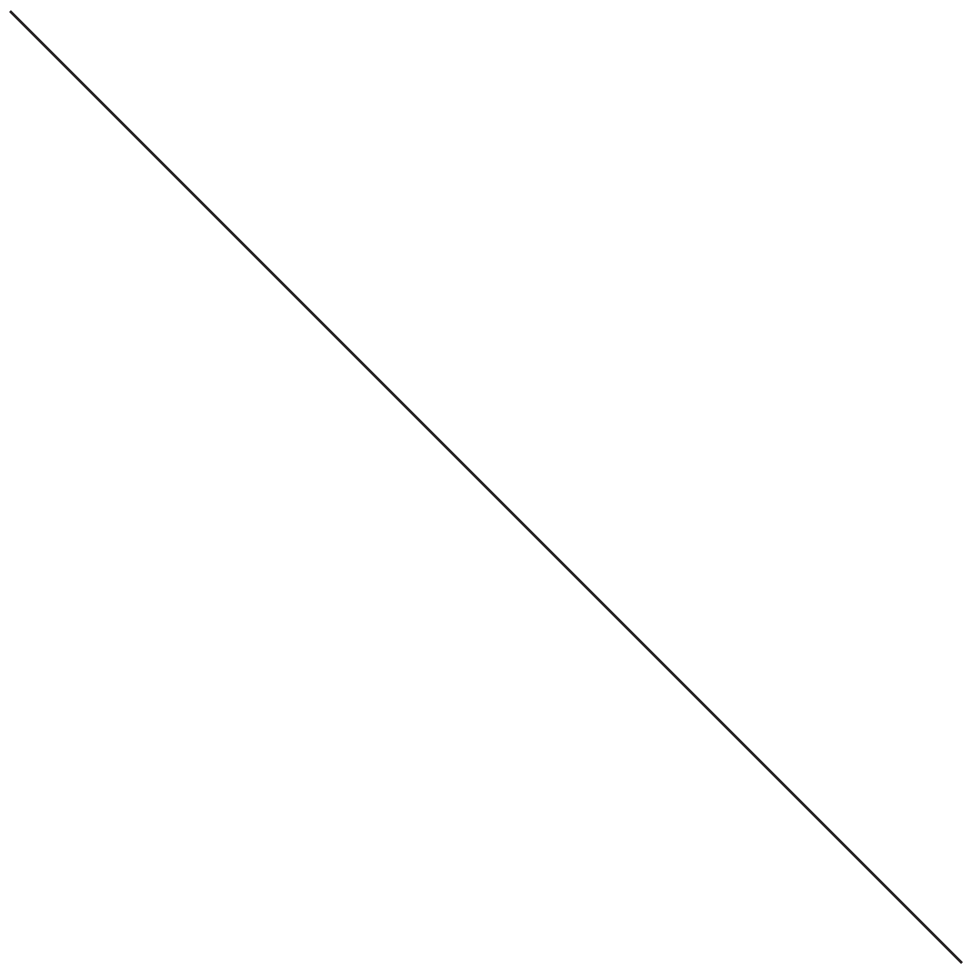
PROVIDER AGENCIES**Based on Firescope 3-Letter Designation**

ALA	Alameda Fire Department
ACF	Alameda County Fire Department
ALB	Albany Fire Department
BER	Berkeley Fire Department
CHP	California Highway Patrol
PRK	Camp Parks Fire Department
EBY	East Bay Regional Parks Fire Department
FRE	Fremont Fire Department
HAY	Hayward Fire Department
LAP	Livermore-Pleasanton Fire Department
OKL	Oakland Fire Department
PMP	Paramedics Plus
PIE	Piedmont Fire Department

SYMBOLS

\bar{c}	with
\bar{s}	without
\bar{a}	before
\bar{p}	after
$<$	less than
$>$	greater than
\leq	less than or equal to
\geq	greater than or equal to
♀	Female
♂	Male
\uparrow	Increase
\downarrow	Decrease
$=$	equal
\approx	approximately
$-$	negative
$+$	positive
$"$	inches
$'$	feet
$\#$	pounds
$^{\circ}$	degree
$@$	at
Δ	change
$\%$	percent
2°	Secondary to

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AN OVERVIEW OF PATIENT CARE POLICIES

1. **Treatment algorithms should be used as a guideline and are not intended as a substitute for sound medical judgment. Unusual patient presentations make it impossible to develop a protocol for every possible patient situation**
2. Patient care protocols are to be utilized by field personnel and Base Hospital Physicians. All procedures and/or medications must be within the scope of practice for field personnel and authorized in Alameda County policies
3. Where scope of practice allows, cardiovascular protocols are consistent with current American Heart Association, Emergency Cardiovascular Care guidelines
4. Medications/Procedures contained in **non-shaded boxes** may be performed without base contact, or may be called in to the base hospital for consultation with the Base Hospital Physician
5. Medications/Procedures contained in **shaded boxes require a Base Physician order**
6. **Base contact - Paramedics should contact the Base Physician for consultation:**
 - 6.1 At any point in a policy or treatment algorithm where base hospital contact is required and/or any time consultation would be in the patient's best medical interest
 - 6.2 For complicated patient presentations or in situations where a deviation from the standard protocol seems indicated
 - 6.3 For any patient attended by a physician at the scene. (See "Medical Personnel on the Scene - **page 108**")
 - 6.4 For out-of-protocol medication administration. Unusual circumstances may indicate special applications of medications carried by paramedics that are not covered in the treatment algorithms (e.g. glucagon for beta-blocker overdose)
 - 6.5 An EMT may make base contact for consultation with a physician for destination decisions, unusual patient presentations, and/or procedures within the EMT scope of practice. **An EMT may not make base contact or accept orders for the patient on behalf of a paramedic**
7. If direct communication with the Base Physician cannot be made or maintained, consider immediate transport and attempt base contact en route, if applicable
8. If a difference between policies exists, the policy with the most recent date prevails

ASSAULT | ABUSE | DOMESTIC VIOLENCE**•Routine Medical Care**

- Level of distress - Is patient a trauma victim? If yes, see trauma protocol
- Provide emotional support to the victim and the family
- Contact appropriate law enforcement agencies

1. **CHILD ABUSE / ELDER ABUSE / DOMESTIC VIOLENCE:** In any situation where the rescuer has reason to suspect Child or Elder abuse, or Domestic Violence:
 - 1.1 Immediately notify the appropriate law enforcement agency
 - 1.2 Reasonable effort will be made to transport the patient to a receiving hospital for evaluation. Immediately inform hospital staff of your suspicions
 - 1.3 Document all pertinent observations on the patient care report
 - 1.4 Immediately (or as soon as practical) contact the appropriate agency by telephone and give a verbal report
 - 1.5 A written report for child/elder abuse must be filed within 36 hours

► TO REPORT CHILD ABUSE:**Child Protective Services**

24100 Amador St.

Hayward, CA 94544

(510) 259-1800 - 24 hour number**► TO REPORT ELDER OR DEPENDENT ADULT ABUSE:**

→ By staff at a licensed health care facility contact:

Ombudsman (800) 231-4024

→ At home, or by a visitor or another resident at a licensed health care facility contact:

Adult Protective Services

6955 Foothill Blvd., Suite 300

Oakland, CA 94605

(866) 225-5277 - 24 hour number

After 5 pm M-F and weekends, an operator answers this line and can page a social worker (if needed.) If the patient was assaulted or has suffered serious neglect contact local law enforcement.



APS ONLINE REPORT

bit.ly/apsreport**► TO REPORT DOMESTIC VIOLENCE:**

Domestic violence is defined as the willful intimidation, physical assault, battery, sexual assault, and/or other abusive behavior as part of a systematic pattern of power and control perpetrated by one intimate partner against another.

→ Notify local law enforcement and receiving hospital staff

→ Perform DV Lethality Screen (see section 3)

2. **SEXUAL ASSAULT:** Patients should be transported to the appropriate facility for evaluation regardless of the hospital's diversion status
 - 2.1 **Adult patients:** Alameda County Medical Center or Washington Hospital
 - 2.2 **Pediatric patients:** Children's Hospital (≤14 y.o.)

ASSAULT | ABUSE | DOMESTIC VIOLENCE

3. DOMESTIC VIOLENCE (DV) LETHALITY SCREEN

- 3.1 Determine level of distress – is patient injured or complaining of any medical complaints?
- ▶ Assess and treat as appropriate
 - ▶ If patient c/o or presents with medical complaints, assess for signs & symptoms of possible strangulation
 - ▶ Attempt private audience with patient (maintaining regard for safety)

▶ If feasible, Conduct DV Lethality screen **AND** call Family Violence Law Center (FVLC) hotline and hand patient the phone. **(800) 947-8301**
(must be completed on electronic PCR to complete mandated reporting)

- ▶ If patient is NOT transported
 - If patient declines to speak with the FVLC advocate, provide patient with resource information and advise that she/he can call 24/7
 - Repeat basic safety planning tips that the advocate provides
- ▶ If patient is transported, be sure to inform receiving facility of lethality risk (if performed, as determined by screen) and DV advocacy steps taken

3.2 Questions used in the Domestic Violence Lethality Screen for First Responders

This screen is not to be used by any law enforcement agencies or other first responders unless trained in the proper use of the Lethality Assessment Program protocol

- A “yes” response to any of Questions 1–3 automatically triggers the protocol referral
1. Has he/she ever used a weapon against you or threatened you with a weapon?
 2. Has he/she threatened to kill you or your children?
 3. Do you think he/she might try to kill you?
- Negative responses to Questions 1–3, but positive responses to at least four of Questions 4–11, trigger the protocol referral
4. Does he/she have a gun or can he get one easily?
 5. Has he/she ever tried to choke you?
 6. Is he/she violently or constantly jealous or does he/she control most of your daily activities?
 7. Have you left him/her or separated after living together or being married?
 8. Is he/she unemployed?
 9. Has he/she tried to kill himself?
 10. Do you have a child that he/she knows is not his/hers?
 11. Does he/she follow or spy on you or leave threatening messages?

Any first responder may trigger the protocol referral if not already triggered above, as a result of the victim’s response to the below question, or whenever the first responder believes the victim is in a potentially lethal situation

- Is there anything else that worries you about your safety? (If “yes”) What worries you?

BURN PATIENT CARE

- **Routine Medical Care**
- Rescuer safety
- Assume airway/respiratory involvement
- Stop the burning process - **DO NOT USE COLD PACKS**
- Assess for associated trauma

A. BASIC MANAGEMENT**1. Rule out airway damage**

- 1.1 Assess for inhalation injury
- 1.2 High flow oxygen is critical
- 1.3 Be prepared for intubation

2. Assess and expose

- 2.1 Assess ABC's
- 2.2 Perform a mini neurological exam - level of consciousness
- 2.3 Expose and examine the patient for other areas of burn
- 2.4 Remove jewelry, but do not remove stuck clothing

3. Start IV's

- 3.1 Two large bore IV's (for major burns)

4. Give IV fluids – See ALCO PRE-HOSPITAL FLUID FORMULA → Fluid resuscitation is particularly important!**5. Document severity and treat the pain**

- 5.1 Estimate the severity of the burns using the ABA Classification or the "Rule of 9's"
- 5.2 **Treat pain.** Pain management should be considered mandatory for moderate to severe burns. See Pain Management Policies – Adult (**page 43**) and Pediatric (**page 68**)

6. Protect against hypothermia and infection - dress burns

- 6.1 Dry, sterile dressing for any burn involving >10% TBSA (Total Body Surface Area)
- 6.2 Keep patient warm to prevent hypothermia (use sheets or blankets)
- 6.3 Moist, sterile dressings are OK for small burns (<10% TBSA)

7. Elevate burned body parts - 30°**8. Address psychological needs**

- 8.1 Be honest and compassionate
- 8.2 Consider anxiolytics – **Contact Base Physician for midazolam**

9. Maintain body temperature and observe for hypothermia**B. ELECTRICAL BURNS**

1. Turn off the power source if patient is still attached
2. See first responder defibrillation protocol if patient is unconscious and pulseless

C. TAR BURNS

1. Do not attempt to remove the tar
2. Cool with water
3. **Maintain body temperature and observe for hypothermia**

BURN PATIENT CARE

D. CHEMICAL BURNS

1. Remove clothing
2. **Liquid chemicals:**
→ Flush **immediately** with copious amounts of tepid water for 10 - 15 minutes
3. **Dry chemicals:**
→ Brush off as much as possible, then flush with copious amount of tepid water for 10 - 15 minutes
4. Identify chemical
5. Assess for associated respiratory burns

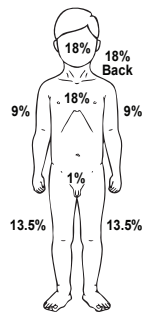
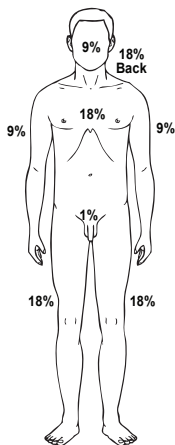
ALCO PRE-HOSPITAL FLUID FORMULA

$$\frac{\text{weight in kg} \times \text{TBSA} (\%)}{4} = \text{rate (mL/HR)}$$

This formula is consistent with the Parkland Formula for determining rate of fluid administration for the first 8 hours after a major burn.

PARKLAND FORMULA

*Fluid in first 24 hours = (4 x weight(kg)) x % TBSA
Give half over the first 8 hours*



BURN PATIENT CRITERIA

1. **INTRODUCTION** -The intent of this policy is to transport patients with critical burns, who have a manageable airway, directly to a facility that is staffed and equipped to care for the medical needs of the patient, bypassing other receiving facilities. Minor to moderate burn patients will be transported to the closest, most appropriate receiving hospital.
2. **BURN PATIENT CRITERIA** (from the American Burn Association – Burn Unit Referral Criteria)
 - 2.1 Partial thickness burns greater than 10% total body surface area
 - 2.2 Moderate to severe burns that involve the face, hands, feet, genitalia, perineum, or major joints
 - 2.3 Full thickness burns in any age group
 - 2.4 Electrical burns, including lightning injury
 - 2.5 Chemical burns
 - 2.6 Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
3. **DESTINATION**
 - 3.1 **Adult and Pediatric patients** who meet burn patient criteria 2.1-2.6 may be transported directly to an out-of-county burn center (see #5 below).
 - 3.2 Exceptions:
 - 3.2.1 **Potentially unmanageable airway** - (e.g. - soot in the mouth and/or nose, inhalation injury, etc.) transport to the closest trauma center.
 - 3.2.2 **Unmanageable Airway** - The patient requires intubation, and the paramedic is unable to intubate, and an adequate airway cannot be maintained with B.V.M. device, transport to closest basic E.D.
 - 3.2.3 **Patient meets Critical Trauma Patient Criteria** - "Physiologic" or "Anatomic"
- transport to the closest most appropriate designated trauma center
4. **BASE CONTACT** - Base Physician contact is required:
 - 4.1 If the patient meets "Burn Patient Criteria" (2.1 - 2.6) but the paramedic is requesting transport to a basic ED
 - 4.2 During an MCI if more than 2 critical burn patients are being transported to a burn center to verify bed availability
 - 4.3 If the patient requires medical treatment not covered in policy
 - 4.4 Any time patient care would benefit from consultation with the Base Physician

BURN PATIENT CRITERIA

5. OUT-OF-COUNTY TRANSPORT

- 5.1 Transporting medic ***must*** first contact out-of-county hospital to confirm bed availability. This can be done through the appropriate dispatch center or via land-line from the field
- 5.2 Contact the Base Physician if medical consultation is needed
- 5.3 Consider EMS Aircraft transport for land transport times greater than 45 minutes
- 5.4 Give a brief report to the receiving facility including ETA

Out-Of County Burn Centers:

FACILITY	TRAUMA	HELIPAD	LOCATION	PHONE #
UC Davis Medical Center	YES	YES	2315 Stockton Blvd., Sacramento	(916) 734-3636
Santa Clara Valley Medical Center	YES	YES	751 S. Bascom Ave., San Jose	(408) 885-6666
St. Francis Memorial Hospital	NO	NO	900 Hyde Street, San Francisco	(415) 353-6255

CARDIOPULMONARY RESUSCITATION (CPR)

RECOMMENDATIONS			
COMPONENT	ADULTS	CHILDREN	INFANTS*
RECOGNITION	Unresponsive (for all ages)		
	No breathing or no normal breathing (ie, only gasping)	No breathing or only gasping	
	No pulse palpated within 10 seconds for all ages (HCP only)		
CPR SEQUENCE	C-A-B		
COMPRESSION RATE	At least 100/min		
CHEST DEPTH	At least 2 inches (5 cm)	At least 1/3 AP diameter About 2 inches (5 cm)	At least 1/3 AP diameter About 1 1/2 inches (4 cm)
CHEST WALL RECOIL	Allow complete recoil between compressions HCPs rotate compressors every 2 minutes		
COMPRESSION INTERRUPTIONS	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds		
AIRWAY	Head tilt–chin lift (HCP suspected trauma: jaw thrust)		
COMPRESSION-TO-VENTILATION RATIO (UNTIL ADVANCED AIRWAY PLACED)	30:2 1 or 2 rescuers	30:2 Single rescuer 15:2 2 HCP rescuers	
VENTILATIONS WITH ADVANCED AIRWAY	1 breath every 6-8 seconds (8-10 breaths/min) Asynchronous with chest compressions About 1 second per breath Visible chest rise		
DEFIBRILLATION	Attach and use AED/ Defibrillator as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.		

Abbreviations: AED, automated external defibrillator; AP, anterior-posterior; CPR, cardiopulmonary resuscitation; HCP, healthcare provider

*Excluding the newly born, in whom the etiology of an arrest is nearly always asphyxial

CARDIOPULMONARY RESUSCITATION (CPR)

ADDITIONAL INFORMATION:

1. Minimize interruptions in chest compressions
2. Use a mechanical compression device whenever possible
 - 2.1 Refer to manufacturer's instructions for specific information regarding mechanical CPR device
 - 2.2 Upon ROSC, you must discontinue mechanical CPR device **AND** ResQPOD®
3. Defer advanced airway insertion rather than interrupt chest compressions. Do not interrupt chest compressions to place an advanced airway. If after 2 minutes of continuous chest compressions with BVM support an immediate endotracheal airway can not be obtained, consider use of supraglottic airway
4. Emphasis is on high quality, uninterrupted CPR - "push hard and fast" – allow for complete recoil
5. Two minutes CPR between drug doses
6. Once an advanced airway is established, give continuous chest compression without pauses for breaths. Avoid hyperventilation
7. Check rhythm q 2 minutes
8. Defibrillation: Device specific. While both monophasic and biphasic wave form defibrillators are acceptable, biphasic is preferred. Energy level is dependant upon the manufacturer
9. **Newborn:** Unresponsive, not breathing but has a pulse: 40-60 ventilations/minute. Compression/ventilation ratio: 3:1 (90 compressions : 30 ventilations per minute)
10. Unresolved or persistent arrest, look for and treat:

→ Hypovolemia	→ Toxins
→ Hypoxia or ventilation problem	→ Tamponade (cardiac)
→ Hydrogen Ion (acidosis)	→ Tension pneumothorax
→ Hypo/Hyperkalemia	→ Thrombosis (coronary/pulmonary)
→ Hypoglycemia	→ Trauma (hypovolemia or ICP)
→ Hypothermia	

11. *If patient regains ROSC, refer to Return of Spontaneous Circulation - ROSC (see page 48)*

MECHANICAL CPR DEVICES:

12. **PURPOSE:** Effective and uninterrupted compressions are important for survival; AHA/ERC Guidelines for CPR (Cardio-Pulmonary Resuscitation) 2005 emphasize the significance of compressions to provide critical blood flow to vital organs and in the end to increase the chances of a successful survival. Mechanical CPR allows for consistent, quality CPR that enables caregivers to focus on other aspects of resuscitation while maximizing effectiveness of therapeutic interventions
13. **Indications:**
 - ▶ Use mechanical CPR devices wherever manual CPR is indicated
 - ▶ IMPORTANT NOTE: If ROSC is obtained, mechanical CPR device must be discontinued
14. **Contraindications:**
 - ▶ Refer to manufacturer's documentation
15. **Approved Devices:**
 - ▶ Both the AutoPulse® and LUCAS™ devices are approved for use in Alameda County. You are required to be trained by your agency in the use of the mechanical CPR device your agency employs

CARDIOPULMONARY RESUSCITATION (CPR)**PIT CREW ROLES:**

The roles and responsibilities detailed below are guidelines. There may be fewer personnel on hand for these roles. It is important that there is always a Pit Crew Leader (similar to an Incident Commander on a scene of any MCI). This concept is known as 'The Pit Crew' concept and is the standard of care for resuscitations in Alameda County. The roles are as follows:

Position and Responsibilities**Pit Crew Leader:**

- Overall team leader
- Assigns roles
- Monitors time intervals (2 min. CPR, drug intervals, etc.)
- Assures quality of CPR
- Assures use of proper equipment and adjuncts (e.g., EtCO₂)
- Serves as scribe (field notes)
- Supervises and assigns crowd control
- Supervises DNR/POLST issues
- Performs NO patient care
- Responsible for overall conduct of resuscitation

Airway Leader:

- Performs appropriate airway techniques, procedures
- Supervises airway decisions
- Uses confirmatory adjuncts
- Completes PCR at hospital (if appropriate) (with med leader)
- Communicates with law/family as needed
- Defibrillates if medication leader not available
- Inserts advanced airway (see [page 119](#)) * (**NOTE:** Do not interrupt chest compressions to place an advanced airway)

Medication Leader:

- Defibrillates
- Initiates IV or IO
- Administers (or supervises) medications
- Tracks and notifies team of all monitor changes
- Completes PCR (with airway leader)
- Communicates with family/law as needed
- Terminates resuscitative efforts (with team leader)
- Sets up mechanical CPR device* (see [page 10](#))
- Monitors mechanical CPR device* (see [page 10](#))

CPR Chief:

- Supervises and performs CPR (with team leader)
- Assists with equipment/medication setup
- Performs communications

Team Assistant:

- Assists with CPR
- Assists with communications
- Assists with setup

Team Leader/Airway Assistant (optional)

- Serves as assistant to team leader
- Assists airway leader

* Indicates vital task to be completed

CRUSH INJURY SYNDROME**•Routine Medical Care**

- Trauma Patient Care (see [page 24](#))

•**Note:** Hypovolemia and hyperkalemia may occur, particularly with extended entrapment (usually > 4 hours). Once compression is released cellular toxins and potassium may be released into the body. Administering sodium bicarbonate alkalizes the urine, controls hyperkalemia and acidosis

→ Crush Injury syndrome

Definition: Crush injury syndrome is the name given to the systemic manifestations of muscle crush injury and cell death. Crush injury syndrome should be suspected in patients with certain patterns of injury. Most patients in whom the syndrome develops have an extensive area of involvement such as a lower extremity and/or pelvis. It requires more involvement than just one hand or foot. The syndrome may develop after one hour in a severe crush situation, but usually requires 4 – 6 hours of compression for the processes that cause crush injury syndrome to occur.

Immediate care of crush injury patient (prior to release)

- Cardiac Monitor
- 12 Lead EKG
- Albuterol 10-20 mg via nebulizer
- Fluid resuscitation 20 ml/kg NS
- Pain Management – see pain management policy
Adult: [page 43](#)
Pediatric: [page 68](#)
Use caution if other major traumatic injuries are suspected

Care of crush injury patient after release of compression

- **Calcium Chloride** 1 gm slow IVP (over 2 min.) *Note: flush IV tubing after administering CaCl to avoid precipitation*
- **Sodium Bicarbonate** 1 mEq/kg IVP over 60 seconds

Note: make sure to have a second IV line as other medications may not be compatible.

Base Physician order

Note: entrapment more than 4 hours and/ or abnormal EKG findings – peaked “T” wave, absent “P” waves and widened “QRS”

Hyperkalemia suspected? (see note)

←Yes

No

Reassess as needed

EXTREMITY INJURY

1. ASSESSMENT:

- 1.1 Routine Medical Care
- 1.2 Document mechanism of injury
- 1.3 Document past medical history including history of previous injuries
- 1.4 Check for deformity, open wounds, swelling, shortening, and/or rotation
- 1.5 Document range of motion, pulses, sensation, and color of the extremity
- 1.6 Assess severity of pain (1-10 scale)
- 1.7 Assess for other associated injuries

2. GENERAL CARE: (all patients)

- 2.1 Control any external bleeding with direct pressure
- 2.2 Elevate and apply cold packs
- 2.3 Splint injured extremity. Hand injuries should be positioned in the "safe position"
- 2.4 Cover open wounds with sterile dressings
- 2.5 Provide Pain control – see Pain Management **page 43** (Adult) or **page 68** (Pediatric)
- 2.6 Remove rings or other possibly constricting items



Position of function

3. FRACTURE/DISLOCATION:

- 3.1 If the extremity is pulseless, attempt to place it in normal anatomic position by gentle in-line traction
- 3.2 If repositioning does not restore circulation, do not manipulate further, transport immediately.
- 3.3 Start IV NS in uninjured extremity

4. AMPUTATION:

- 4.1 Place amputated part in dry, sterile dressing, place in sealed plastic bag, and place on top of ice or cold packs (do not place part directly in ice - prevent frostbite)
- 4.2 Start IV of NS in uninjured extremity
- 4.3 If hypotensive (SBP < 90 or signs of poor perfusion), give fluid challenge (500 mL NS, reassess and repeat if indicated)

5. HIGH-PRESSURE INJECTION INJURY:

- 5.1 Compressed air injuries, although they may initially look innocuous require immediate transport, especially if paint, paint thinner or grease is involved. These wounds must be debrided in the operating room as soon as possible to prevent further damage and/or amputation

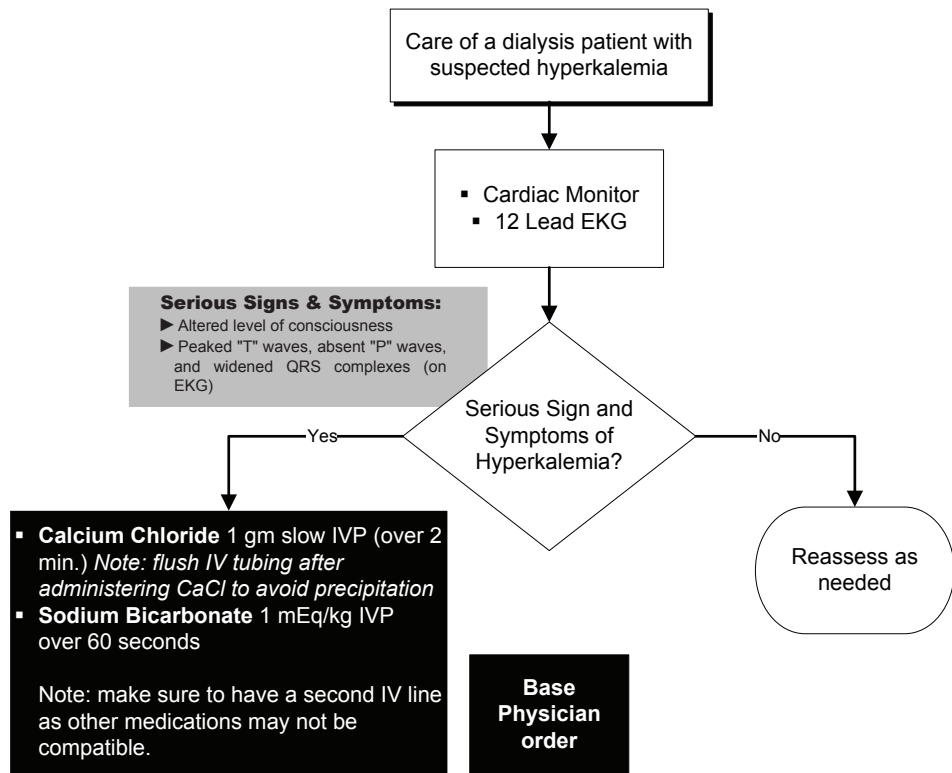
6. SNAKE BITE:

- 6.1 Gently wash the area with cool, wet cloth
- 6.2 Avoid constricting bands
- 6.3 Do not elevate

HYPERKALEMIA

→ Hyperkalemia in the context of dialysis

Definition: Hyperkalemia is common in patients with end-stage renal disease, and may result in serious electrocardiographic abnormalities. Dialysis is the definitive treatment of hyperkalemia in these patients. EKG findings are critical to proper treatment decisions. Findings such as peaked "T" waves and absent "P" waves as well as widening QRS complexes are signs that a renal patient in the context of dialysis is suffering from hyperkalemia. Renal patients who are taking ACE inhibitors, ARBs (angiotensin receptor blockers), NSAIDs, beta blockers and/or sodium channel blockers have an increased risk of hyperkalemia in the context of dialysis. Obtain a thorough history paying special attention to the patient's medications. In the periarrest dialysis patient, correcting hyperkalemia can be vital in the patient's overall survival.



HYPERTHERMIA / HEAT ILLNESS**•Routine Medical Care**

- Protect patient from environment.
- If the patient is in extremis, begin treatment prior to secondary survey.
- Consider: the environment, patient age, and pre-existing conditions

1. SIGNS AND SYMPTOMS OF A HEAT EMERGENCY

- Weakness or exhaustion
- Dizziness
- Headache
- Sweating may or may not be present
- Fainting or feeling faint
- Rapid heart rate
- Muscle cramps
- Altered mental status (coma, seizures, delirium)

2. PREEXISTING CONDITIONS THAT CAN CONTRIBUTE TO A HEAT EMERGENCY:

- | | |
|--|--|
| ▶ Psychiatric disorder (both because of the medications taken and perhaps the patient's poor judgement) | ▶ Fever |
| ▶ Heart disease | ▶ Fatigue |
| ▶ Diabetes | ▶ Obesity |
| ▶ Alcohol | ▶ Dehydration (either decreased fluid intake or sweating) |
| | ▶ Medications |

3. TREATMENT:**3.1 If the patient is conscious:**

- 3.1.1 Remove patient from hot environment
- 3.1.2 Loosen or remove clothing
- 3.1.3 Place in supine position with legs elevated
- 3.1.4 Administer O₂
- 3.1.5 Fan the patient
- 3.1.6 Water may be given if patient is alert, has a gag reflex, and is not nauseated

3.2 If altered mental status is present: (see above)

- 3.2.1 Place on left side and monitor airway
- 3.2.2 Wet the skin and fan aggressively
- 3.2.3 Apply cold packs to the axillae, groin and neck (if available)
- 3.2.4 Administer IV fluid challenge (250-500 mL NS)
- 3.2.5 Transport immediately

HYPOTHERMIA**•Routine Medical Care**

- Protect the patient from the environment
- If patient is in extremis, begin treatment prior to secondary survey
- Check skin temperature

1. **INTRODUCTION:** Hypothermia is a reduced core temperature where the cold challenge overwhelms heat production and heat retention factors. The rate of onset can be:

- 1.1 **Acute** (minutes to hours) e.g. immersion in cold water
- 1.2 **Sub-acute** (hours)
- 1.3 **Chronic** (often over several days) Homeless, drug users, alcoholics, and compromised individuals are at high risk. Elderly persons and those taking certain medicines are also at risk. Injured and seriously ill individuals can become hypothermic quickly

→ **Note:** a hypothermic critical trauma patient has a very high mortality and morbidity rate!

2. **SIGNS AND SYMPTOMS OF HYPOTHERMIA:**

- 2.1 Altered mental status including: confusion, mood changes, and speech difficulties. The patient's judgment may be affecting causing him/her to exhibit inappropriate behaviors such as removing clothing
- 2.2 Decreased motor function, poor coordination
- 2.3 Diminished sense of cold sensation
- 2.4 Pupils that respond slowly or sluggishly

3. **TREATMENT:**

3.1 **General:**

- 3.1.1 Remove the patient from the cold environment and prevent further heat loss
- 3.1.2 Remove wet clothing, begin rewarming - cover with blankets, turn up the heat in the ambulance
- 3.1.3 Do not let the patient walk or exert him/herself
- 3.1.4 Administer O₂ - titrate to 94-99% SpO₂ (warmed and humidified is preferred)
- 3.1.5 Closely monitor cardiac rhythm
- 3.1.6 Check blood glucose levels. Administer glucose as needed (see ALOC [page 35](#) – adult or [page 64](#) - pediatric)
- 3.1.7 Transport immediately

3.2 **BLS:**

- 3.2.1 CPR should be initiated if there is any doubt about pulselessness
- 3.2.2 Severely hypothermic patients may appear dead. If you find an unresponsive, hypothermic patient, take time (30-45 seconds) to try and find a pulse before beginning CPR. Chest compressions should be avoided if any signs of life are present
- 3.2.3 If VT or VF is present, defibrillation should be attempted. If one shock is unsuccessful, subsequent shocks should be deferred

HYPOTHERMIA

3.3 **ALS:**

- 3.3.1 Give fluid challenge with heated N.S. if possible
- 3.3.2 Do not delay urgent procedures (IV lines and intubation) but perform them "gently." The severely cold heart is sensitive to a variety of stimuli, and fatal dysrhythmias can be caused by forceful treatment efforts
- 3.3.3 Defer ACLS medications until rewarming occurs (> 30° C / 86° F)

INFECTION CONTROL AND SCREENING CRITERIA

1. **RATIONALE:** The following information is designed to protect EMS personnel during transport
 - 1.1 Follow standard and universal precautions (gloves, P100 and/or N-95 mask, eye protection) when transporting symptomatic patients. Use a gown if splash is possible
 - 1.2 If any influenza-like illness is in the community, place a procedure or surgical mask on the patient to contain droplets. If this is not possible (e.g.: a mask would further compromise respiratory status or too difficult for the patient to wear), have the patient cover his/her mouth/nose with a tissue when coughing or sneezing or use the most practical alternative to contain respiratory secretions
 - 1.3 Unless medically necessary to support life, avoid aerosol generating procedures (e.g., mechanical ventilation). Metered dose inhalers with spacers may be used to deliver albuterol and/or ipratropium if available. If you are performing an aerosol generating procedure on a person with a suspected infectious disease, you are required to wear a **P-100 respirator** during the procedure(s) and during transport
 - 1.4 Optimize the vehicle's ventilation to increase the volume of air exchange during transport
 - 1.5 Follow standard operating procedures for routine cleaning of the emergency vehicle and reusable patient care equipment
 - 1.6 **Special considerations for possible novel influenza A: If patient has influenza-like signs and symptoms with a documented fever, notify receiving facility**

SUSPECTED SWINE (H1N1) INFLUENZA A

Close contact to confirmed/suspect case(s) AND one or more of the following:

- ▶ Attendance at a school, event or workplace that was closed due to H1N1 activity
- ▶ Documented fever > 38° C (100.4° F)
- ▶ Acute febrile respiratory illness
- ▶ Nasal congestion
- ▶ Rhinorrhea
- ▶ Sore throat or cough

OB/GYN EMERGENCIES**•Routine Medical Care**

- Level of distress:
 - Estimate blood loss (if any)
 - Is the patient in shock? If yes, Go to **page 54** "Shock" protocol
- Consider immediate transport or prepare for delivery
- Determine stage (trimester) of pregnancy

1. **VAGINAL BLEEDING** (Abnormal bleeding between menses, during pregnancy, postpartum or post operative)
 - 1.1 If postpartum, gently massage the fundus to decrease bleeding
 - 1.2 Monitor vital signs frequently
2. **SPONTANEOUS ABORTION**
 - 2.1 If fetus is > 20 weeks or 500 grams, see neonatal resuscitation protocol (**page 67**). If non-viable, save and transport any tissue or fetal remains
 - 2.2 Have patient place a sanitary napkin or bulky dressing material over vaginal opening - **Do not pack the vagina with anything**
3. **SEVERE PRE-ECLAMPSIA / ECLAMPSIA**
 - 3.1 Attempt to maintain a quiet environment
 - 3.2 Monitor vital signs frequently
 - 3.3 Observe for seizures, hypertension or coma. If seizures occur, go to the appropriate seizure policy
4. **BREECH DELIVERY**
 - 4.1 Allow delivery to proceed passively until the baby's waist appears. Gently rotate the baby to a face down position and continue with the delivery
 - 4.2 If the head does not readily deliver insert a gloved hand into the vagina to relieve pressure on the cord and create an air passage for the infant. Transport. Monitor vital signs and infant condition frequently
5. **PROLAPSED CORD**
 - 5.1 Place the mother supine position with head lower than hips
 - 5.2 Insert a gloved hand into the vagina and gently push the presenting part (e.g.: the neonate's head or shoulder off the cord. **DO NOT TUG ON THE CORD**
 - 5.3 Place fingers on each side of the neonate's nose and mouth, split fingers into a "V" to create an opening. **Do not** attempt to re-position the cord. **Do not** remove your hand. Cover the exposed cord with saline soaked gauze
6. **LIMB PRESENTATION**
 - 6.1 Defined as the presentation of a single limb - arm or leg
 - 6.2 It is unlikely that the baby will deliver and immediate transport should be initiated
 - 6.3 Place the mother supine position with head lower than hips

SCOPE OF PRACTICE - LOCAL OPTIONAL

1. Local Optional Scope of Practice – requires authorization from State EMS Authority**1.1 ALS PERSONNEL:**

- 1.1.1 Amiodarone
- 1.1.2 Intraosseous infusion
- 1.1.3 Pediatric intubation
- 1.1.4 Transcutaneous pacing
- 1.1.5 Nerve agent exposure drugs:
 - Autoinjectors - for self-administration
 - Pralidoxime chloride (2-PAM) – (patient administration, HazMat trained paramedics only)
 - Atropine – (patient administration, HazMat trained paramedics only)
- 1.1.6 Sodium Thiosulfate
- 1.1.7 Zofran

2. Approved for use in Alameda County – requires additional training**2.1 ALS PERSONNEL:**

- 2.1.1 Pulse-oximetry
- 2.1.2 Length-based resuscitation tape
- 2.1.3 Meconium aspirator
- 2.1.4 End-tidal CO₂ detection (colorimetric or capnographic technologies)
- 2.1.5 12-lead EKG – optional for first responder agencies
- 2.1.6 King-LTD supraglottic airway device
- 2.1.7 Continuous Positive Airway Pressure (CPAP)
- 2.1.8 Intranasal naloxone and midazolam
- 2.1.9 Intraosseous Infusion – Adult and Pediatric

2.2 BLS PERSONNEL: (see “Advanced Airway Management” [page 119](#))

- 2.2.1 King-LTD supraglottic airway device - optional
- 2.2.2 If using King-LTD:
 - End-tidal CO₂ detection (colorimetric or capnographic technologies)

- 3. Field personnel will not perform any skill that is not a part of his/her scope of practice or has not been authorized by the Alameda County Health Officer and/or EMS Medical Director
- 4. During an inter-facility transfer or during a mutual aid response into another jurisdiction, a paramedic may utilize the scope of practice for which he/she is trained and accredited
- 5. Paramedics will not draw blood unless approved in advance by the EMS Medical Director
- 6. Field personnel are prohibited from carrying any medical equipment or medications that have not been authorized for prehospital use by the Alameda County EMS Medical Director

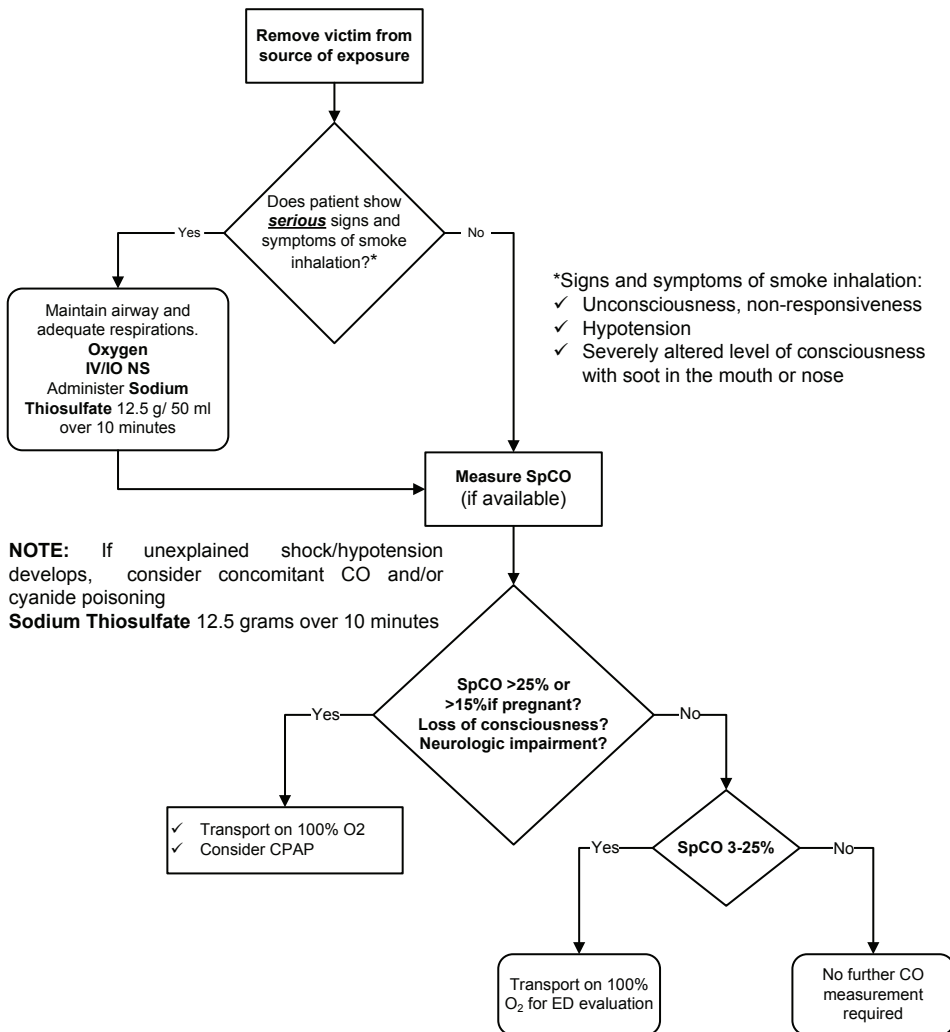
SMOKE INHALATION / CO MONITORING**•Routine Medical Care****•Symptoms of Carbon Monoxide (CO) poisoning:**

→ Initial symptoms are similar to the flu with no fever and can include dizziness, severe headaches, nausea, sleepiness, fatigue/weakness and disorientation/confusion

•Note: Carbon Monoxide is a colorless, odorless and tasteless poisonous gas that can be fatal when inhaled. CO inhibits the blood's capacity to carry oxygen. CO can be produced when burning any fuel. CO is a by-product of incomplete combustion. Suspect CO in the presence of any fire. **SpCO = carboxyhemoglobin**

1. Pulse oximetry values may be unreliable in SI patients
2. Cyanide and/or the combination of cyanide and carbon monoxide may be responsible for the majority of SI deaths
3. SI should be particularly suspected in patients rescued from closed-space structure fires
4. Sodium thiosulfate should not be given prophylactically
5. Remove victim from the source of exposure
 - 5.1 Completely remove victim's clothing prior to transport
 - 5.2 Perform Spinal Motion Restriction (SMR) if indicated
 - 5.3 Evaluate patient for facial burns, hoarseness, black sputum, and soot in the nose or mouth
 - 5.4 Monitor SpCO (if available)
 - 5.5 Assess and treat for traumatic and/or thermal injuries (go to appropriate policy)
6. Administer 100% oxygen via NRB
 - 6.1 Control airway early. Perform endotracheal intubation / King LTD placement if indicated
 - 6.2 Use BVM with airway adjuncts
 - 6.3 If bronchospasm present, go to appropriate respiratory policy
7. Provide cardiopulmonary support (go to appropriate cardiac arrest policy, if indicated)
8. Initiate IV NS. Consider fluid bolus 250-500 ml
- 9. ONLY if the patient exhibits serious signs and symptoms of smoke inhalation (SI)**
 - 9.1 Administer sodium thiosulfate IV slowly over 10 minutes
 - 9.1.1 (**Adults:** 12.5 g/50 ml | **Children:** 0.4 g/kg - to a maximum 12.5 g) to SI patients with any of the following signs of cyanide poisoning:
 - Unconsciousness, non-responsiveness
 - Hypotension
 - Severely altered level of consciousness **with** soot in the mouth or nose
10. Treatment of cyanide poisoning must include immediate attention to airway patency, adequacy of oxygenation and hydration, cardiovascular support, and management of any seizure activity
11. If seizures present, go to appropriate seizure policy
12. If cardiac arrhythmia present, go to appropriate arrhythmia policy
13. Ensure rapid transport

SMOKE INHALATION / CO MONITORING



TRANSPORT GUIDELINES

Note: In addition, see "Trauma Patient Criteria" [page 25](#), "Burn Patient Criteria" [page 7](#), "Acute Stroke" [page 32](#), "Chest Pain/MI" [page 39](#), and "12-lead EKG" [page 128](#) for specific transport instructions.

1. **GENERAL TRANSPORT GUIDELINES:** All patients who wish to be transported by ambulance to the hospital should be transported
 - 1.1 **Patient Destination:**
 - 1.1.1 Patients should be transported to the closest hospital appropriate for their medical needs within a reasonable transport time or as specified in the patient care protocols
 - 1.1.2 In general, patients should be transported to the hospital choice of the patient and/or family, if allowed by the protocols, and if there is no compelling reason to take them somewhere else
 - 1.1.3 Paramedics should contact the Base Physician for any questions regarding transport destinations. If the Base Hospital is contacted for medical direction, the ultimate responsibility for determining patient destination will rest with the Base Hospital Physician
2. **TRANSPORT DECISIONS:** Transport decision should be based on paramedic judgment. Paramedics should take the following into consideration before transport:
 - 2.1 Patient condition or ability of field personnel to provide field stabilization and/or emergency intervention. **TRANSPORT OF ACUTE PATIENTS:** Any patient with an acute, unstable appearance and/or severe symptoms may be transported Code 3 (lights and siren). **Code 3 transport (lights and siren) has significant, inherent risks for the public and the patient. If Code 3 transport of an acute patient does NOT significantly decrease transport time to the hospital, the acute patient should be transported Code 2 (no lights and siren). The hospital must be notified of the patient's Code 3 acuity even if transported Code 2**
 - 2.2 Scene assessment and/or potential extrication difficulties
 - 2.3 ETA to the destination facility including traffic delays
 - 2.4 Instructions within specific algorithms to "initiate early transport"
 - 2.5 Hospital diversion status - See "Ambulance Diversion" [page v](#)
 - 2.6 Recommendation from a physician familiar with the patient's current condition, or the patient's regular source of hospitalization/healthcare. For physician on-scene - see [page 108](#)
 - 2.7 Hospitals with specialized services (e.g.: trauma center, burn center, STEMI Center (SRC), etc.)
3. **TRANSFER OF CARE:** Any paramedic level personnel may transfer care of a BLS patient to any EMT-I as long as the care required by the patient is within the scope of practice of an EMT-I, and the patient has no injury or illness that requires or is likely to require monitoring or treatment by an ALS provider
4. **RECEIVING HOSPITAL NOTIFICATION:** Transport units should contact the receiving hospital prior to arrival with the patient's chief complaint, a summary of treatment given and the ETA.
5. **OUT OF COUNTY TRANSPORTS:**
 - 5.1 Patients may be transported to hospitals outside Alameda County if the out-of-county hospital is the closest most appropriate hospital for the medical needs of the patient. Base contact is not required but should be attempted if there are any questions regarding the transport
 - 5.2 Contact the receiving facility by radio or landline. If unable, contact the appropriate dispatch agency to relay information to the receiving facility. This will provide information on bed availability. Do not transport patient to out-of-county hospital without obtaining prior authorization

TRAUMA PATIENT CARE

- **Routine Medical Care**
- **Transport Decision** - Determine need for rapid intervention/transport
- **Critical Interventions** - Done prior to and/or during transport
 - Secure airway
 - Assure adequate breathing, i.e., occlusive dressing, pleural decompression
 - Control life-threatening bleeding (*use a tourniquet* if extremity bleeding is uncontrollable see [page 130](#))
- **Transport**
- **If traumatic arrest is suspected do not use ACLS medications**

STABILIZE THE PATIENT

- ▶ Control major external hemorrhage (see [page 130](#))
- ▶ Control the Airway - Consider **endotracheal intubation or supraglottic airway device if indicated** (See below for patients with closed head trauma)
- ▶ Determine patient severity (see "Trauma Patient Criteria" - see [page 25](#)):

Meets Physiologic and/or Anatomic Factors	Meets Mechanism of Injury Criteria
<ul style="list-style-type: none"> → Transport to the Trauma Center In accordance with Transport Guidelines (page 22). → ADULT - Establish one (1) large bore IV/IO with Normal Saline (NS) or Saline Lock (SL). Establish 2nd IV if appropriate. → PEDIATRIC- Establish one (1) appropriate large bore IV/IO with Normal Saline (NS) or Saline Lock (SL). 	<ul style="list-style-type: none"> → Transport to the Trauma Center code 2. → ADULT/PEDIATRIC - Establish one (1) large bore IV/IO with Normal Saline (NS) or Saline Lock (SL).
Do NOT delay transport to establish IV/IO access See "Trauma Patient Criteria" (page 25) for additional judgment decisions on code 2 transports	

- ▶ Consider spinal motion restriction (SMR) for blunt trauma (see [page 140](#))
- ▶ Administer **Oxygen** - Titrate SpO₂ to 94-99%
- ▶ **IV fluid resuscitation:**
 - SBP < 90 mmHg, NS IV/IO 250 – 500ml bolus
 - > 90 mmHg, IV/IO TKO or Saline Lock
 - Reassess BP q 5 minutes
- ▶ Consider **TXA** for patients with signs of shock or uncontrolled bleeding (see [page 28](#))
- ▶ **Care of the patient with a closed head injury** (GCS < 8):
 - **Advanced airway (ETT or King-LTD)**
 - End-tidal CO₂ should be between 30-35 mmHg
 - Track respirations or ventilate to a rate of approx 12 times/minute with 100% O₂ (**AVOID HYPERVENTILATION**)
 - **IV/IO NS** in 500 mL increments to *maintain mean arterial pressure (MAP) of at least 80 mmHg*. Reassess BP q 5 minutes

IMPORTANT CONSIDERATIONS

- ▶ Contact the Base Hospital, if appropriate
- ▶ Contact the Trauma Center, as soon as possible
- ▶ Consider pain management when appropriate
- ▶ Splint fractures and dress wounds ONLY if time permits

FORMULA FOR ESTIMATING MAP

$$\text{MAP} = \text{diastolic} + \frac{(\text{systolic} - \text{diastolic})}{3}$$

3

TRAUMA PATIENT CRITERIA

1. **INTRODUCTION:** The goal of the Alameda County trauma system is to transport confirmed Critical Trauma Patient(s) (CTP) or, potential CTPs who might benefit from care at a trauma center directly to a designated Trauma Center in a timely manner, bypassing non-trauma centers
2. **CRITICAL TRAUMA PATIENT CRITERIA**
 - 2.1 A patient is identified as a CTP when any of the following physiologic and/or anatomic factors are present. These patients should be transported code 3
 - 2.2 **Physiologic criteria:**
 - ▶ Glasgow Coma Scale ≤ 13 *or*,
 - ▶ Blood pressure < 90 systolic *or*,
 - ▶ Respiratory rate < 10 or > 29 (< 20 in infant < 1 year) *or need for ventilatory support*
 - 2.3 **Anatomic injury factors:**
 - ▶ Penetrating injury to the torso, head, neck, groin, or extremity proximal to the knee or elbow
 - ▶ Flail chest
 - ▶ Evidence of two or more proximal long bone fractures (femur, humerus)
 - ▶ Crushed, degloved, mangled, or pulseless extremity
 - ▶ Traumatic amputation above the wrist or ankle
 - ▶ Evidence of pelvic fracture
 - ▶ Open or depressed skull fracture
 - ▶ Traumatic paralysis
3. **MECHANISM OF INJURY:** In addition to CTP criteria, the following mechanisms of injury may be used to identify a CTP. In general, these patients are transported code 2, however, differing field circumstances and/or patient condition may require a code 3 transport
 - 3.1 **Falls**
 - ▶ Falls greater than twenty (20) feet
 - ▶ Falls greater than ten (10) feet (≤ 14 or ≥ 55 years of age)
 - 3.2 **High-risk auto crash**
 - ▶ Intrusion including roof: > 12 in. occupant site; > 18 in. any site
 - ▶ Ejection of patient (partial or complete) from a moving object (automobile, motorcycle, scooter, horse, etc.)
 - ▶ Death of an occupant in the same passenger space
 - ▶ Vehicle telemetry data consistent with high risk of injury
 - 3.3 **Auto vs. pedestrian/ bicyclist thrown, run over, or with significant (> 20 mph) impact**
 - 3.4 **Motorcycle crash > 20 mph**
 - 3.5 **Suspected closed head injury**

TRAUMA PATIENT CRITERIA

4. **SPECIAL PATIENT CONSIDERATIONS:** Patients with the following considerations should be considered for transport to a trauma center. *It is highly recommended that you make base contact in these situations*

4.1 Age

4.1.1 Older adults

- Risk of injury and/or death increases after age 55
- SBP <110 may represent shock after age 65
- Low impact mechanisms (e.g. ground level falls) may result in severe injury

4.1.2 Children (≤ 14 Years of age)

- should be triaged preferentially to a pediatric-capable trauma center (e.g.- Children's)

4.2 Anticoagulation and bleeding disorders

- Patients with head injury are at high risk for rapid deterioration

4.3 Burns

- Without other trauma mechanism: *Triage to burn center*
- With trauma mechanism: *Triage to trauma center*

4.4 Pregnancy > 20 weeks

4.5 EMS provider judgement

5. **TRANSPORT:** Patients identified as a CTP will be transported to **the closest, most appropriate, designated Trauma Center**. **Exception:** The patient is identified as a CTP or Potential CTP but presents with one of the following:

PATIENT PRESENTATION	ACTION	
UNMANAGEABLE AIRWAY: <i>The patient requires intubation, and the paramedic is unable to intubate, and an adequate airway cannot be maintained with B.V.M. device.</i>	Closest Basic E.D.	
ADULT TRAUMA ARREST - BLUNT or PENETRATING:	Determination of Death in the Field (page 88) Note: Coroner's personnel must transport all dead bodies. If ordered to move a body by law enforcement, note the time, name, and badge number of the officer, and comply with the request. Ensure that the police officer on scene has contacted the Coroner's Bureau for permission to move the body	
PEDIATRIC TRAUMA ARREST BLUNT or PENETRATING:	→ ETA to the Pediatric Trauma Center ≤ 20 minutes	Pediatric Trauma Center
	→ ETA to the Pediatric Trauma Center ≥ 20 minutes	Closest Adult Trauma Center

TRAUMA PATIENT CRITERIA

6. **TRAUMA BASE CONTACT:** Varying field circumstances make rigid application of any set of rules impractical. These criteria should serve as guidelines. Clinical circumstances may dictate that transport be undertaken immediately with Trauma Base contact made en route
- 6.1 **Designated trauma base hospital** - Highland Hospital is the Base Station for all trauma patients requiring base contact
- 6.2 **Trauma base contact is not required** if the patient meets "Critical Patient Criteria" or "Mechanism of Injury" **and** is transported to a Trauma Center
- 6.3 If the patient meets any of the "Special Patient Considerations" and Trauma Base contact cannot be established or maintained, transport the patient to a Trauma Center
- 6.4 **Contact the trauma Base Physician if:**
- ▶ The patient meets the criteria listed in the "Mechanism of Injury" criteria but the paramedic is requesting transport to a basic ED
 - ▶ The patient requires medical treatment not covered in the "Trauma Patient Care" protocol (see [page 24](#))
 - ▶ The patient would benefit from consultation with the Base Physician
7. **OUT-OF-COUNTY TRANSPORT**
- 7.1 Patients who meet "Trauma Patient Criteria" may be transported directly to an out of county Trauma Center
- 7.2 Prior to transporting to an out-of-county Trauma Center, the transporting medic must:
- ▶ Contact the out-of-county Trauma Center by landline to determine if they can accept the patient
 - ▶ Give a brief report including E.T.A.
 - ▶ Contact the Alameda County Base Hospital if medical consultation is required (see #6 above)
- 7.3 **Out-of-County Trauma Centers:**

TRAUMA CENTER	PEDIATRIC CAPABLE	LOCATION	PHONE #
STANFORD UNIVERSITY MEDICAL CENTER	X	PALO ALTO	(650) 723-7337
SAN FRANCISCO GENERAL HOSPITAL		SAN FRANCISCO	(415) 206-8111
REGIONAL MEDICAL CENTER		SAN JOSE	(408) 729-2841
SANTA CLARA VALLEY MEDICAL CENTER	X	SAN JOSE	(408) 885-6912
JOHN MUIR MEDICAL CENTER		WALNUT CREEK	(925) 947-4444

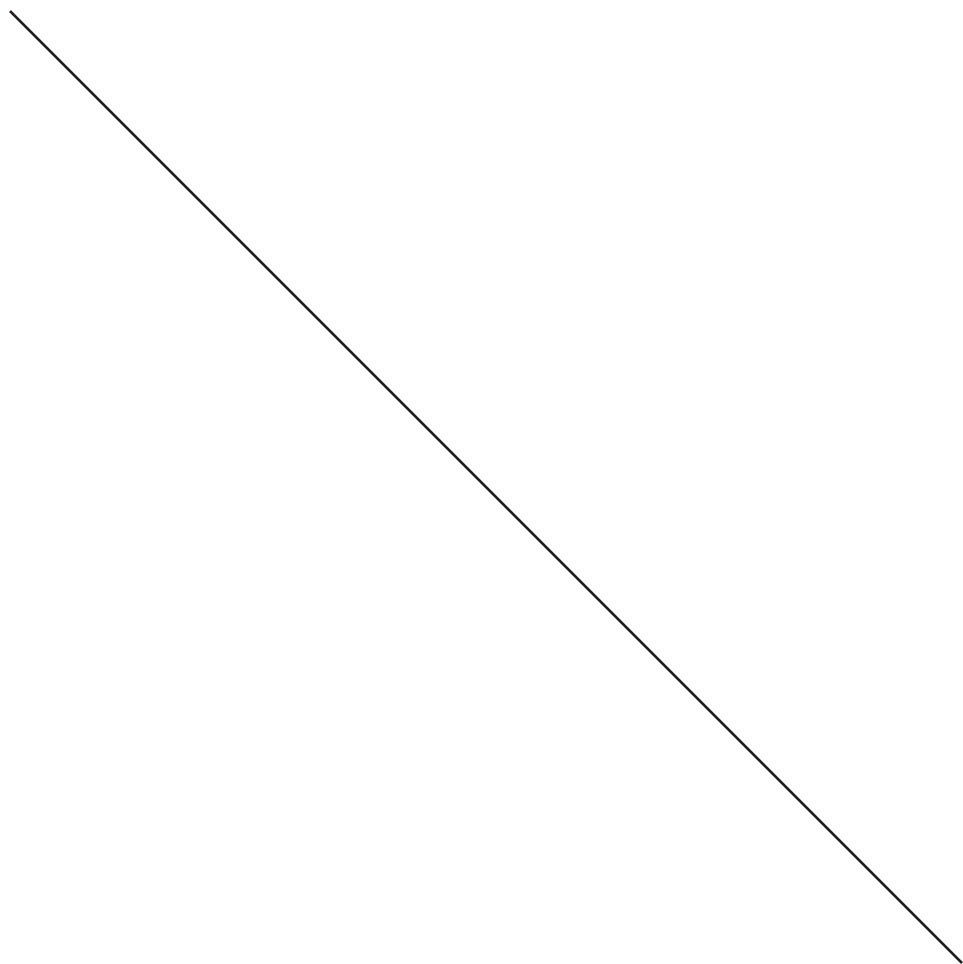
TXA - TRANEXAMIC ACID

1. **DESCRIPTION** - Tranexamic Acid (TXA) is a Lysine analogue that works to inhibit the formation of plasmin, which is a molecule responsible for clot degradation. It has had multiple medical applications in the past including pre-operative use, menorrhagia, hemophilia and hereditary angioedema. It has recently been shown in multiple studies to reduce mortality in trauma patients meeting specific physiologic criteria or who have obvious signs of massive hemorrhage.
2. **INDICATIONS** - The prehospital use of TXA should be considered for all trauma patients that meet any of the following criteria:
 - 2.1 Any sustained blunt or penetrating trauma within three (3) hours with either:
 - 2.1.1 Blunt or penetrating trauma with signs and symptoms of hemorrhagic shock.
 - ➔ Systolic blood pressure of less than 90 mmHg at scene of injury, during ground medical transport, or on arrival to designated trauma centers.
 - 2.1.2 Patients who are considered to be high risk for significant hemorrhage:
 - ➔ Estimated blood loss (EBL) of 500 milliliters in the field accompanied with heart rate (HR) greater than 120.
 - ➔ Bleeding not controlled by direct pressure or tourniquet.
 - ➔ Major amputation of any extremity above the wrists or above the ankles.
3. **CONTRAINDICATIONS**
 - ▶ Any patient under 18 years of age.
 - ▶ Any patient with an active thromboembolic event (within the last 24 hours), i.e., active stroke, myocardial infarction or pulmonary embolism.
 - ▶ Any patient with a hypersensitivity or anaphylactic reaction to TXA.
 - ▶ Any patient more than three (3) hours post injury.
 - ▶ Traumatic arrest with greater than five (5) minutes of CPR without return of vital signs.
 - ▶ Penetrating cranial injury.
 - ▶ Traumatic brain injury with brain matter exposed.
 - ▶ Isolated drowning or hanging victims.
 - ▶ Documented cervical cord injury with motor deficit.
4. **ADMINISTRATION**
 - 4.1 Administer TXA 1 gram in 100ml NS or D₅W IV/IO over 10 minutes
Do NOT administer IV push. This will cause hypotension.
 - 4.2 Place an approved wristband on the patient.
 - 4.3 Follow IV fluid resuscitation guidelines on page 23, "Trauma Patient Care"

TXA - TRANEXAMIC ACID

5. **DOCUMENTATION REQUIREMENTS** - Documentation on the electronic patient care report (ePCR) must include:
- 5.1 Meets trauma triage criteria
 - 5.2 Age
 - 5.3 Weight
 - 5.4 Date/time of injury onset of symptoms
 - 5.5 Mechanism of injury
 - 5.6 Initial SBP and vital signs
 - 5.7 EBL: pre and post TXA administration
 - 5.8 Blunt or penetrating trauma location and description of injuries
 - 5.9 Vital signs including Glasgow Coma Scale (GCS) and temperature: pre, during and post TXA administration
 - 5.10 Any fluid administration
 - 5.11 Date/time TXA was started
 - 5.12 Past medical history
 - 5.13 Allergies
 - 5.14 Race/ethnicity
 - 5.15 Gender

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ACUTE STROKE

1. **PURPOSE:** To identify acute stroke patients who may be candidates for thrombolysis and specialized care at a certified stroke center. Information in this policy is based on the Cincinnati Prehospital Stroke Scale (CPSS). The CPSS evaluates using FASTT criteria (Facial droop, Arm drift, Speech abnormalities, Time of onset/Transport)
2. **Certified Stroke Centers:** The following hospitals have been designated as certified stroke centers. If possible patient should be transported to the patient's regular source of hospitalization and/or healthcare.
 - Alameda Hospital , Alameda
 - Eden Medical Center, Castro Valley
 - Kaiser Hospital, Fremont
 - Kaiser Hospital, Oakland
 - Kaiser Hospital. San Leandro
 - Summit Medical Center, Oakland
 - Washington Hospital, Fremont

Consider transport to one of the following out-of-county centers, if appropriate. Contact the stroke center prior to transport.

 - San Ramon Medical Center, San Ramon
 - Stanford University Medical Center, Palo Alto
 - John Muir Medical Center, Walnut Creek
 - Kaiser Hospital, Walnut Creek
 - Regional Medical Center, San Jose
3. **Assessment and transport of suspected Acute Stroke patient:**
 - Provide routine medical care including pulse oximetry
 - Obtain blood glucose
 - Assess the patient using the Cincinnati Prehospital Stroke Scale

► **Note: Early transport is essential if CPSS is positive**

ACUTE STROKE**Cincinnati Prehospital Stroke Scale**

Sign/Symptom	How Tested	Normal	Abnormal
Facial Droop	Have the patient show their teeth or smile	Both sides of the face move equally	One side of the face does not move as well as the other
Arm Drift	The patient closes their eyes and extends both arms straight out for 10 seconds	Both arms move the same, or both do not move at all.	One arm either does not move, or one arm drifts downward compared to the other.
Speech	The patient repeats "The sky is blue in Cincinnati".	The patient says correct words with no slurring of words.	The patient slurs words, says the wrong words, or is unable to speak
Time of Onset	must be within 4 hours, observed by a reliable witness (for thrombolysis)		
Transport	The patient is considered a <u>possible</u> Acute Stroke patient if <u>any</u> of the tested signs/symptoms are abnormal and must be transported to the closest, most appropriate certified stroke center. If possible patient should be transported to the patient's regular source of hospitalization and/or healthcare.		

4. The patient may be a candidate for thrombolysis if all of the following are true:

- ➔ One or more of the CPSS signs/symptoms are present.
- ➔ CPSS signs/symptoms were initially observed within **4 hours** of contact by a reliable witness.
Please note: Ask when the patient was last seen at normal baseline and when the onset of new stroke signs and symptoms appeared.
- ➔ Normal blood glucose level is obtained

Make sure to either:

- ▶ **transport the witness to the stroke center in the ambulance (PREFERRED); OR,**
- ▶ **if driving, tell him/her to leave immediately and meet you at the stroke center; AND,**
- ▶ **obtain a contact number where the witness can be reached by the attending physician**

5. Treatment and support guidelines (to be done en route)

- ➔ Transport patient in supine position. If this position is not tolerated or there is evidence of increasing intracranial pressure/intracranial hemorrhage, transport in semi fowlers with no more than 30° head elevation
- ➔ O₂ – titrate to 94-99% SpO₂
- ➔ Establish IV access enroute using an 18 gauge (no smaller than 20 gauge) proximal to wrist (AC preferred). No more than 1 AC attempt and no more than 2 IV attempts total. **Maintain with a saline lock or IV infusion set TKO**
- ➔ Obtain a 12-Lead EKG enroute when a dysrhythmia or ACS symptoms are present (specifically watch for STEMI and/or atrial fibrillation)

6. Immediately call the designated stroke center via phone and/or radio and notify them that you are transporting a "possible Acute Stroke patient by the Cincinnati Prehospital Stroke Scale (CPSS), ETA ____ minutes". **(Reminder:** See "Diversion Criteria" or the information on page v of the field manual regarding CT Diversion)

7. Document the results of the assessment on the PCR and specifically describe any of the CPSS signs and/or symptoms that were abnormal

AIRWAY OBSTRUCTION**•Routine Medical Care**

•If obstruction due to laryngeal trauma, see [page 24](#) "Trauma Patient Care"

•Obstruction due to epiglottitis:

→ Do not attempt to visualize the throat or insert anything into the mouth

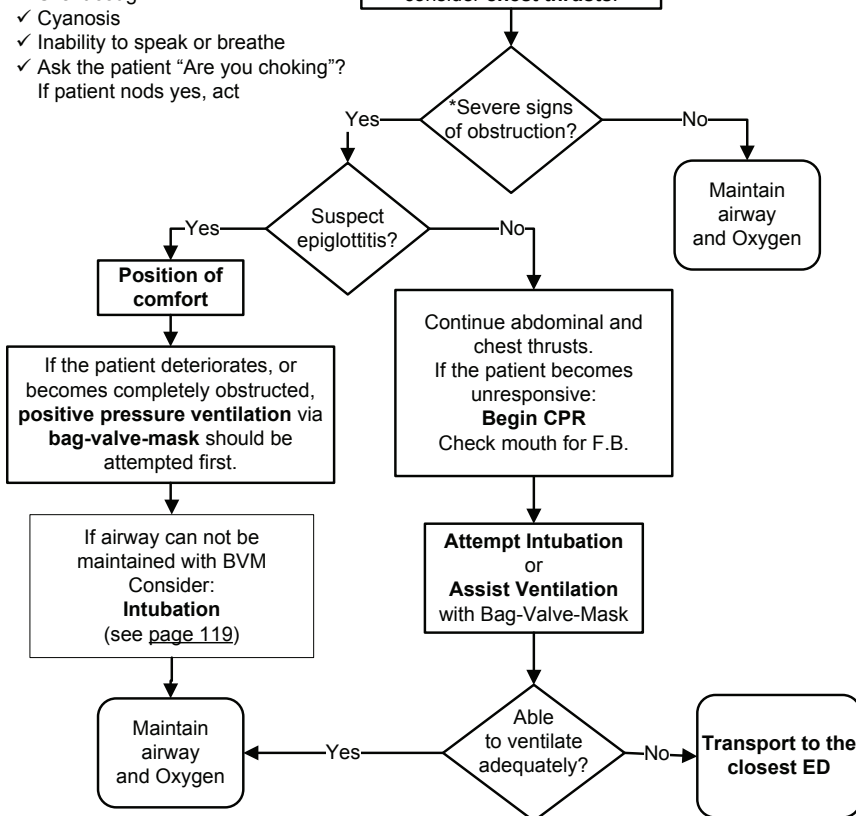
→ Minimize outside stimulation. Keep the patient calm. Position of comfort.

•Do not use a tongue/jaw lift or perform blind finger sweeps

•Rapid Transport***Signs of severe obstruction:**

- ✓ Poor air exchange
- ✓ Increased breathing difficulty
- ✓ Silent cough
- ✓ Cyanosis
- ✓ Inability to speak or breathe
- ✓ Ask the patient "Are you choking?"
If patient nods yes, act

Apply **abdominal thrusts** in rapid sequence. If ineffective, or the patient is obese or in the late stages of pregnancy, consider **chest thrusts**.

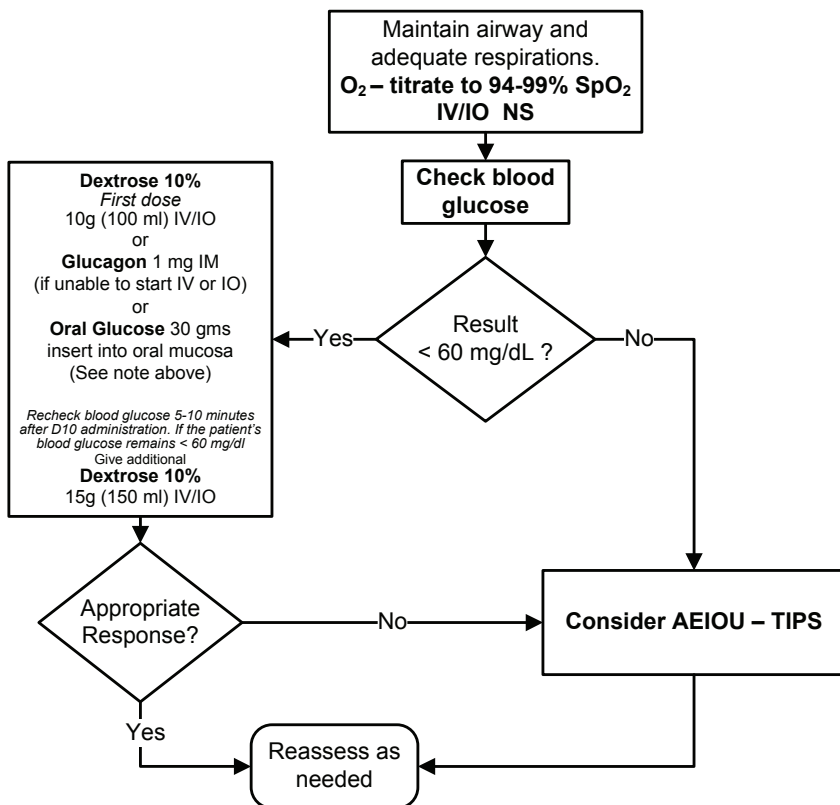


ALTERED LEVEL OF CONSCIOUSNESS**•Routine Medical Care**

- Obtain a complete patient history including current medications
- Identify and document neurological deficits
- Naloxone **should not** be given as treatment for altered level of consciousness in the absence of respiratory depression (respiratory depression = rate of less than 8 breaths per minute) (see [page 46](#))
- Note:** Glucose paste may be administered if the patient: **1)** is able to hold head upright; **2)** has a gag reflex; and, **3)** can self-administer the medication
- Dextrose should **not** be given with suspected Acute Stroke unless blood sugar reading is < 60 mg/dL
- Perform 12-Lead EKG, as appropriate, and transport to a STEMI Receiving Center if STEMI is identified. (See [page 128](#) - EKG 12-Lead) for STEMI Receiving Center information
- SMR for trauma or suspicion of trauma (see [page 140](#))

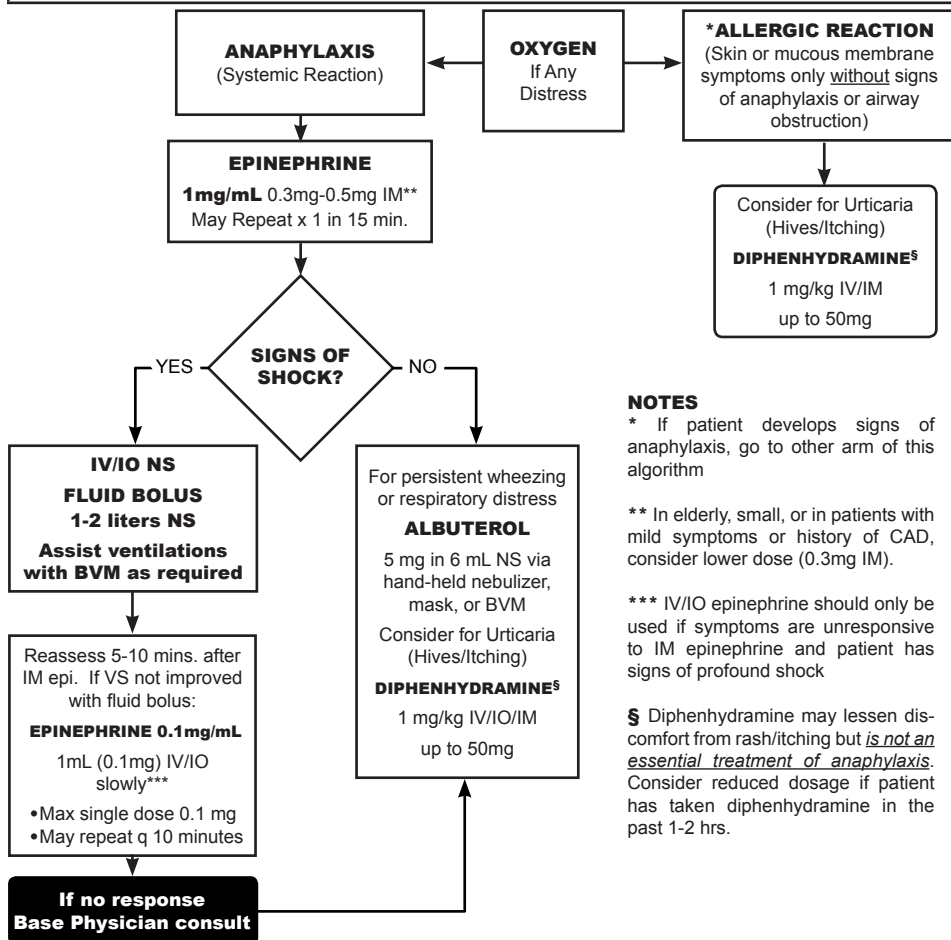
•Contact the Base Physician if:

→ the Blood Glucose reading is > 60 mg/dL but hypoglycemia is suspected



ANAPHYLAXIS / ALLERGIC REACTION

- **Epinephrine IM** is the cornerstone of treatment of anaphylaxis and should be given as early as possible. It is best absorbed from an injection in the lateral thigh
- If the patient is in severe distress, **administer Epinephrine IM** and consider immediate transport
- **SIGNS OF ANAPHYLAXIS (Systemic Reaction)** – wheezing, repetitive cough, tightness in chest, stridor, difficulty swallowing or tightness in throat, change in voice, dizziness or feeling faint, abdominal complaints (pain, repeated vomiting, diarrhea or incontinence), anxiety, lethargy
- **SIGNS OF ANAPHYLACTIC SHOCK** – pallor, hypotension, cool, clammy mottled skin, altered sensorium
- **HIVES/ITCHING or FLUSHED SKIN** often accompanies anaphylaxis, but is not always present

**NOTES**

* If patient develops signs of anaphylaxis, go to other arm of this algorithm

** In elderly, small, or in patients with mild symptoms or history of CAD, consider lower dose (0.3mg IM).

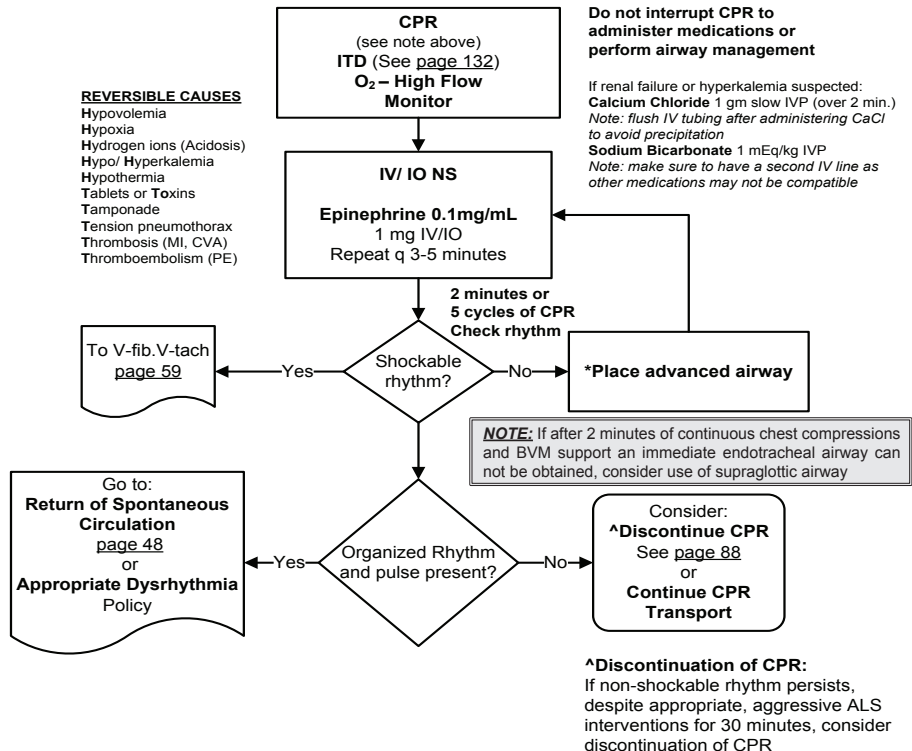
*** IV/IO epinephrine should only be used if symptoms are unresponsive to IM epinephrine and patient has signs of profound shock

§ Diphenhydramine may lessen discomfort from rash/itching but is not an essential treatment of anaphylaxis. Consider reduced dosage if patient has taken diphenhydramine in the past 1-2 hrs.

ASYSTOLE / PULSELESS ELECTRICAL ACTIVITY**•Routine Medical Care**

•Consider and treat other possible causes – See CPR [page 10](#)

•**Note: Use of a mechanical CPR device is required whenever available and appropriate**



BRADYCARDIA**•Routine Medical Care****•Bradycardia:** < 50 beats/minute, 2nd degree block, 3rd degree block**•Serious signs and symptoms:**

- Acute altered mental status
- Hypotension
- On-going chest pain
- Other signs of shock

•Note:

- If utilizing Transcutaneous Pacing (TCP), verify mechanical capture and patient tolerance (see [page 145](#))
- Use sedation with caution in the hypotensive patient (see [page 138](#))
- If patient symptomatic and pacing not available, consider rapid transport

Maintain **airway**, assist
breathing as needed
O₂ – titrate to **94-99% SpO₂**
Monitor
IV/ IO NS
Consider 12-lead if stable

- ✓ **Transcutaneous Pacing:**
Begin at 80 bpm, 0 mA; increase in 10 mA increments until capture obtained then increase the output level by 10%. (see [TCP page 145](#))
- ✓ Consider: **Sedation** (see note above & sedation policy)
- ✓ Consider: **Pain Management** – titrate to effect

- ✓ Consider: **Atropine** 0.5 mg IV/ IO while waiting for TCP. May repeat q 3-5 minutes to a total dose of 3 mg.
- ✓ Consider: **Dopamine** 2-10 mcg/kg/min IV/IO, while waiting for TCP or TCP ineffective

If capture maintained but patient remains symptomatic, consider:

- ✓ Increase rate by 10 bpm to a max of 100 bpm
- ✓ **Fluid challenge**, particularly if evidence of right ventricular MI

Consider:
Base Physician consult
if patient remains symptomatic

Yes → **Signs or symptoms of poor perfusion caused by bradycardia?

No → Observe/
Monitor

**If patient is symptomatic, do not delay pacing to start an IV or wait for atropine to take effect.

CHEST PAIN - SUSPECTED CARDIAC/STEMI**•Routine Medical Care****•Signs of Shock** - 2 or more of the following:

→ Pulse > 120/minute

→ Pale, cool and/or diaphoretic skin signs

→ BP < 90/systolic

→ Altered Mental Status

- If cardiac chest pain is suspected and the patient is able to swallow, give **Aspirin 162 - 324 mg po** as soon as possible (tablet or chewable – not enteric coated)
- NTG may be prioritized as needed based on patient presentation
- Perform 12-Lead EKG, as appropriate, and transport to a STEMI Receiving Center if STEMI is identified. See **page 128** - EKG 12-Lead for EKG transmission and STEMI Receiving Center information
- **Note:** If the patient has taken **erectile dysfunction (ED) medication within the last 24 hours (Viagra/Levitra) or 36 hours (Cialis), withhold nitroglycerin**

Patients who have oxygen saturations of greater than 94% without signs or symptoms of hypoxia or impending airway compromise should not receive oxygen.

Monitor
Assess ABC's
O₂ – titrate to 94-99%
Aspirin 162-324 mg
IV/IO NS

**Base
Physician
Consult**

12-lead EKG

*** NTG 0.4 mg**
up to 3 doses, q 3-5 minutes for
continuing pain/discomfort

If unresponsive to nitrates:
Pain Management
(see **page 43**)

(^see note)

^^ Note: If B/P drops below 90 systolic or drops > 30 mm/Hg from baseline at any point; or, **heart rate is < 50 or > 100 bpm, contact the base physician** before administering/continuing NTG and/or Pain Management

* Administer nitrates with extreme caution, if at all, to patients with inferior wall MI and suspected right ventricular involvement, because these patients require adequate RV preload. (Obtain right-sided ECG leads to assist in diagnosing RV infarct.)

Yes ————— No

ST
Elevation MI?
(STEMI)

Transmit EKG to STEMI
Receiving Center (SRC)
(see **page 128**)

Transport to SRC

Establish 2nd IV en-route

Do not delay transport if
technical difficulties impede
EKG transmission. Attempt
to send en-route whenever
possible.

If cardiogenic shock,
tachycardia, or life
threatening dysrhythmia
go to appropriate policy

DYSTONIC REACTION**•Routine Medical Care**

•History includes ingestion of phenothiazines:

→ Chlorpromazine (Thorazine, Largactil)

→ Promazine (Compazine)

→ Triflupromazine (Vesprin)

•Signs and Symptoms (often mistaken for a seizure disorder or tetany):

→ Agitated/frightened appearance

→ Small pupils

→ Hypotension

→ Facial grimaces

→ Protruding tongue

→ Levomepromazine (Nozinan)

→ Piperidines (Haloperidol, Risperidone)

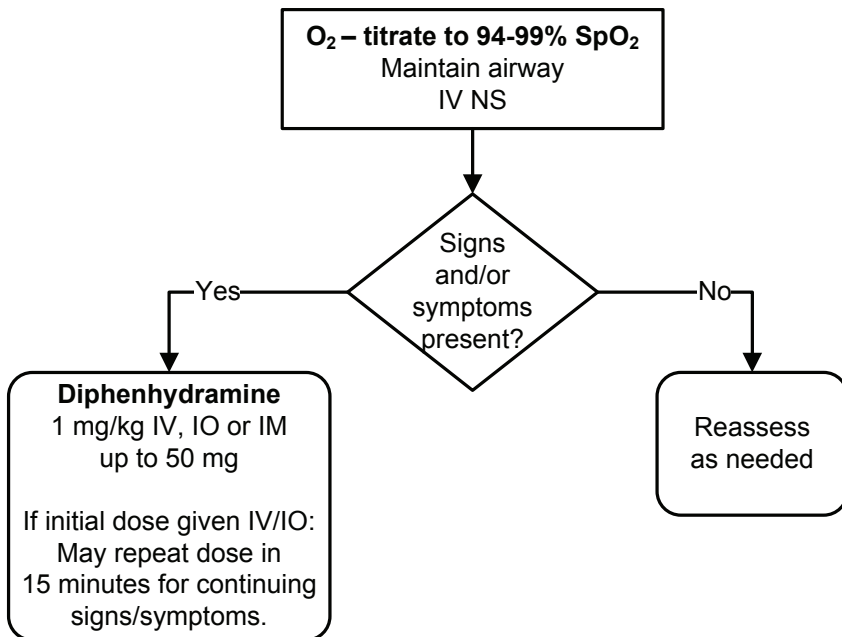
→ Promethazine (Phenergan)

→ Jaw muscle spasm

→ Oculogyric crisis (circular movement of the eyeballs)

→ Torticollis (twisting of the neck)

→ Spasms of the back muscles, causing the head and legs to bend backward and the trunk to arch up



MEDICATIONS – AUTHORIZED | STANDARD INITIAL DOSE

Adenosine	1st dose: 6 mg; 2nd dose: 12 mg (rapid <i>IV/IO</i> push)
Albuterol	5 mg in 6 ml normal saline
Amiodarone	Wide complex Tachycardia: 150 mg <i>IV/IO</i> over 10 mins VF/VT: 1st dose: 300 mg <i>IV/IO</i> ; 2nd dose: 150 mg <i>IV/IO</i> Follow each dose with 20mL NS flush. (two doses only)
Aspirin	162 mg chewable or 324 mg (5gr.) tablet – not enteric coated)
Atropine sulfate	Bradycardia: 0.5 mg <i>IV/IO</i> - (max total 3 mg - 6 doses)
Calcium chloride 10%	1 gm over 2 minutes <i>IV/IO</i>
Charcoal	1 gm/kg (Max 50 gms) <i>PO</i>
Dextrose 10%	10 gms <i>IV/IO</i>
Diphenhydramine (Benadryl)	Allergic Reaction: 1 mg/kg <i>IV/IO/IM</i> up to 50 mg
Dopamine	400 mg in 500 ml D5W <i>IV/IO</i> (800 mcg/ml) Infuse at 2 - 20 mcg/kg/minute - titrated to appropriate response
Epinephrine 1mg/mL	Anaphylaxis: 0.3mg-0.5mg <i>IM</i> Bronchospasm: 0.01 mg/kg <i>IM</i> (max dose 0.5mg)
Epinephrine 0.1mg/mL	Anaphylactic shock: 1mL (0.1mg) <i>IV/IO</i> slowly Cardiac arrest: 10mL (1 mg) <i>IV/IO</i>
Fentanyl Minimum dose 50mcg Max single dose 100 mcg	Chest pain: 50-100 mcg <i>IV/IO/IM/IN</i> Pain management: 50-100 mcg <i>IV/IO/IM/IN</i> Critical trauma patient: 50 mcg <i>IV/IO/IM/IN</i>
Glucagon	1 mg <i>IM</i>
Oral Glucose	30 gms <i>PO</i>
Ipratropium (Atrovent)	500 mcg (2.5 ml unit dose) <i>Via nebulizer</i>
Lidocaine 2%	40mg <i>IO</i> (2 mL) <u>slowly</u> (1 ml over 30 seconds)
Midazolam (Versed)	Sedation: <i>IV (slowly) / IN (briskly)</i> : 1-2 mg, <i>IM</i> : 2-4 mg (if no <i>IV</i>) Seizure: <i>IN</i> : 5 mg, <i>IV/IM/IO</i> : 0.1 mg/kg - max dose 6 mg
Naloxone (Narcan)	Initial dose: 1 – 2 mg <i>IV/IM/SQ</i> 2 mg. <i>IN</i> - max dose
Nitroglycerine spray	0.4 mg metered spray or tablet
Normal saline	250 - 500 ml <i>IV/IO</i> fluid bolus
Ondansetron (Zofran)	4 mg <i>IV</i> [†] <u>Slowly</u> over 30 seconds or 4 mg <i>IM/PO</i> (<i>oral dissolving tablets</i>) ([†] rapid <i>IV</i> administration <30 seconds can cause syncope)
Oxygen (titrate to 94%-99% SpO2)	2 - 6 L/nasal cannula 15 L/non-rebreather mask
Sodium bicarbonate	1 mEq/kg <i>IV/IO</i>
Sodium thiosulfate	12.5 grams <i>IV/IO</i> over 10 minutes

MEDICATIONS – AUTHORIZED | STANDARD INITIAL DOSE

Atropine Sulfate	Nerve agent exposure: → Patient: 2 mg <i>IV/IM</i> (for use only by paramedics as members of medical HazMat teams) → Autoinjector antidote kit: 2 mg in 0.7mL 1 - 3 kits depending on exposure (given with Pralidoxime chloride) ► <i>Additional atropine may be needed until a positive response is achieved</i>
Pralidoxime Chloride (2-PAM)	Nerve agent exposure: → Patient: 1 - 2 grams <i>IV/IM</i> (for use only by paramedics as members of medical HazMat teams) → Autoinjector antidote kit: 600 mg in 2 ml's 1 - 3 kits depending on exposure (given with atropine)

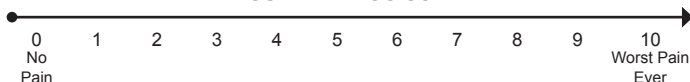
PAIN MANAGEMENT

•Routine Medical Care

- Monitor the patient closely
- Utilize capnography
- Have **Naloxone** readily available. Fentanyl is a potent, synthetic opiate that is 100 times stronger than morphine. It may take twice as much naloxone to reverse the effects of an overdose
- Pain management should be initiated as early as possible and before transport in the stable patient. Attempts should be made to reduce pain by using psychological coaching and BLS measures such as ice packs and splints. Consider pain management prior to the manipulation of suspected fractures
- The preferred route of administration is intravenous (IV)
- Document the level of pain prior to and after the administration of fentanyl
- Consider lower doses for older adults (25mcg)**
- For the first and subsequent doses (all routes), consider 1 mcg/kg as a guideline.**

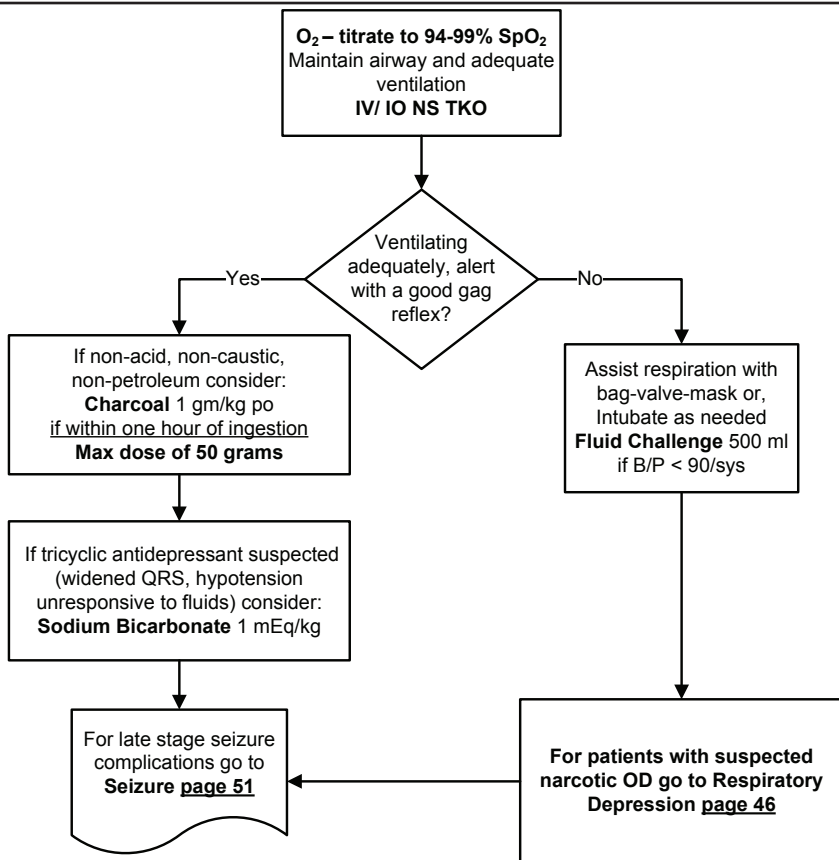
Pain Management Criteria	Base Contact	Treatment
Any patient with a complaint of significant pain, including: <ul style="list-style-type: none"> → Significant extremity injuries → Burn patients → ACS patients → Crush injury patients → Prolonged extrication → Severe back and spinal pain → Immobilized patients → Abdominal pain Premedication for patients undergoing invasive or potentially painful procedures	<p align="center">No unless > 200 mcg of fentanyl is needed</p>	<p>O₂ – titrate to 94-99% SpO₂ IV/IO NS or saline lock</p> <p>Fentanyl:</p> <ul style="list-style-type: none"> ▶ IV/IO: 50 mcg–100 mcg slow IV push (over 1 minute) <p>Repeat q 5 mins to a maximum of 200 mcg</p> <p>No IV/IO access:</p> <ul style="list-style-type: none"> ▶ IM: 50 mcg–100 mcg <p>Repeat q 10 mins to a maximum of 200 mcg</p> <ul style="list-style-type: none"> ▶ IN: 50 mcg–100 mcg (briskly) <p>Repeat q 10 mins to a maximum of 200 mcg</p>
Critical Trauma patients with: <ul style="list-style-type: none"> → Abdominal trauma → Thoracic trauma 	<p align="center">No unless > 100 mcg fentanyl is needed</p>	<p>O₂ – titrate to 94-99% SpO₂ IV/IO NS or saline lock</p> <p>Fentanyl:</p> <ul style="list-style-type: none"> ▶ IV/IO: 50 mcg–100 mcg slow IV push (over 1 minute) <p>No IV/IO access:</p> <ul style="list-style-type: none"> ▶ IM/IN: 50 mcg–100 mcg maximum
Other patients with a complaint of significant pain, including: <ul style="list-style-type: none"> → Decreased respirations → Altered mental status → BP < 90 systolic → Patients with pain not covered above 	<p align="center">Yes</p>	<p>Contact the Base Physician</p> <p>prior to administering any pain medication</p>

VISUAL ANALOG SCALE



POISONING | INGESTION | OVERDOSE

- **Routine Medical Care**
 - **Protect Yourself!** - See HazMat [page 157](#)
 - **Identify substance** - Bring any containers, labels or a sample (if safe) into the hospital with the patient. Determine type, amount and time of the exposure.
 - **Consult the Base Physician:**
 - If *organophosphate poisoning* suspected*
 - If *calcium channel* or *beta blocker OD* suspected*
 - For treatment options for specific exposures
- * Consider contacting Poison Control for other substances **800-222-1222**
- Remove contaminated clothing. Brush off powders, wash off liquids with copious amounts H₂O



PULMONARY EDEMA / CHF**•Routine Medical Care**

- It will be necessary to briefly remove the CPAP mask to administer aerosolized/oral medications; this will not harm the patient. Ensure a tight fit is obtained upon mask re-application
- Consider ASA**, 162 – 324 mg po, for acute coronary syndrome patients
- Perform 12-Lead EKG, and transport to a STEMI Receiving Center if STEMI is identified. (See [page 128](#) - EKG 12-Lead) for STEMI Receiving Center information
- Rapid transport** if on scene stabilization is unlikely

Note #1:*Consult the base physician**

if the B/P drops below 90/
systolic **at any point**, before
continuing NTG, or for any
questions regarding dosage

O₂ – titrate to 94-99% SpO₂
IV NS

*B/P > 90
systolic?

Yes

No

NTG 0.4 mg
q 5 minutes
for continuing symptoms

If the patient's B/P is
>150/systolic, double **^NTG** to
0.8 mg q 5 minutes.
Maximum total dose: 8.0 mg

Consider: **CPAP [page 126](#)**

Go to:
**Cardiogenic
Shock**
[page 54](#)

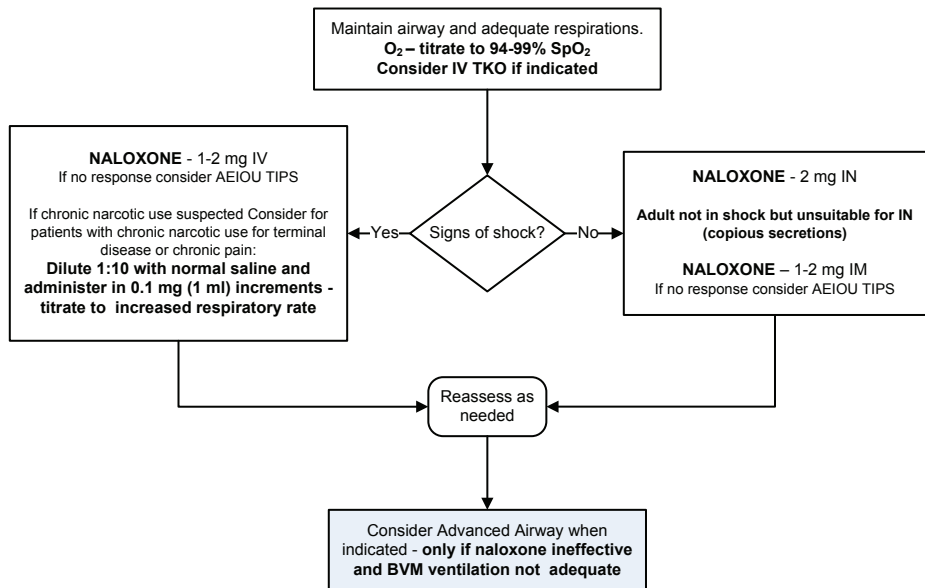
^ Note #2:

- ✓ Repeat vital signs between doses.
- ✓ Only increase **NTG** dose to 0.8 mg while the B/P is \geq 150/systolic.
- ✓ If B/P drops below 150/systolic resume 0.4 mg dose.

**Reassess as
needed**

RESPIRATORY DEPRESSION OR APNEA (SUSPECTED NARCOTIC OD)

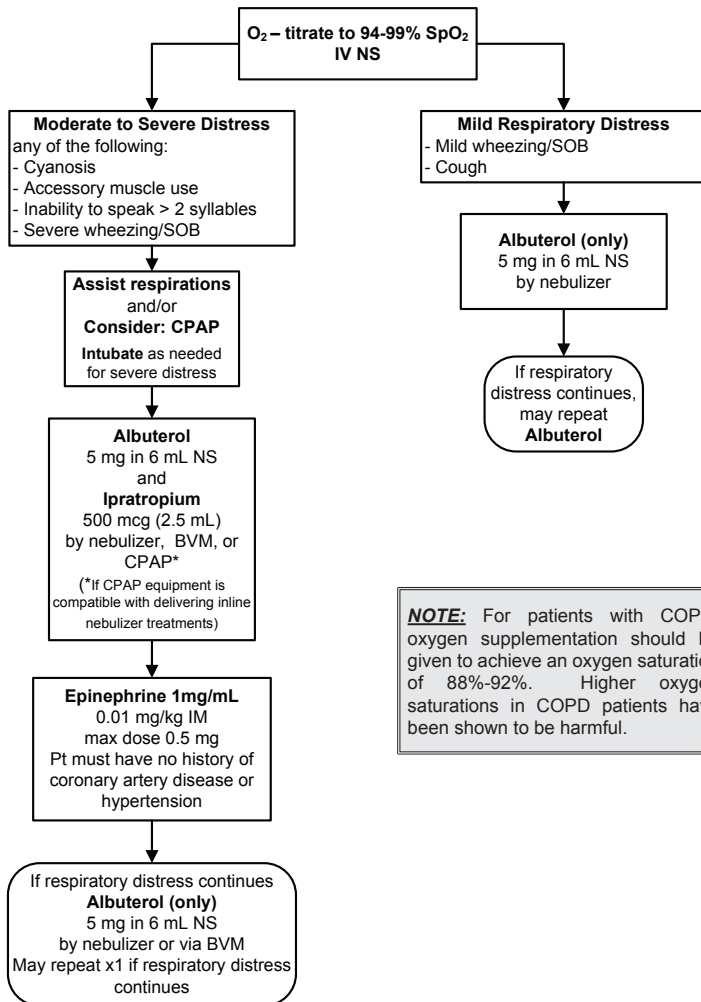
- **Routine Medical Care**
- **SAFETY WARNING! Naloxone will cause acute withdrawal symptoms in patients who are habituated users of narcotics (whether prescribed or from abuse)**
- Use of diluted Naloxone IV and titration with small increments may help decrease adverse effects of naloxone in patients who have chronic narcotic usage for terminal disease or pain relief
- **Naloxone treatment should only be given to patients with respiratory depression (rate less than 8)**
- Patients who are maintaining adequate respirations with decreased level of consciousness do not generally require Naloxone for management
- Naloxone can cause cardiovascular side effects (chest pain, pulmonary edema) or seizures in a small number of patients (1-2%)
- Older patients are at higher risk for cardiovascular complications
- Be prepared for patient agitation or combativeness after naloxone reversal of narcotic overdose



RESPIRATORY DISTRESS**•Routine Medical Care**

- Asthma → COPD
- Bronchospasm → Pulmonary edema (see [page 45](#))

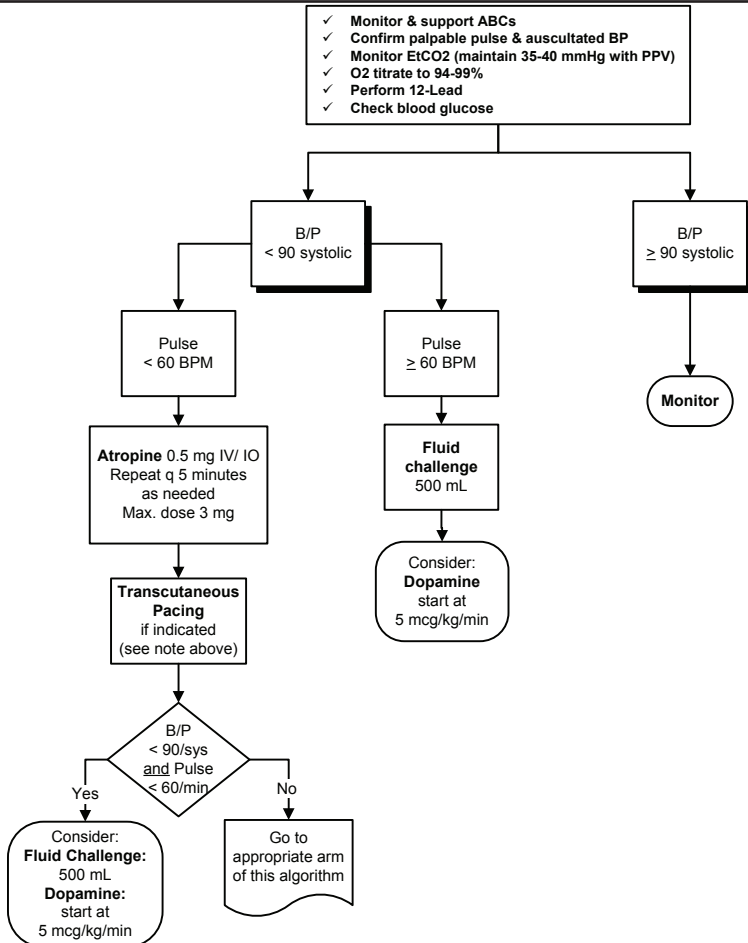
•Limit physical exertion, reduce patient anxiety



NOTE: For patients with COPD, oxygen supplementation should be given to achieve an oxygen saturation of 88%-92%. Higher oxygen saturations in COPD patients have been shown to be harmful.

RETURN OF SPONTANEOUS CIRCULATION - ROSC

- **Routine Medical Care**
- **Remove Impedance Threshold Device (ITD)**
- Monitor for reoccurrence of arrest rhythm
- Transport patients with ROSC at any time to STEMI Center (except critical trauma patients)
- *If appropriate, transport pediatric patients to Children's Hospital*
- **Note: Transcutaneous Pacing (page 145):** Begin at 80 bpm, 0 mA; increase in increments of 10 mA until capture obtained then increase the output level by 10% If capture maintained but patient remains symptomatic consider increasing the rate by 10 bpm, to a maximum of 100 bpm



ROUTINE MEDICAL CARE – ADULT**1. DEFINITIONS:****Baseline vital signs:**

- Pulse rate
- Blood pressure
- Respiratory rate
- Pulse Oximetry
- Consider temperature

SAMPLE History:

- S** = Signs & symptoms
- A** = Allergies
- M** = Medications
- P** = Pertinent past history
- L** = Last oral intake
- E** = Events leading to the injury/illness

Adapted from Emergency Care and Transportation of the Sick and Injured, 8th Edition

2. SCENE SIZE-UP:

- Substance isolation
- Scene safety
- Determine mechanism of injury | nature of illness
- Determine number of patients
- Request additional assistance

3. INITIAL ASSESSMENT:

- Form general impression of the patient
- Assess mental status
- Assess the airway
- Assess breathing
- Assess circulation
- Identify priority patients

4. TRAUMA PATIENTS: Focused History and Physical Exam - Reconsider mechanism of injury**Significant Mechanism of Injury:**

- Rapid trauma assessment
- Baseline vital
- SAMPLE History
- Transport
- Detailed physical exam

No Significant Mechanism of Injury:

- Focused assessment based on chief complaint
- Baseline vital signs
- SAMPLE History
- Transport
- Detailed physical exam

5. MEDICAL PATIENTS - Focused History and Physical Exam - Evaluate responsiveness**Responsive:**

- History of illness
- SAMPLE history
- Focused physical exam based on
- Chief complaint
- Baseline vital signs
- Re-evaluate transport decision
- Detailed physical exam

Unresponsive:

- Rapid medical assessment
- Baseline vital signs
- SAMPLE history
- Re-evaluate transport decision
- Detailed physical exam

6. ONGOING ASSESSMENT

→ Repeat initial vitals signs	→ Reassess vital signs
→ Repeat focused assessment	→ Reassess interventions

ROUTINE MEDICAL CARE – ADULT**7. TREAT AS APPROPRIATE, WITHIN SCOPE OF PRACTICE** (See specific treatment protocols)**7.1 Airway:**

- ▶ Open airway – suction, as needed
- ▶ Head tilt / Chin lift or jaw thrust without head extension if C-spine injury suspected
- ▶ Oropharyngeal | Nasopharyngeal airway

7.2 Breathing:**7.2.1 Oxygen Administration:**

- ▶ Administer O₂ – titrate to 94-99% SpO₂ appropriate to patient condition
- ▶ If there is a history of COPD, observe for respiratory depression and support respirations as needed. Do not withhold oxygen from a patient in distress because of a history of COPD
- ▶ The patient presents with signs and symptoms of pulmonary edema or severe respiratory distress, O₂ should be initiated at 15L/minute by non-rebreather mask

7.2.2 Assist ventilation.**7.2.3 CPAP (see [page 126](#))****7.2.4 Endotracheal intubation, King-LTD (see Advanced Airway Management see [page 119](#))****7.3 Circulation:**

- ▶ Initiate CPR, as needed.(see [page 9](#))

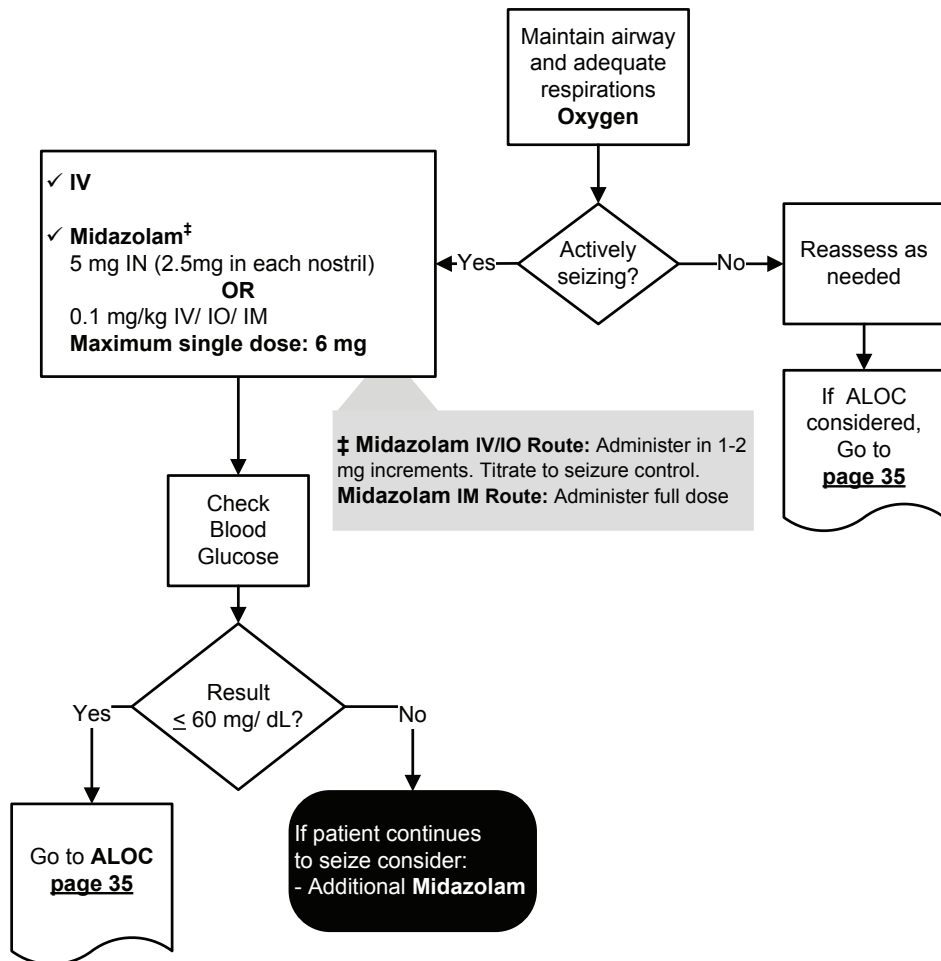
7.4 Fluid Administration:

- ▶ Start an intravenous/intraosseous line as needed
- ▶ When IV access is needed, most of the time a saline lock is sufficient. Consider an IV line with Normal Saline when the patient may need to receive volume or when frequent IV meds are being given (e.g. - cardiac arrest)
- ▶ When starting an IV/IO/saline lock, use chlorhexidine as a skin prep. Label insertion site with "PREHOSPITAL IV – DATE AND TIME"

8. PATIENT POSITION**8.1 Conscious, no trauma, good gag reflex:** Position of comfort**8.2 Depressed Level of Consciousness, no trauma, decreased gag reflex:** Left lateral position**8.3 Trauma:** Spinal Motion Restriction (SMR), as needed. (see Spinal Motion Restriction (SMR) Procedure [page 140](#)). Make sure the patient can be rolled to the side in the event of vomiting**8.4 Pregnancy:** Do not lay the patient flat if more than 20 weeks pregnant. Transport either in semi-fowlers position or left lateral decubitus position. If patient requires SMR, secure to a backboard first then tilt the board 20 – 30 degrees to the left**8.5 Respiratory distress:** Fowler's position or position of comfort**9. PATIENT MEDICATIONS****9.1** Field personnel must either bring all medication bottles with the patient to the hospital (preferred), or make a list of the medications, including the drug name, dose and frequency.**9.2** Field personnel may assist patients with the administration of physician prescribed devices, including but not limited to, patient operated medication pumps, sublingual nitroglycerin, and self-administered emergency medications, including epinephrine devices

SEIZURE**•Routine Medical Care**

- Midazolam should not be given unless the patient is actively seizing - 3 or more seizures in ≤ 5 minutes or any seizure lasting > 5 minutes.
- Protect the patient from further injury by padding or moving objects as necessary; do not forcibly restrain the patient



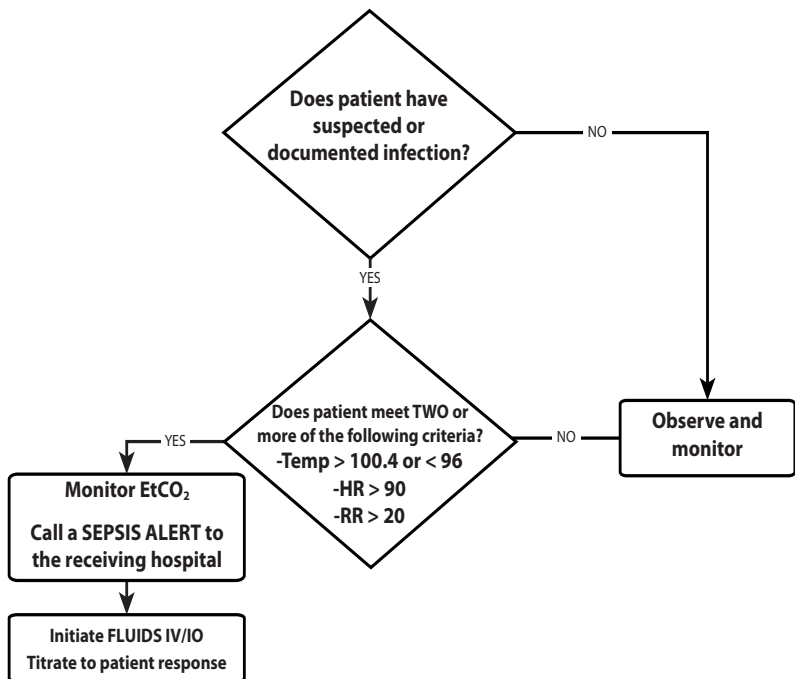
SEPSIS

Sepsis is a potentially deadly medical condition that is characterized by a whole body inflammatory state called Systemic Inflammatory Response Syndrome (SIRS). The body may develop this inflammatory response by the immune system to microbes in the blood, urine, lungs, skin, or other tissues. The syndrome can include fever, tachycardia, tachypnea and hypotension.

1. **Increased risk factors for sepsis include:**

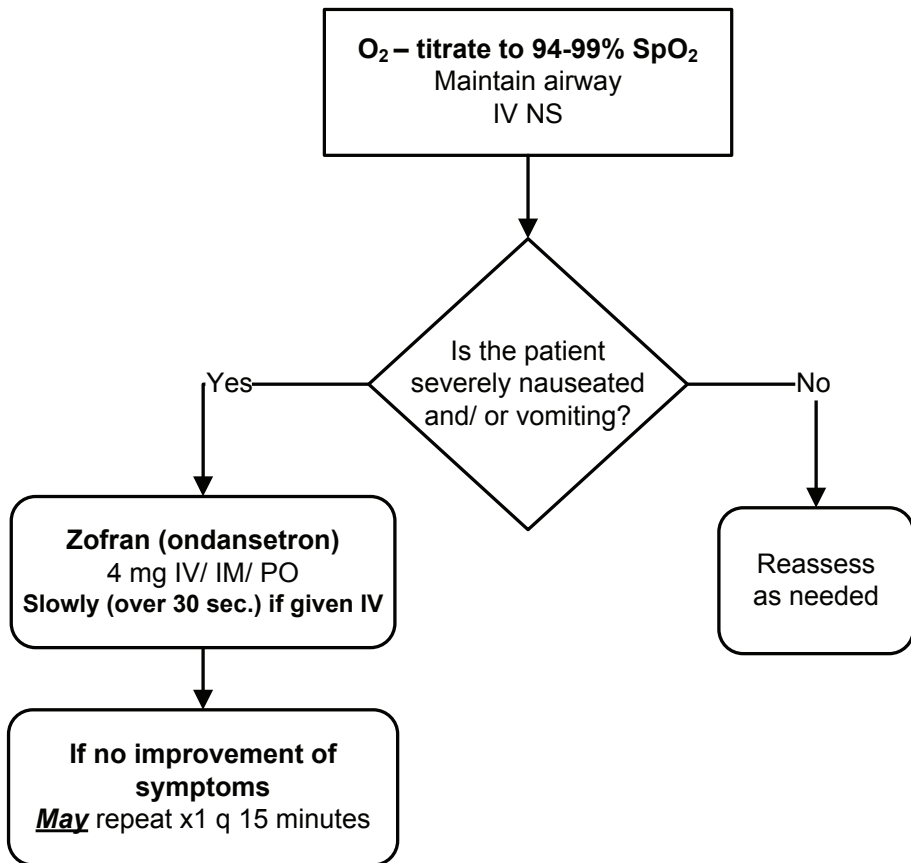
MORE COMMON	OTHER RISK FACTORS
<ul style="list-style-type: none"> ▶ Age (Elderly, Newborn) ▶ Diabetes ▶ Compromised immune system 	<ul style="list-style-type: none"> ▶ Cancer ▶ Renal Disease ▶ Alcoholism / IV Drug Abuse ▶ Malnutrition ▶ Hypothermia ▶ Recent surgery or invasive procedure

2. Although sepsis patients can be any age, the Prehospital Sepsis Screening Tool triages for sepsis patients aged 15 years and older. For these patients, notify the receiving hospital of a SEPSIS ALERT as early as possible via radio or phone.



SEVERE NAUSEA

- **Routine Medical Care**
- **Indications:** Intractable vomiting or severe nausea
- **Contraindications:** Hypersensitivity to 5-HT₃ receptor antagonists (i.e. – dolasetron (Anzemet), granisetron (Kytril))
- **Relative Contraindications:** *Zofran administration during first trimester of pregnancy is not recommended*
- **Note #1:** Consider other treatable causes
- **Note #2: Administering Zofran rapidly can cause syncope**
- **Note #3:** If patient has s/s of anaphylaxis/allergic reaction, follow Anaphylaxis/Allergic Reaction policy



SHOCK: HYPOVOLEMIC/CARDIOGENIC**•Routine Medical Care****•Shock** - 2 or more of the following:

- Pulse > 120/minute
- Altered Mental Status
- BP < 90/systolic
- Pale, cool and/or diaphoretic skin signs

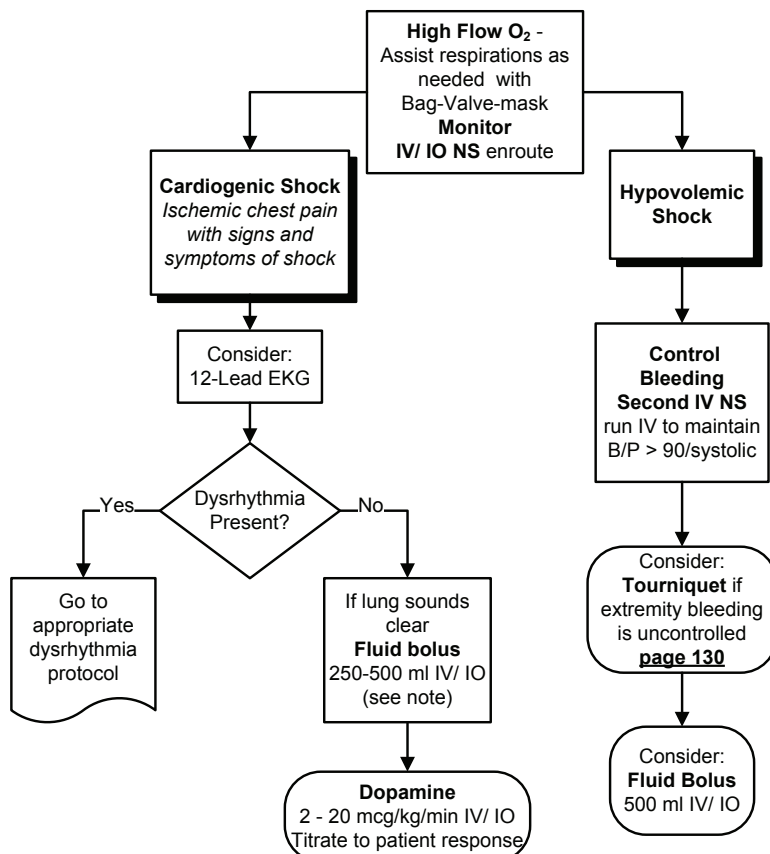
•Initiate early transport and treat en route, if appropriate.

•**NOTE:** A fluid bolus of up to 500 ml Normal Saline may be given to an adult patient in cardiogenic shock with clear lung sounds.

•If **anaphylaxis suspected**, see [page 36](#)

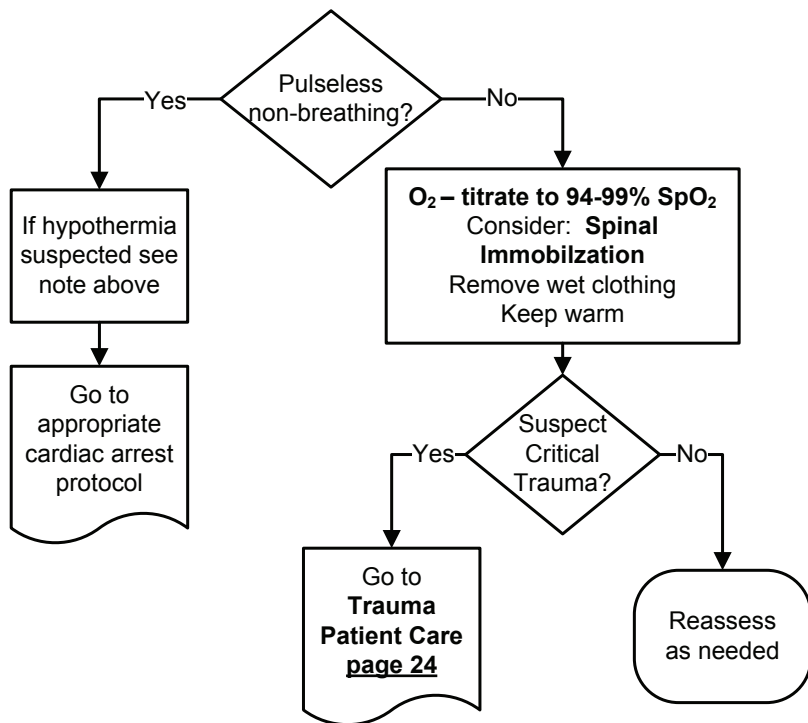
•If **trauma suspected**, see [page 24](#)

•If **sepsis suspected**, see [page 52](#)



SUBMERSION**•Routine Medical Care**

- Consider spinal precautions prior to extrication if possibility of neck trauma
- Rapid extrication from water
- If **hypothermia** suspected and the patient is in Ventricular Fibrillation, rapid transport to the closest receiving hospital is essential for rewarming. Patients who are hypothermic rarely respond to treatment. (see Hypothermia [page 16](#))
- Consider **CPAP** - see CPAP procedure ([page 126](#)) for indications

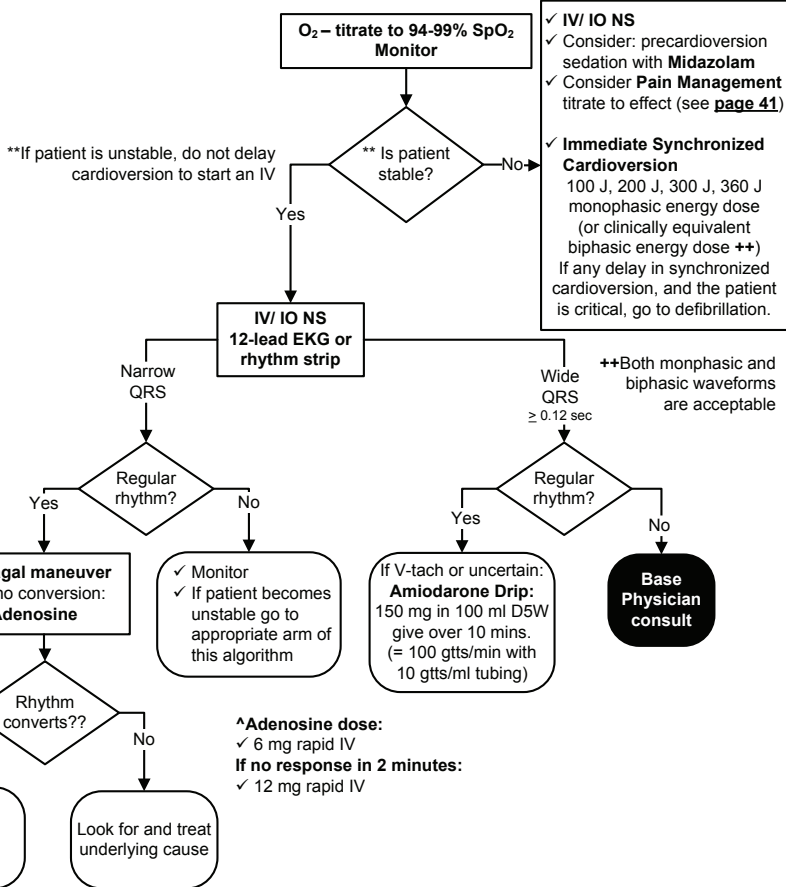


TACHYCARDIA**•Routine Medical Care****•Serious Signs and Symptoms:**

- | | | | |
|--------------|------------|--------------------|------------------------|
| → Chest Pain | → Acute MI | → BP < 90/systolic | → Shortness of Breath |
| → Shock | → CHF | → Decreased LOC | → Pulmonary Congestion |

•Synchronized Cardioversion:

- Stop if rhythm converts to Sinus Rhythm
- Immediate cardioversion is seldom needed for heart rate < 150 beats/min
- Precardioversion sedation in the awake patient whenever possible, however, use with caution in the hypotensive patient. See Sedation [page 138](#)



VENTRICULAR ASSIST DEVICES -VAD

OVERVIEW:

1. The VAD assists the native ventricle pumping action and provides the cardiac output needed to survive.
2. These devices are either pulsatile or continuous flow (non-pulsatile/pulseless). They are further divided into:
 - ➔ Left Ventricular Assist Devices (LVAD), The more common continuous flow pump located in the patient's thorax attached to the patients' left ventricle and aorta
 - ➔ Right Ventricular Assist Devices (RVAD),
 - ➔ Biventricular Assist Devices (BiVAD).

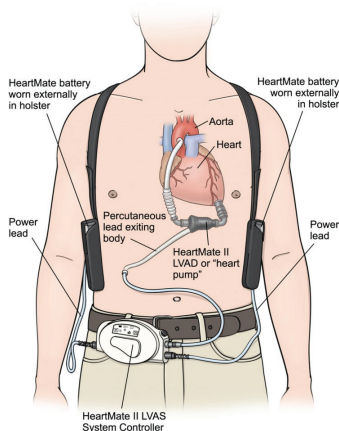
ASSESSMENT:

3. Assess for presence of a DNR, POLST or Advance Directive.
4. First ASSESS THE PATIENT, not the device.
 - ➔ The reason for the call may or may not be a problem with the VAD. VAD patients can and frequently do have other medical conditions.
 - ➔ Patients with a continuous flow VAD may have no discernible pulse or blood pressure.
 - ▶ Because there may be no palpable pulse, utilize other parameters for patient assessment (level of consciousness, skin signs, capillary refill, etc.)
 - ▶ Pulse oximetry may be unreliable.
 - ➔ Utilize the American Heart Association's C-A-B recommendations, with one addition:
 - ▶ C = Circulation / Connections and Function (device)
 - ▶ A = Airway
 - ▶ B = Breathing
 - ➔ ETCO2 will read accurately and be useful in assessment.
5. Assess the device to see if it is working.
 - ➔ Information regarding the type of device, the implantation hospital, and/or the VAD Coordinator contact telephone number may be available by a tag on the device, on the refrigerator, or on a medical alert bracelet.
 - ➔ If a caregiver is present, utilize his/her knowledge. The patient and their caregiver are the experts on scene for all issues related to the VAD. Listen to their directions regarding VAD device management until you are able to contact the VAD Coordinator.
 - ➔ The VAD Coordinator can help you decide the best course of action regarding assessment of the equipment. NOTE: Only the base hospital is legally allowed to give orders regarding patient care.
 - ➔ If the patient has a continuous flow VAD (non-pulsatile / pulseless), auscultate the left upper quadrant of the patient's abdomen for the "hum" of the VAD, which can help direct the appropriate actions.
 - ▶ A pulsatile VAD will make an audible sound without auscultation.
 - ▶ Pulsatile VADs are usually older devices which pump blood via pulsatile mechanism, generating a peripheral pulse.
 - ➔ Determine if the device has power.
 - ▶ If the device has power it does not necessarily mean that it is working, so the previous step is very important.
 - ▶ If the device has power, you will see a green light on the HeartMate II, the most commonly implanted device
 - ▶ On the HeartWare device, the display will clearly tell you the Liters per Minute (LPM) of blood flow.
 - ➔ Check the VAD for secure connections and that the batteries are charged and functional.
6. Remain patient-centric. Check the VAD device as directed, but remain aware of how your patient is doing clinically. Deliver routine medical care as required.
 - ➔ If the pump is pumping then the problem is usually with the patient, not the device.
 - ➔ Do ABCs in conjunction with your VAD assessment.

VENTRICULAR ASSIST DEVICES -VAD**TREATMENT/TRANSPORT:**

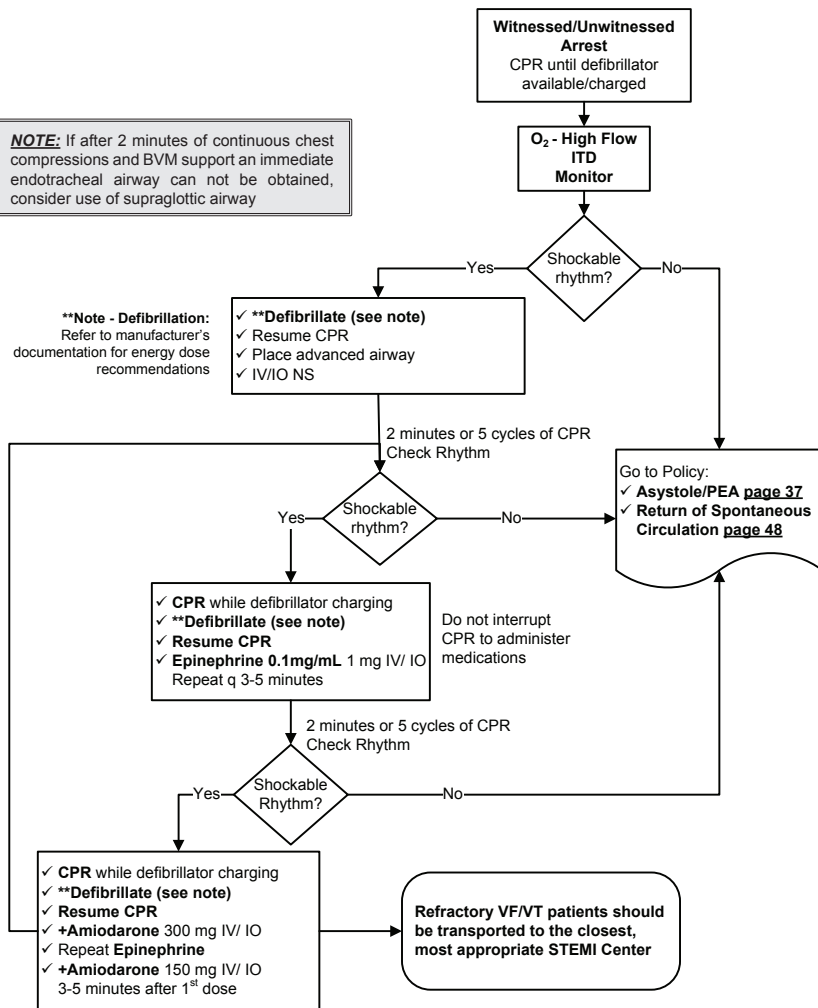
7. If the patient's condition is related to their VAD, and it is safe and reasonable, it is preferred to transport the patient to their Bay Area VAD centers (Kaiser Santa Clara, Stanford, UCSF, and CPMC) unless the patient has any of the following conditions:
 - 7.1 MINOR medical or trauma patients with adequate perfusion: Follow appropriate protocol and transport to ANY basic ED or hospital of record.
 - 7.2 Suspected STROKE (STROKE ALERT) patient: Follow Acute Stroke policy and transport to closest Stroke Center.
 - 7.3 Suspected STEMI (STEMI ALERT) patient: Follow CP Suspect Cardiac/STEMI policy and transport to closest STEMI Center.
 - 7.4 Trauma patient (activation): Follow Trauma Care Policy and transport to closest Adult Trauma Center.
 - 7.5 Cardiac Arrest or critical / unstable patients (poor perfusion): Follow Shock or appropriate resuscitation policy and transport to closest STEMI / Cardiac Arrest Center.
 - 7.6 "Ring down" the receiving hospital early to help the facility prepare for this highly specialized patient.

VAD CENTER	24-HOUR HOTLINE
Stanford Hospital and Clinics Lucille Packard Children's Hospital at Stanford*	650-723-6661
California Pacific Medical Center	415-232-6057
UC San Francisco	415-443-5823
Kaiser Santa Clara	408-318-2387
*Stanford Hospital and Clinics & Lucille Packard Children's Hospital at Stanford share the same VAD Coordinators	



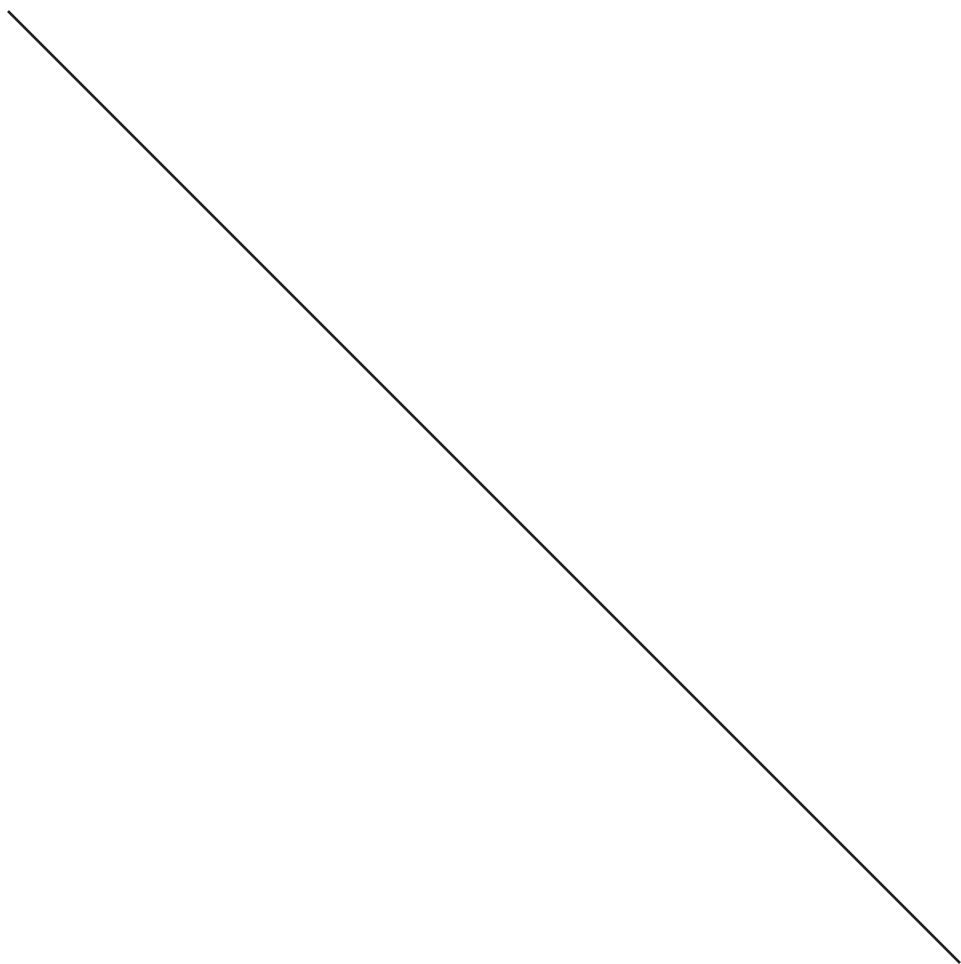
VENTRICULAR FIBRILLATION | VENTRICULAR TACHYCARDIA: PULSELESS**•Routine Medical Care****•Note: Use of a mechanical CPR device is required whenever available and appropriate**

NOTE: If after 2 minutes of continuous chest compressions and BVM support an immediate endotracheal airway can not be obtained, consider use of supraglottic airway



+Amiodarone: may only be given twice. Flush tubing with 20 ml NS

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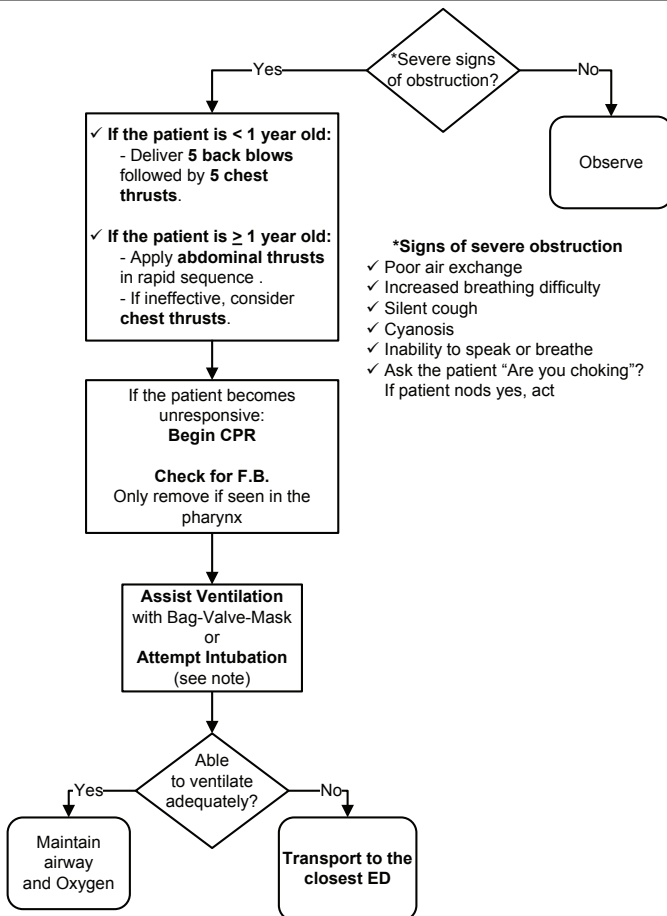


PEDIATRIC POLICIES TOC

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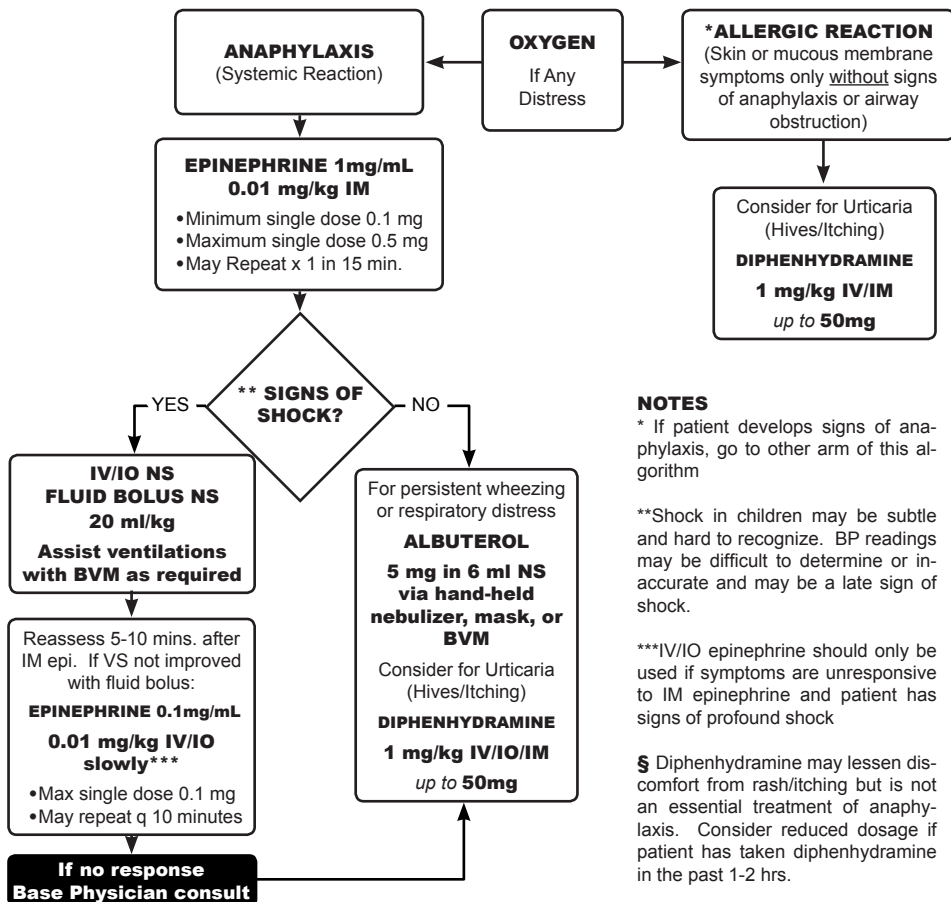
AIRWAY OBSTRUCTION**•Pediatric Routine Medical Care**

- If airway obstruction is caused by laryngeal trauma, see [page 24](#) "Trauma Patient Care"
- Do not use a tongue/jaw lift or perform blind finger sweeps
- Obstruction due to suspected epiglottitis:
 - Do not attempt to visualize the throat or insert anything into the mouth
 - Minimize outside stimulation. Keep the patient calm. Position of comfort.
- **Note:** Perform endotracheal intubation only if BVM ventilation is unsuccessful or impossible.
- **Rapid Transport**



ANAPHYLAXIS / ALLERGIC REACTION

- **Epinephrine IM** is the cornerstone of treatment of anaphylaxis and should be given as early as possible. It is best absorbed from an injection in the lateral thigh
- If the patient is in severe distress, **administer Epinephrine IM** and consider immediate transport
- **SIGNS OF ANAPHYLAXIS (Systemic Reaction)** – wheezing, repetitive cough, tightness in chest, stridor, difficulty swallowing or tightness in throat, change in voice, dizziness or feeling faint, abdominal complaints (pain, repeated vomiting, diarrhea or incontinence), anxiety, lethargy
- **SIGNS OF ANAPHYLACTIC SHOCK** – pallor, hypotension, cool, clammy mottled skin, altered sensorium
- **HIVES/ITCHING or FLUSHED SKIN** often accompanies anaphylaxis, but is not always present
- **Use a length-based resuscitation tape (LBRT) to determine pediatric drug doses and fluid bolus**

**NOTES**

* If patient develops signs of anaphylaxis, go to other arm of this algorithm

**Shock in children may be subtle and hard to recognize. BP readings may be difficult to determine or inaccurate and may be a late sign of shock.

***IV/IO epinephrine should only be used if symptoms are unresponsive to IM epinephrine and patient has signs of profound shock

§ Diphenhydramine may lessen discomfort from rash/itching but is not an essential treatment of anaphylaxis. Consider reduced dosage if patient has taken diphenhydramine in the past 1-2 hrs.

ALTERED LEVEL OF CONSCIOUSNESS

•Pediatric Routine Medical Care

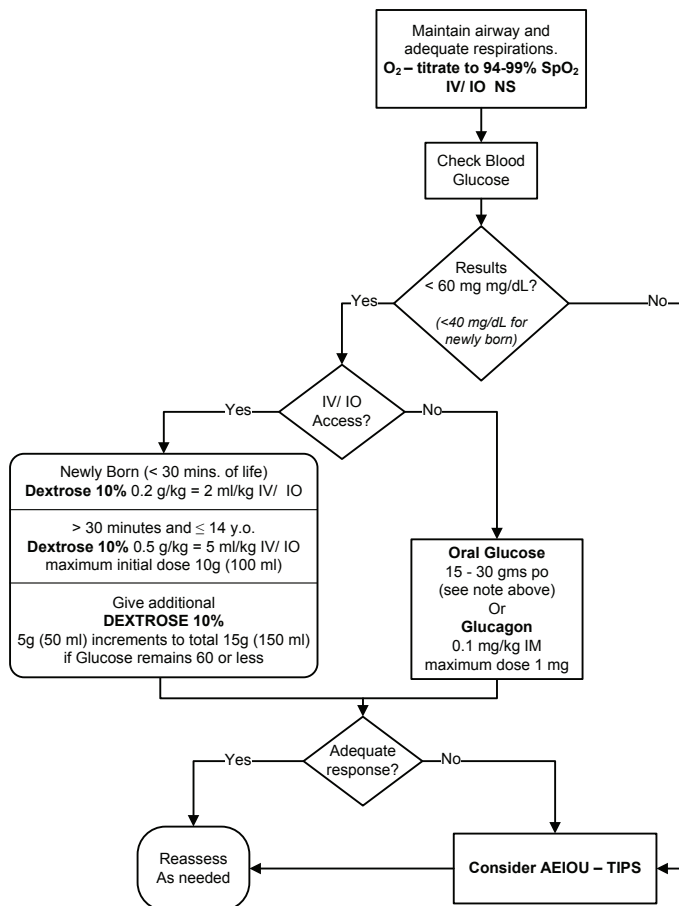
•Naloxone **should not** be given as treatment for altered level of consciousness in the absence of respiratory depression (respiratory depression = rate of less than 12 breaths per minute) (see [page 74](#))

•**Note: Oral Glucose** may be administered if the patient: **1)** is able to hold head upright; **2)** has a gag reflex; and, **3)** can self-administer the medication

•**Consult with the Base Physician** if the Blood Glucose reading is ≥ 60 mg% but hypoglycemia is suspected

•**Use an LBRT to determine pediatric drug doses**

(Shown underlined on the algorithm)



APPARENT LIFE-THREATENING EVENT - ALTE**•Pediatric Routine Medical Care****1. DEFINITION:**

- 1.1 An Apparent Life-Threatening Event (ALTE) was formally known as a “near-miss SIDS” episode
- 1.2 An ALTE is an episode that is frightening to the observer (may think the infant has died) and involves some combination of:
 - ▶ **Apnea** (central or obstructive)
 - ▶ **Color change** (cyanosis, pallor, erythema, plethora)
 - ▶ **Marked change in muscle tone** (limpness)
 - ▶ **Choking or gagging**
- 1.3 Usually occurs in infants < 12 months old, however, any child less than 2 years old who exhibits the symptoms in 1.2 may be considered an ALTE
- 1.4 Most have a normal physical exam when assessed by responding field personnel
- 1.5 50–60% have no known etiology
- 1.6 40–50% have an identifiable etiology
(e.g. Child abuse, SIDS, swallowing dysfunction, infection, bronchiolitis, seizures, CNS anomalies, tumors, cardiac disease, chronic respiratory disease, upper airway obstruction, metabolic disorders, or anemia)

2. MANAGEMENT

- 2.1 Assume the history given is accurate
- 2.2 Determine the **severity**, **nature** and **duration** of the episode
 - ▶ was the patient awake or asleep at the time of the episode
 - ▶ details of the resuscitation required
- 2.3 Obtain a **medical history**
 - ▶ known chronic diseases
 - ▶ evidence of seizure activity
 - ▶ current or recent infections
 - ▶ gastroesophageal reflux
 - ▶ inappropriate mixture of formula
 - ▶ recent trauma
 - ▶ medication history (current and recent)
- 2.4 Do a **comprehensive physical exam** that includes the general appearance of the child, skin color, extent of interaction with environment, and evidence of trauma
- 2.5 Perform **glucose analysis** if hypoglycemia suspected
(see ALOC **page 64** if B.S. < 60mg/ dL)
- 2.6 Treat any identifiable causes
- 2.7 Transport
- 2.8 **Note:** **Contact the Base Physician** for consultation if the parent/guardian is refusing medical care and/or transport, prior to completing a Refusal of Care form

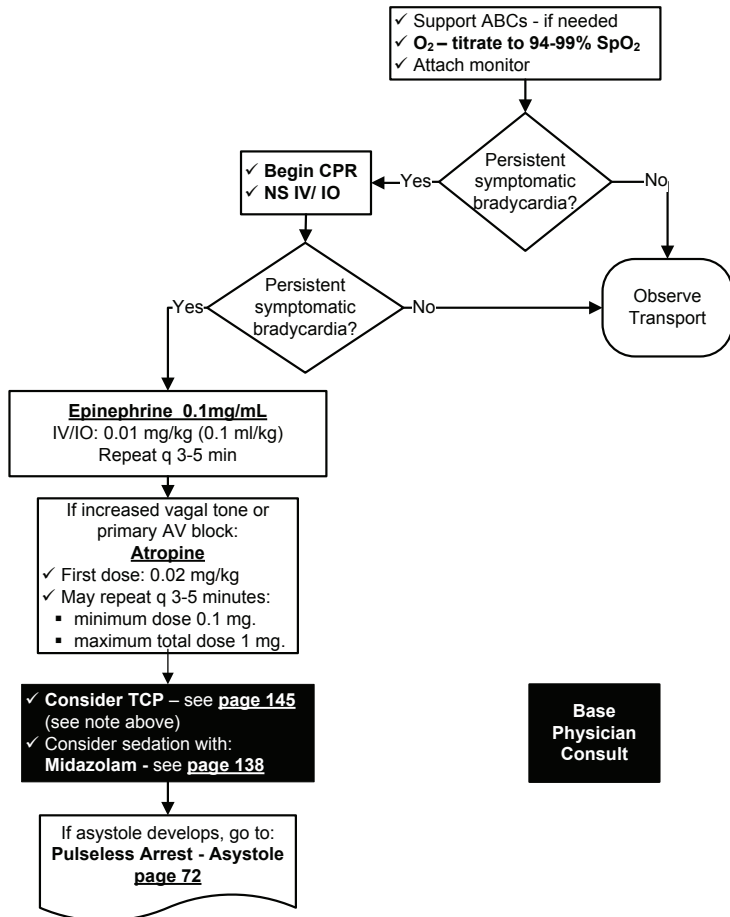
BRADYCARDIA**•Pediatric Routine Medical Care****•Consider and treat other possible causes:**

- Hypoxemia → Hypothermia → Head Injury
- Heart Block → Toxins/ drugs → Beta Blockers or calcium channel blockers

•Note: TCP reserved for children with profound symptomatic bradycardia refractory to BLS and ALS. Use pediatric electrodes if child weighs < 15 kg

•Use an LBRT to determine pediatric drug doses

(Shown underlined on the algorithm)



NEONATAL RESUSCITATION

•Pediatric Routine Medical Care

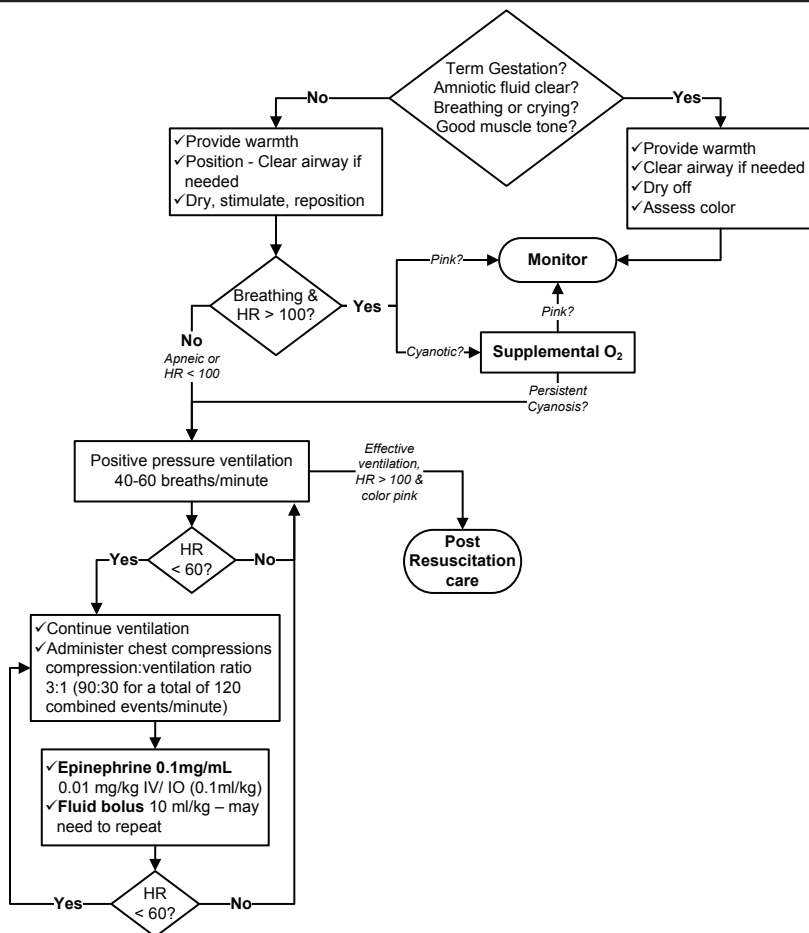
- Resuscitation should be initiated on **all** premature infants who meet the following criteria:

Weight: > 500 gms or 1 pound and **Gestational Age:** ≥ 20-24 weeks

- If naloxone considered for persistent respiratory depression, HR and color must first be restored
- Avoid naloxone for neonates whose mothers are suspected of long-term exposure to opioids
- Note:** Perform endotracheal intubation only if BVM ventilation is unsuccessful or impossible

•Use an LBRT to determine pediatric drug doses

(Shown underlined on the algorithm)



PAIN MANAGEMENT

- **Pediatric Routine Medical Care.** Monitor the patient closely
- **Have Naloxone readily available** to reverse any respiratory depression that may occur.
- Psychological coaching and BLS measures, including cold packs, repositioning, splinting, elevation and/or traction splints as appropriate, to reduce the need for pain medication.
- **The preferred route of administration is intranasal (IN)**

INTRODUCTION: The goal of this policy is to provide pain management to pediatric patients prior to and during transport as part of their treatment. Fentanyl is a powerful synthetic opiate that is 100 times stronger than morphine and should be used cautiously. Fentanyl should be administered in an amount sufficient to reduce their pain. Virtually all patients complaining of moderate to severe pain, regardless of etiology, may be candidates for pain management.

Pain Management Criteria	Base Contact Required	Treatment
Any patient with a complaint of significant pain, including: <ul style="list-style-type: none"> → Significant extremity injuries → Burn patients → Crush injury patients → Severe back and spinal pain → Immobilized patients → Abdominal pain 	<p>No unless > maximum dose of fentanyl is needed</p>	<p>O₂ – titrate to 94-99% SpO₂ Monitor EtCO₂ IN: Fentanyl 2 mcg/kg. Max single dose 100mcg. May repeat q 10 minutes to max total dose of 200 mcg IV NS or saline lock (if necessary) IV/IM/IO: Fentanyl 2 mcg/kg slow IV (over 1 minute). Max single dose 100mcg. May repeat q 5 minutes to max total dose of 200 mcg (q 10 minutes IM) SEE DOSE CHART BELOW</p>
Critical Trauma patients, including: <ul style="list-style-type: none"> ▶ Abdominal trauma ▶ Thoracic trauma <ul style="list-style-type: none"> → Decreased respirations → Altered mental status → Patients with pain not covered above → BP outside normal limits 	<p>Yes</p>	<p>Contact the Base Physician prior to administering any pain medication</p>

Pediatric Fentanyl Dose Chart (2 mcg/kg)

50 mcg/mL

WEIGHT	DOSE	VOLUME
5 kg	10 mcg	0.2 mL
10 kg	20 mcg	0.4 mL
20 kg	40 mcg	0.8 mL
30 kg	60 mcg	1.2 mL
40 kg	80 mcg	1.6 mL
> 50 kg	100 mcg	2 mL

Maximum single dose: 100 mcg

May repeat x 1 q 5-10 minutes to a max total dose of 200 mcg

PAIN MANAGEMENT

Document level of pain (as a fraction - e.g.: 2/10 or 6/10) prior to and after the administration of Fentanyl:

- ▶ < 3 years old – Behavioral tool or FACES Scale:
- ▶ 3–7 years old – FACES scale or visual analog scale
- ▶ 8–14 years old – visual analog scale

Face	0 No particular expression or smile	1 Occasional grimace or Frown, withdrawn, disinterested	2 Frequent to constant frown Clenched jaw, quivering chin
Legs	0 Normal or relaxed position	1 Uneasy, restless, tense	2 Kicking, or legs drawn up
Activity	0 Lying quietly, normal position, moves easily	1 Squirming, tense, shifting Back and forth	2 Arched, rigid or jerking
Cry	0 No cry (awake or asleep)	1 Moans or whimpers; occasional complaint	2 Cries steadily, screams, sobs, frequent complaints
Consolability	0 Content, relaxed	1 Reassured by "talking to, hugging; distractible	2 Difficult to console or comfort



0
NO
HURT



2
HURTS
LITTLE BIT



4
HURTS
LITTLE MORE



6
HURTS
EVEN MORE



8
HURTS
WHOLE LOT



10
HURTS
WORST

From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

Brief initial instructions:

Point to each face using the words to describe the pain intensity. Ask the child to choose face that best describes their own pain and record the appropriate number

Original instructions:

Explain to the person that each face is for a person who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain. Ask the person to choose the face that best describes how he/she is feeling

→ **Face 0** is very happy because he doesn't hurt at all

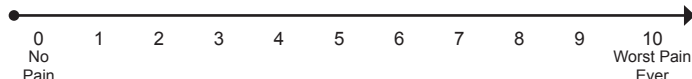
→ **Face 2** hurts just a little bit

→ **Face 4** hurts a little more

→ **Face 6** hurts even more

→ **Face 8** hurts a whole lot

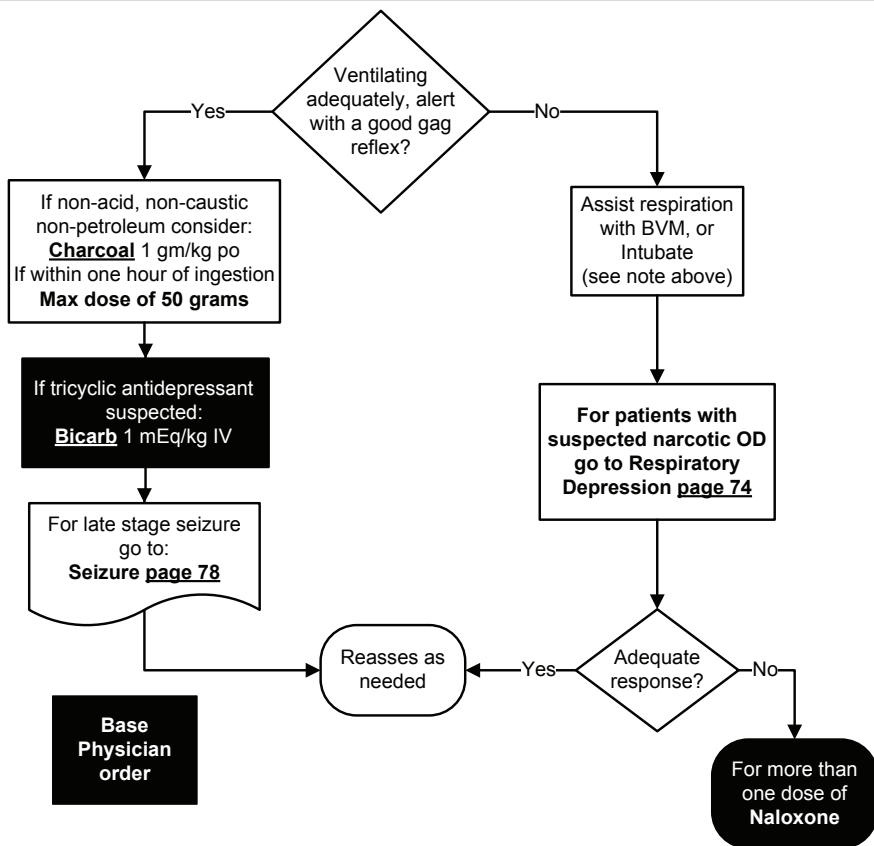
→ **Face 10** hurts as much as you can imagine, although you don't have to be crying to feel this bad

VISUAL ANALOG SCALE

PEDIATRIC DRUG CHART - (DRUGS NOT ON THE LBRT)

	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green
Weight	kg	3 - 5	6 - 7	8 - 9	10 - 11	12 - 14	15 - 18	24 - 28	30 - 36
lbs	6 - 11	13.2 - 15.4	17.6 - 19.8	22 - 24.2	26.4 - 30.8	33 - 39.6	41.8 - 48.4	52.8 - 61.6	66 - 79.2
ALBUTEROL	5 mg in 6 ml NS								
AMIODARONE DRIP 5 mg/kg Mix in 100mL D5W Give over 20-60 min. (50 to 17 gts/min), 10 gts/ml tubing	15 - 25mg	30 - 35mg	40 - 45mg	50 - 55mg	60 - 70mg	75 - 90mg	95 - 110mg	120-140mg	150-180mg
DEXTROSE 10%	Requires Base Physician Consult								
	Refer to Pediatric ALOC Policy on page 64								
DIPHENHYDRAMINE (Benadryl) 1 mg/kg IM	3 - 5mg	6 - 7mg	8 - 9mg	10 - 11mg	12 - 14mg	15 - 18mg	19 - 22mg	24 - 28mg	30 - 36mg
Allergic Reaction: 1mg/kg IM	3 - 5mg	6 - 7mg	8 - 9mg	10 - 11mg	12 - 14mg	15 - 18mg	19 - 22mg	24 - 28mg	30 - 36mg
EPINEPHRINE - Not cardiac arrest 1mg/mL - 0.01 mg/kg IM min. dose: 0.1mg / max. dose: 0.3mg [^]	0.1mg [#]	0.1mg [#]	0.1mg [#]	0.1-0.11mg	0.12-0.14mg	0.15-0.18mg	0.19-0.22mg	0.24-0.28mg	0.3mg [^]
0.1mg/mL - 0.01 mg/kg IV/IO max. dose: 0.1mg+	0.03-0.05mg	0.06-0.07mg	0.08-0.09mg	0.1mg+	0.1mg+	0.1mg+	0.1mg+	0.1mg+	0.1mg+
FENTANYL 2mcg/kg IV/IO/IM/IN	6-10mcg	12-14mcg	16-18mcg	20-22mcg	24-28mcg	30-36mcg	38-44mcg	48-56mcg	60-72mcg
ORAL GLUCOSE	15 - 30 gms								
IPRATROPIUM (Atrovent)	500 mcg (2.5 ml)								
Lidocaine 2%	0.5mg/kg (max dose 20 mg) slowly (1 ml over 30 seconds)								
MIDAZOLAM (Versed) Seizures: 0.1mg/kg IM	0.15-0.25mg	0.3-0.35mg	0.4-0.45mg	0.5-0.55mg	0.6-0.7mg	0.75-0.9mg	0.95-1.1mg	1.2-1.4mg	1.5-1.8mg
Sedation: 0.05mg/kg IV/IN 0.1mg/kg IM	0.3-0.5mg	0.6-0.7mg	0.8-0.9mg	1-1.1mg	1.2-1.4mg	1.5-1.8mg	1.9-2.2mg	2.4-2.8mg	3-3.6mg
MORPHINE SULFATE 0.05mg/kg IV 0.1mg/kg IM	0.15-0.25mg	0.3-0.35mg	0.4-0.45mg	0.5-0.55mg	0.6-0.7mg	0.75-0.9mg	0.95-1.1mg	1.2-1.4mg	1.5-1.8mg
PRALIDOXIME CHLORIDE (2-PAM)	0.3-0.5mg	0.6-0.7mg	0.8-0.9mg	1-1.1mg	1.2-1.4mg	1.5-1.8mg	1.9-2.2mg	2.4-2.8mg	3-3.6mg
	For use only by paramedics as members of medical haz/mat teams								
Hot zone: 20 mg/kg IM Warm Zone: 20-40 mg/kg IV/IM	60-100mg 120-200mg	120-140mg 240-280mg	160-180mg 320-360mg	200-220mg 400-440mg	240-280mg 480-520mg	300-360mg 600-720mg	380-440mg 760-880mg	480-560mg 960-1000mg	600-720mg 1000mg
SODIUM THIOSULFATE 0.4gm/kg IV slowly over 10 mins. Max dose: 12.5gm	1.2 - 2gm	2.4 - 2.8gm	3.2 - 3.6gm	4 - 4.4gm	4.8 - 5.6gm	6 - 7.2gm	7.6 - 8.8gm	9.6-11.2gm	12 - 12.5gm

PEDIATRIC DRUG CHART - (DRUGS NOT ON THE LBRT)

POISONING | INGESTION | OVERDOSE**•Pediatric Routine Medical Care****•Protect Yourself!** - See **page 157** "Medical Management of Hazardous Materials"**•Identify substance** – **contact the Base Physician** regarding other treatment options. Bring any containers, labels or a sample (if safe) into the hospital with the patient**•Determine type, amount, and time of the exposure****•Base Physician consult** for treatment options if suspecting: organophosphate poisoning, or calcium channel or beta blocker OD. Consider contacting Poison Control for other substances **800-222-1222****•Remove contaminated clothing.** Brush powders off, wash off liquids with large amount of water**•Withhold charcoal** if rapidly decreasing level of consciousness a possibility (e.g., tricyclic OD)**•Note:** Perform endotracheal intubation only if BVM ventilation is unsuccessful or impossible**•Use an LBRT to determine pediatric drug doses**(Shown underlined on the algorithm)

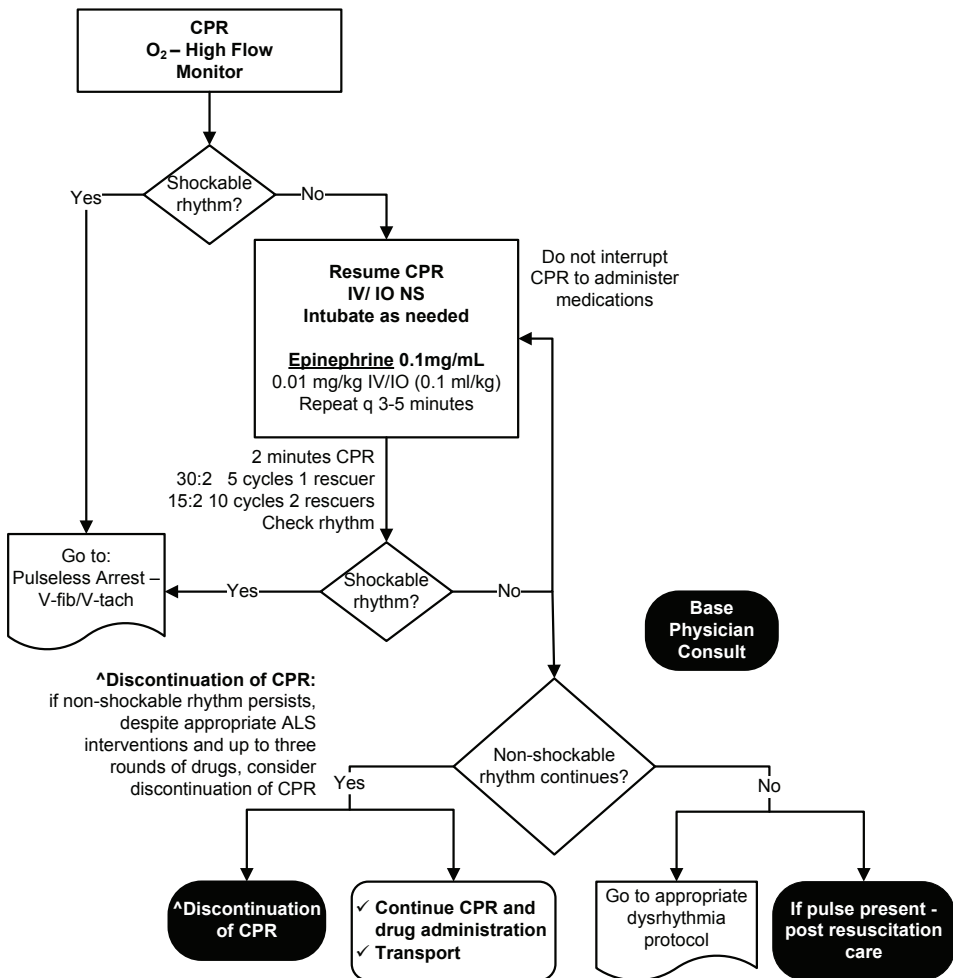
PULSELESS ARREST: ASYSTOLE, PEA**•Pediatric Routine Medical Care**

•In PEA, identify other causes and treat (See CPR [page 10](#))

•**Note:** Perform endotracheal intubation only if BVM ventilation is unsuccessful or impossible

•**Use an LBRT to determine pediatric drug doses**

(Shown underlined on the algorithm)

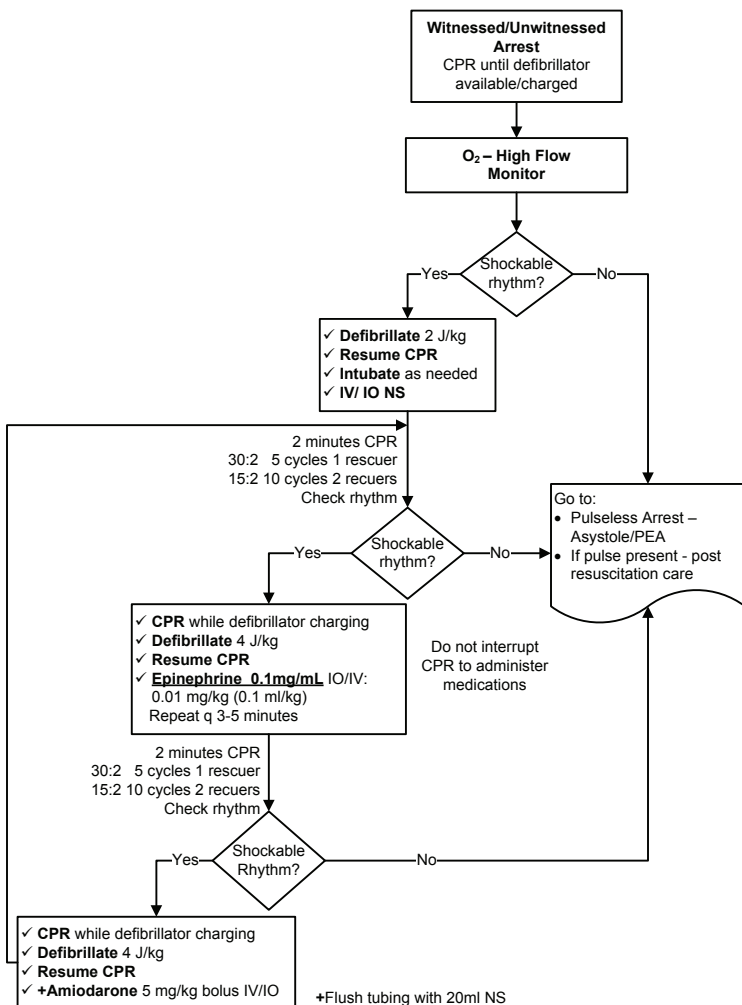


PULSELESS ARREST: VF/ VT**•Pediatric Routine Medical Care**

•**Note:** Perform endotracheal intubation only if BVM ventilation is unsuccessful or impossible

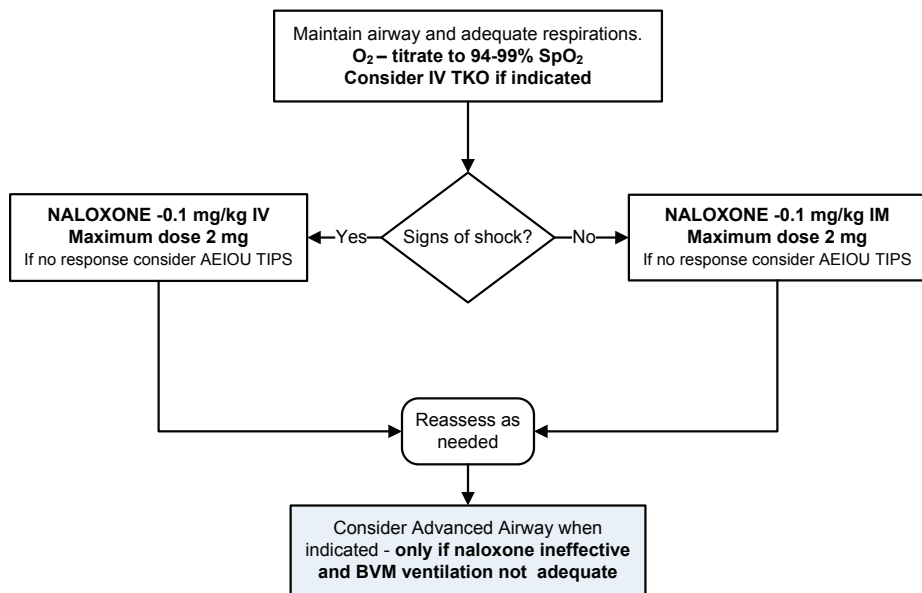
•**Use an LBRT to determine pediatric drug doses**

(Shown underlined on the algorithm)



RESPIRATORY DEPRESSION OR APNEA (SUSPECTED NARCOTIC OD)

- **Routine Medical Care**
- **SAFETY WARNING! Naloxone will cause acute withdrawal symptoms in patients who are habituated users of narcotics (whether prescribed or from abuse)**
- Use of diluted Naloxone IV and titration with small increments may help decrease adverse effects of naloxone
- **Naloxone treatment should only be given to patients with respiratory depression (rate less than 12)**
- Patients who are maintaining adequate respirations with decreased level of consciousness do not generally require Naloxone for management
- Naloxone can cause cardiovascular side effects (chest pain, pulmonary edema) or seizures in a small number of patients (1-2%)
- Be prepared for patient agitation or combativeness after naloxone reversal of narcotic overdose



RESPIRATORY DISTRESS (STRIDOR) – UPPER AIRWAY**•Pediatric Routine Medical Care****•CROUP/EPIGLOTTITIS:**

→ If the patient deteriorates, or becomes completely obstructed, positive pressure ventilation via bag-valve-mask should be attempted

→ **Do not** attempt to visualize the throat or insert anything into the mouth if epiglottitis suspected

→ Allow a parent to hold the child or the O₂ mask if the presence of the parent calms the child

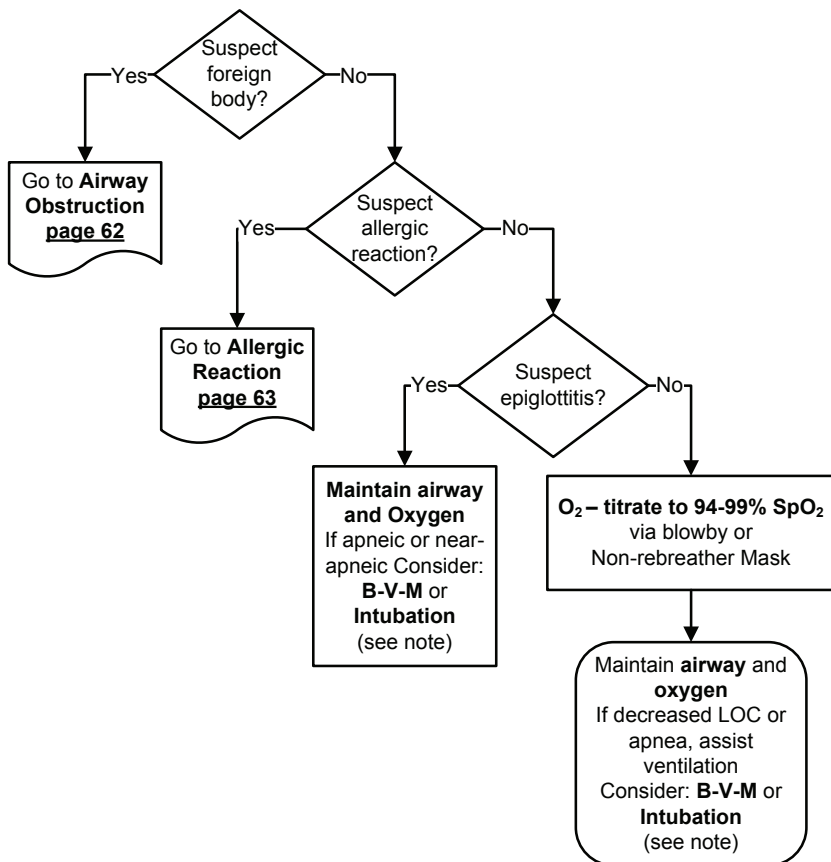
→ Minimize outside stimulation. Keep the patient calm

→ Position of comfort

•Note: Perform endotracheal intubation only if BVM ventilation is unsuccessful or impossible

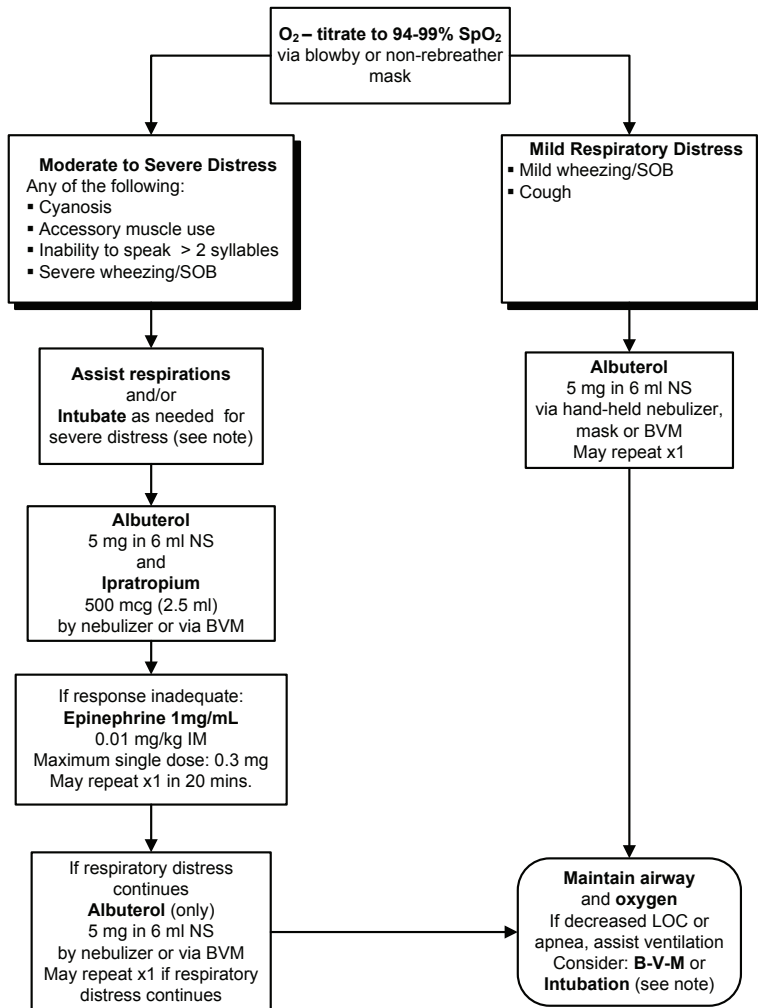
•Use an LBRT to determine pediatric drug doses

(Shown underlined on the algorithm)



RESPIRATORY DISTRESS (WHEEZING) – LOWER AIRWAY**•Pediatric Routine Medical Care**

- Position of comfort

•Use an LBRT to determine pediatric drug doses(Shown underlined on the algorithm)

The defined age of a pediatric patient is **14 years old or less**, and unless specified otherwise, pediatric protocols should be used to treat these patients. Note: An infant is considered to be < 1 year old. A child is considered to be ≥ 1 year old. Specified ages for transport or treatment other than 14 years old include:

A pediatric **LBRT** will be used to determine drug doses, fluid volumes, defibrillation settings and equipment sizes. The tape is designed to estimate a child's weight based on length (head to heel).

ROUTINE MEDICAL CARE - PEDIATRIC

SEIZURE

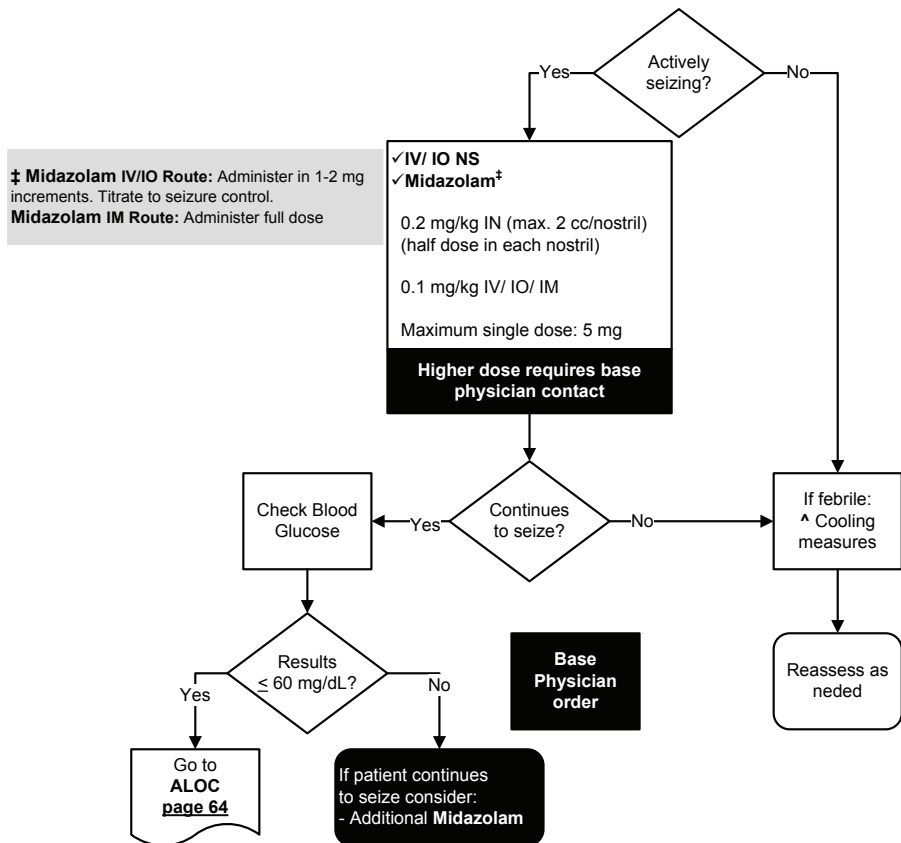
•Pediatric Routine Medical Care

•Midazolam should not be given unless the patient is actively seizing - 3 or more seizures in ≤ 5 minutes or any seizure lasting > 5 minutes

•**Cooling Measures**[^]: Loosen clothing and/or remove outer clothing/blankets

•**Use an LBRT to determine pediatric drug doses**

(Shown underlined on the algorithm)



SEIZURE - MIDAZOLAM DRUG CHART

MIDAZOLAM (Versed) 5 mg/ml Pediatric Dose Chart
(For Indicated Seizures Only)

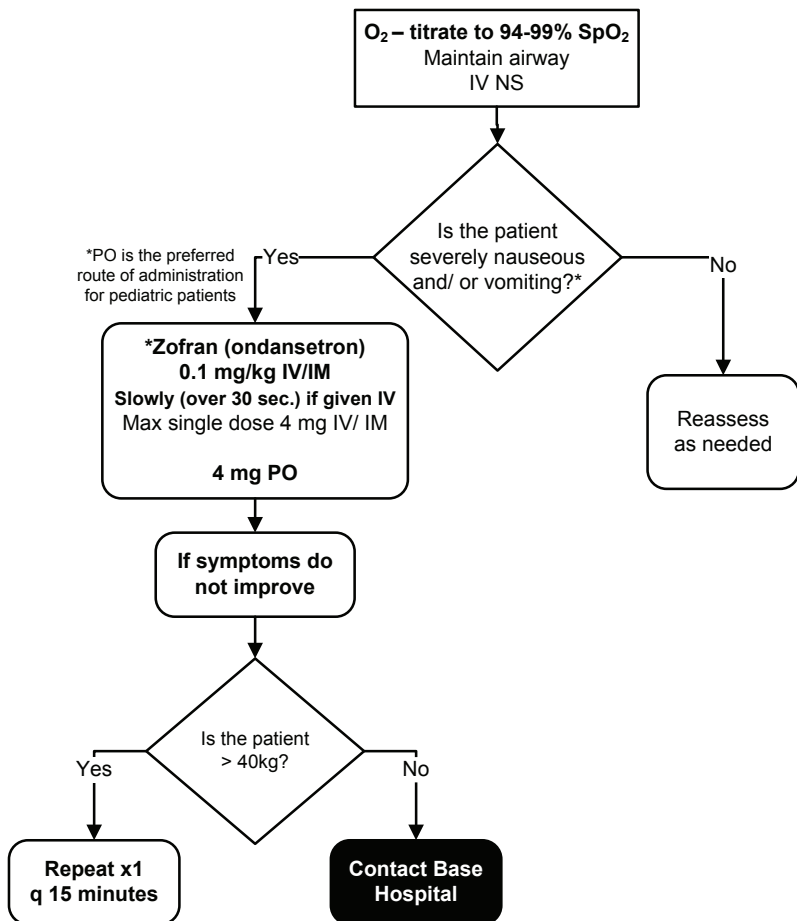
WEIGHT	GREY	PINK	RED	PURPLE	YELLOW	WHITE	BLUE	RED	GREEN	OTHER	OTHER
kg	3 –5	6–7	8–9	10–11	12–14	15–18	19–22	24–28	30–36	40	45
lbs	6–11	13–15	17–20	22–25	27–31	33–40	42–49	53–62	65–80	90	100
INTRAVENOUS / INTRAOSESQUE / INTRAMUSCULAR											
0.1 mg/kg IV/IO/IM Dose	0.4 mg	0.65 mg	0.85 mg	1 mg	1.25 mg	1.75 mg	2 mg	2.5 mg	3.3 mg	4 mg	4.5 mg
0.1 mg/kg IV/IO/IM Volume	0.08 ml	0.13 ml	0.17 ml	0.2 ml	0.25 ml	0.35 ml	0.4 ml	0.5 ml	0.65 ml	0.8 ml	0.9 ml
INTRANASAL											
0.2 mg/kg IN Dose	0.75 mg	1.25 mg	1.75 mg	2 mg	2.5 mg	3.5 mg	4 mg	5 mg	5 mg	5 mg	5 mg
0.2 mg/kg IN Volume	0.15 ml	0.25 ml	0.35 ml	0.4 ml	0.5 ml	0.7 ml	0.8 ml	1 ml	1 ml	1 ml	1 ml
USE A 1 ML SYRINGE FOR MIDAZOLAM ADMINISTRATION TO PEDIATRIC PATIENTS											

SEVERE NAUSEA

•Routine Medical Care
•Indications: Intractable vomiting or severe nausea in patients aged 4 years and older

•Contraindications: Hypersensitivity to 5-HT₃ receptor antagonists (i.e. – dolasetron (Anzemet), granisetron (Kytrel))

•Note #1: Consider other treatable causes

•Note #2: Administering Zofran rapidly can cause syncope
•Note #3: If patient has s/s of anaphylaxis/allergic reaction, follow Anaphylaxis/Allergic Reaction policy


SHOCK AND HYPOTENSION**•Pediatric Routine Medical Care**

•NOTE: Shock in children may be subtle and hard to recognize. Determining BP may be difficult and readings may be inaccurate

•IMPORTANT SIGNS OF SHOCK:

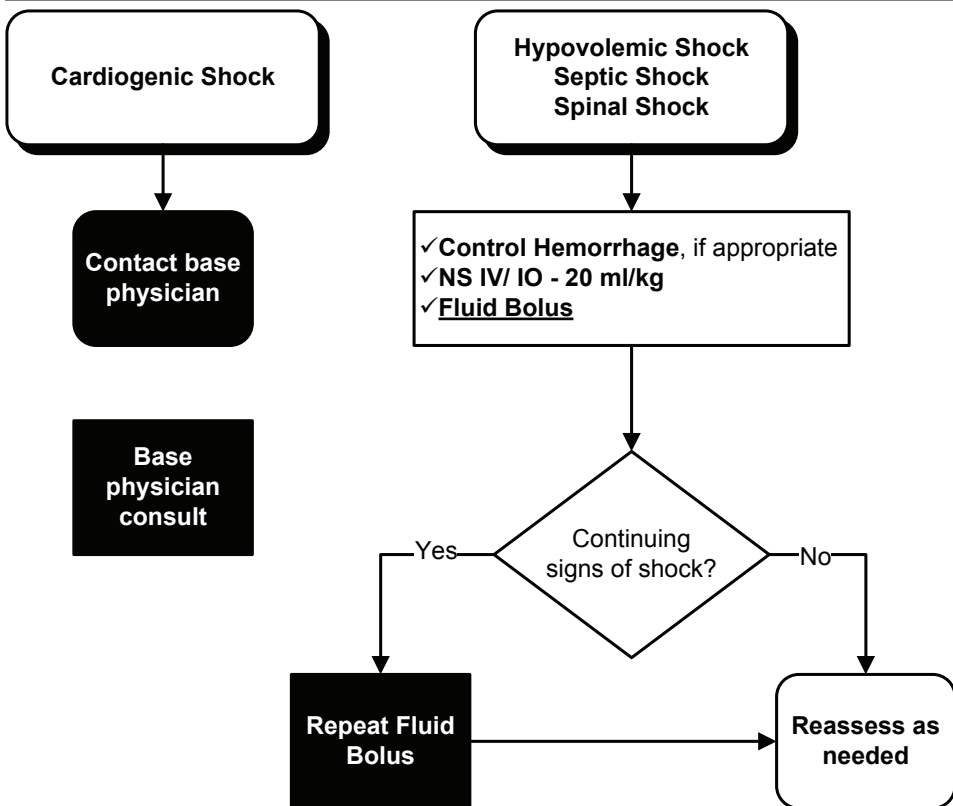
- Cool, clammy, mottled skin
- Pallor - due to decreased skin perfusion
- Altered level of consciousness - due to decreased perfusion to the brain
- BP < 70 systolic

•Initiate early transport and treat en route, if appropriate

- Go to Trauma Patient Care (page 24) if trauma suspected
- Go to Allergic Reaction (page 63) if anaphylaxis suspected

•Use an LBRT to determine pediatric drug doses

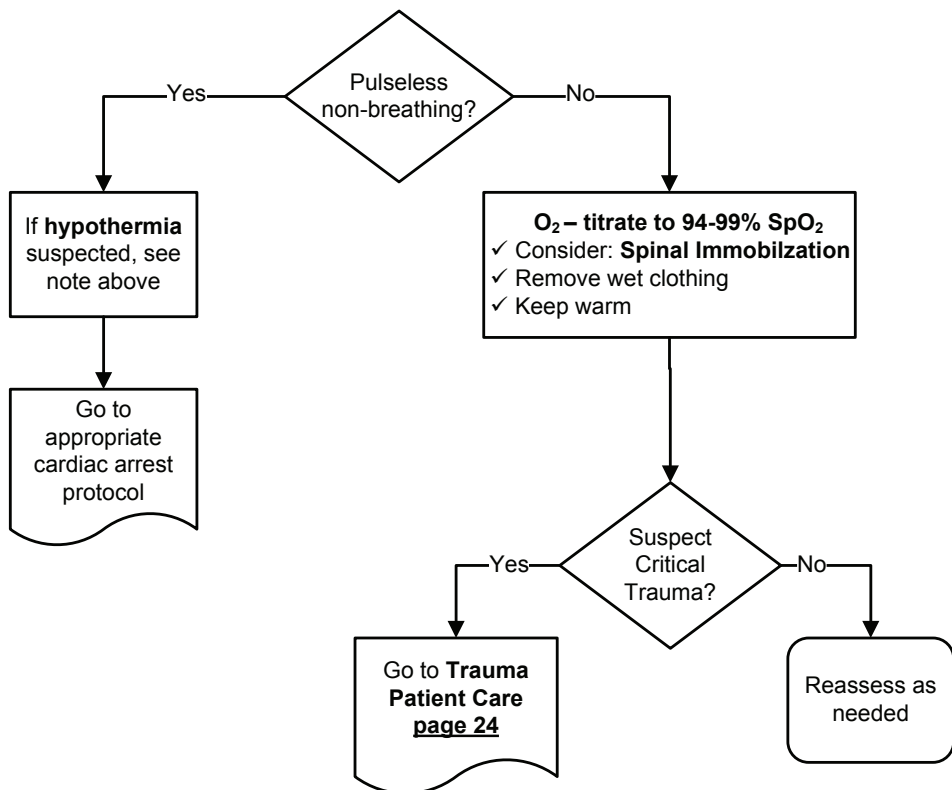
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SUBMERSION

•Pediatric Routine Medical Care

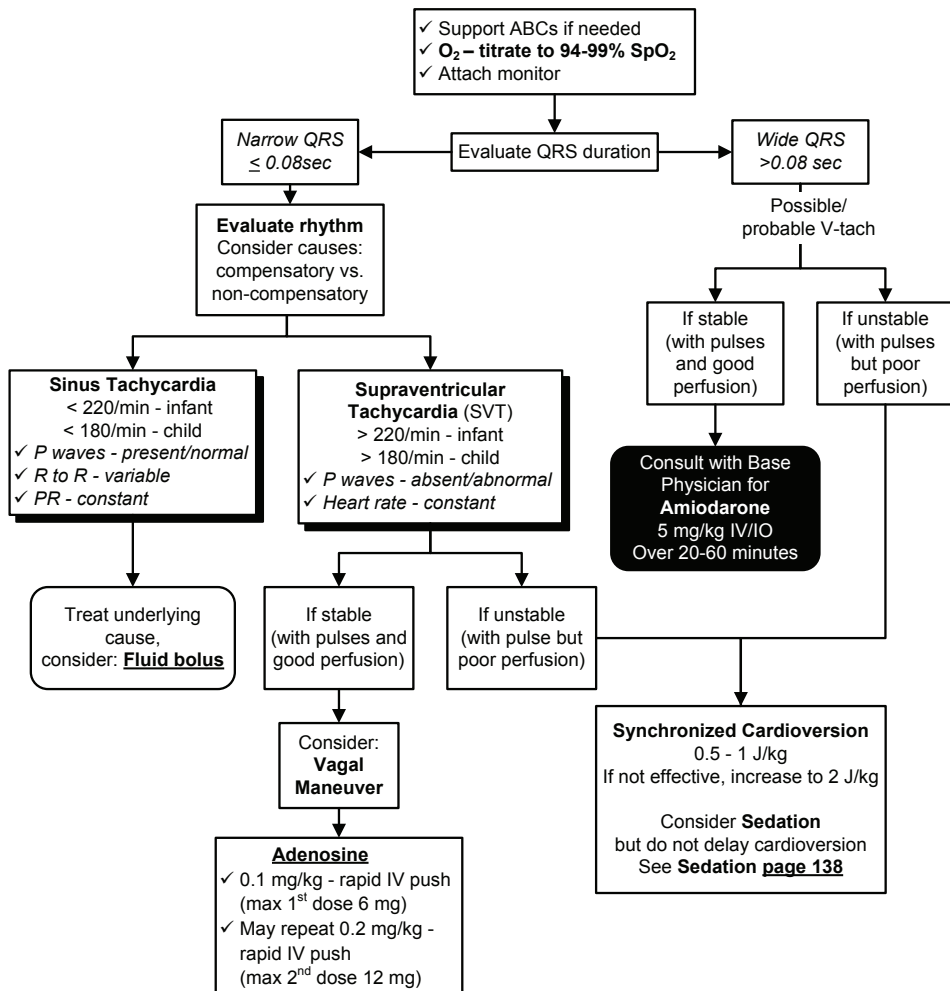
- Contact the Base Physician if patient is also showing signs of pulmonary edema before moving to the appropriate policy
- Consider CPAP (see CPAP [page 126](#) for indications)
- Consider spinal precautions prior to extrication if possibility of neck trauma. Otherwise place the patient on his/her side to protect the airway and prevent aspiration; be prepared to suction
- Rapid extrication from water
- Note:** If hypothermia is suspected and the patient is in ventricular fibrillation, rewarming is essential. Remove wet clothing, wrap in warm blankets and place in warm ambulance
- Initiate rapid transport to the closest most appropriate receiving hospital



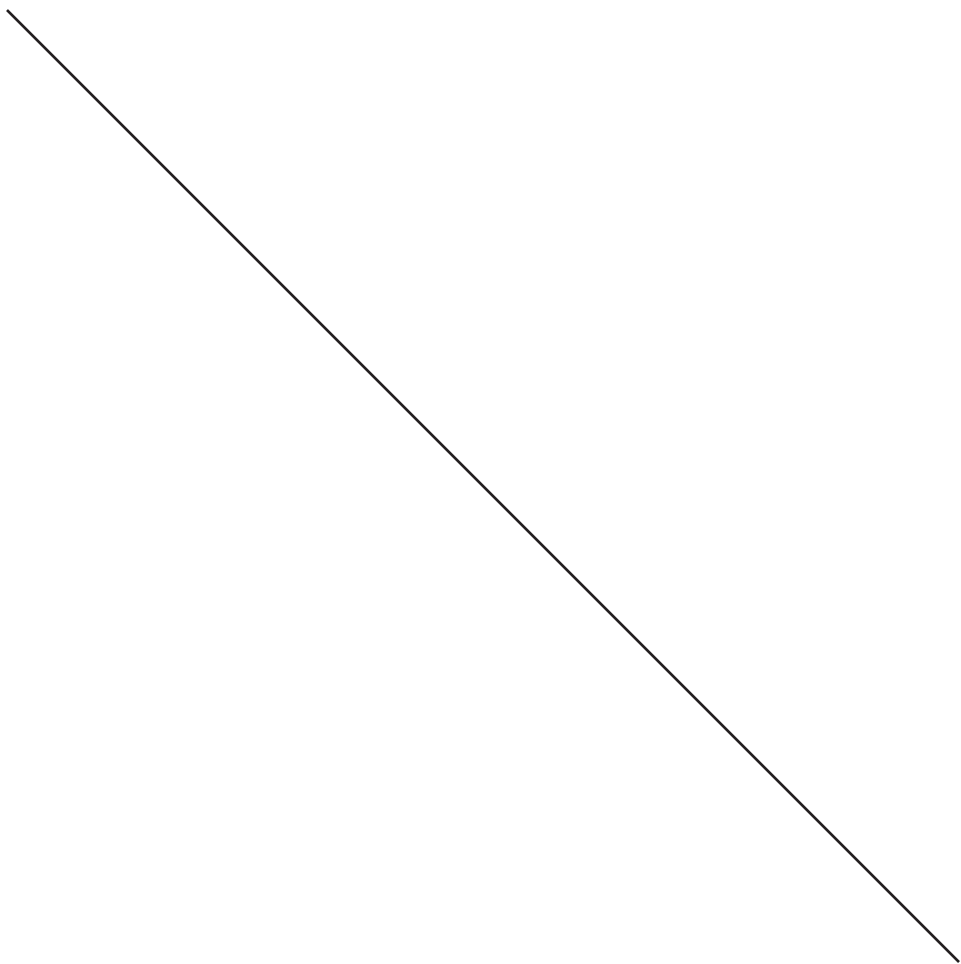
TACHYCARDIA

- **Pediatric Routine Medical Care**
- **Use an LBRT to determine pediatric drug doses**

(Shown underlined on the algorithm)



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ALS RESPONDER

1. **ALS PERSONNEL** - In Alameda County, an "ALS responder" is defined as: An individual who is licensed as a paramedic in the state of California and accredited to practice in Alameda County.
2. **MEDICAL MANAGEMENT**
 - 2.1 An ALS responder is responsible for the care of the patient after accepting responsibility from the first responder personnel until the care of the patient is turned over to the staff at the receiving hospital (if transported), or until the patient leaves the scene
 - 2.2 Consider a second **accredited** paramedic to accompany the transporting paramedic for critical patients (e.g. - arrest, complicated airway, ROSC, severe trauma, STEMI, etc.)
 - 2.3 Initiate "START" triage if appropriate. (See **page 159** "Multi-Casualty Incident - EMS Response (MCI)")
 - 2.4 If it is determined that helicopter transport of the patient might be necessary, activate the air ambulance and secure an appropriate landing zone. (see **page 93** "EMS Aircraft")
 - 2.5 A verbal **and** written Patient Care Report (PCR) must be completed for **every** patient, describing the care rendered and given to the staff at the receiving hospital. (exception: see **page 159** "Multi-Casualty Incident – EMS Response (MCI)" and **page 121** "Refusal of Service")
 - 2.6 The PCR should include a chief complaint, a general assessment, a physical assessment and emergency care rendered by the ALS responder.
3. **PATIENT CARE**
 - 3.1 The following should be performed for each patient during an emergency response:
 - 3.1.1 A physical assessment and initiation of emergency first aid, basic life support, and/or advanced life support, as necessary
 - 3.1.2 A PCR must be completed for **every** patient (exception: Multi-Casualty Incident and Refusal of Service)
 - 3.2 ALS responders are held to the following standards during patient care:
 - 3.2.1 American Heart Association, or an approved equivalent, for:
 - ▶ CPR
 - ▶ Basic Life Support (healthcare provider)
 - ▶ Advanced Cardiac Life Support
 - ▶ Emergency Cardiac Care
 - 3.2.2 PEPP (Pediatric Education for Prehospital Personnel), **or** Pediatric Advanced Life Support (PALS), **or** Emergency Pediatric Care (EPC), **or** an approved equivalent
 - 3.2.3 "S.T.A.R.T. Triage"
 - 3.2.4 OSHA and CAL-OSHA for infection control
 - 3.2.5 International Trauma Life Support (ITLS), PreHospital Trauma Life Support (PHTLS), Assessment and Treatment of Trauma (ATT) **or** an approved equivalent
 - 3.2.6 Approved training program curriculum for emergency first aid and patient assessment
 - 3.2.7 Alameda County EMS policies for patient care not covered by, or in addition to the above

BLS RESPONDER

1. **BLS PERSONNEL** - In Alameda County, BLS personnel are:
 - 1.1 Public Safety personnel (life guard, firefighter or peace officer) trained in **"First Aid for Public Safety Personnel"**, according to the standards defined in Title 22, Chapter 1.5
 - 1.2 Individuals who are **certified as an EMT-1** by a California local EMS agency, the California State Fire Marshall's Office, or another certifying authority
2. **MEDICAL MANAGEMENT**
 - 2.1 The first responder is responsible for the care of the patient, once contact with the patient has occurred and continues that responsibility until care of the patient is turned over to the arriving ambulance personnel
 - 2.2 If it is determined that the incident does not involve illness or injury, the first responder should cancel the ambulance response (see **page 114** "Responding Units - Canceling/Reducing Code ")
 - 2.3 If it is determined that helicopter transport of the patient might be necessary, activate the air ambulance and secure an appropriate landing zone (see **page 93** "EMS Aircraft")
 - 2.4 A verbal report **must** be given to the arriving ambulance personnel before the care of the patient may be turned over. The first responder form should include a chief complaint, physical assessment and emergency care rendered by the first responder
 - 2.5 The first responder must remain on scene until an approved ambulance provider arrives and patient care is transferred. The first responder may return to service once patient care is transferred, or remain on scene and assist as necessary
 - 2.6 Initiate "START" triage as necessary (see **page 159** "Multi-Casualty Incident - EMS Response")
3. **PATIENT CARE**
 - 3.1 The following should be performed for each patient during an emergency response:
 - 3.1.1 A physical assessment and initiation of emergency first aid or basic life support as necessary (see **page 49** "Routine Medical Care").
 - 3.1.2 A first responder form must be completed for **every** patient (exception: see **page 159** "Multi-Casualty Incident - EMS Response" and **page 121** "Refusal of Service").
 - 3.2 First responders are held to the following standards during patient care:
 - 3.2.1 American Heart Association for CPR and Basic Life Support (including airway obstruction and ventilation techniques).
 - 3.2.2 Approved training program curriculum for emergency first aid.
 - 3.2.3 "S.T.A.R.T. Triage" for MCI.
 - 3.2.4 Alameda County Policy "Multi-Casualty Incident - EMS Response" **page 159** for medical management at a MCI.
 - 3.2.5 OSHA and CAL-OSHA for infection control.
 - 3.2.6 Alameda County EMS policies for protocols not covered by, or in addition to the above

DEATH IN THE FIELD

1. INTRODUCTION

- 1.1 EMTs and paramedics do not pronounce death but rather determine death based on predetermined criteria. **An assessment by paramedics and consultation with the base hospital physician is required for determination of field death not covered by this policy**
- 1.2 Prehospital personnel are **not** required to initiate resuscitative measures when death has been determined or the patient has a valid "Prehospital Do Not Resuscitate" directive. Paramedics should contact the Base Physician anytime support in the field is needed
- 1.3 If a DNR directive is not present at the scene, but a person who is present and who can be identified as an immediate family member or spouse requests no resuscitation and has the full agreement of any others who are present on scene, resuscitation may be withheld or stopped if it has already been initiated
- 1.4 If **any** doubt exists, begin CPR immediately. Once initiated, CPR should be continued unless it is determined the patient meets determination of death criteria (section 2), a valid DNR form is presented (section 3) or the patient meets criteria to discontinue CPR (section 4)
- 1.5 Multi-casualty incidents are an exception to this policy
- 1.6 The local public safety agency having jurisdiction will be responsible for the body once death has been determined. **A dead body may not be moved or disturbed until a disposition has been made by the coroner's bureau**

2. DETERMINATION OF DEATH**2.1 CRITERIA FOR DETERMINATION OF DEATH IN THE FIELD:**

- 2.1.1 Apnea
- 2.1.2 Pulselessness - No heart tones **and** no carotid or femoral pulses.
- 2.1.3 Documented non-shockable rhythm:
 - ▶ EMT-1s: A non-shockable rhythm on the monitor for one minute
 - ▶ Paramedics: non-shockable rhythm on the monitor screen for one minute documented in 2 leads

2.2 Only the following patients who exhibit all of the above criteria for determination of death and one or more of the following conditions may be determined dead:

- 2.2.1 PATIENTS WHO ARE OBVIOUSLY DEAD ***Documentation of all Determination of Death criteria may not be necessary or possible in these patients*
 - ▶ Decomposition of body tissues**
 - ▶ Total decapitation**
 - ▶ Total incineration**
 - ▶ Total separation or destruction of the heart or brain**
 - ▶ Any degree of rigor
 - ▶ Lividity (dependant pooling of blood resulting in skin discoloration)
- 2.2.2 PATIENTS WHO ARE IN ARREST
 - ▶ **Medical (Cardiac) Arrest** - Discontinuation of CPR: if non-shockable rhythm persists, despite appropriate, aggressive ALS interventions for 30 minutes, consider discontinuation of CPR
 - ▶ **Trauma Arrest:** Adults only. (only paramedics may determine death using trauma arrest criteria)
 - ▶ Blunt trauma arrest
 - ▶ Penetrating trauma arrest
 - ▶ Prolonged extrication (> 15 minutes) with no resuscitation possible during extrication

DEATH IN THE FIELD

→ **Exception:** Patients with **suspected hypothermia** will be resuscitated and transported to the closest most appropriate emergency department

2.3 Actions

- 2.3.1 Immediately notify the coroner and appropriate public safety agency (if not already done) and remain on the scene until they arrive
- 2.3.2 Complete a Patient Care Report form documenting the above and leave the PCR with the patient at the scene in a safe place. If unable to do so, complete the PCR and fax to Coroner's office (510) 268-7333 as soon as possible, but not later than the end of your shift
- 2.3.3 Search for a donor card (see [page 91](#))
- 2.3.4 Rhythm documentation: EKG rhythm strips attached to the PCR, if available

3. DO NOT RESUSCITATE (DNR)

3.1 **Authority:** *Health and Safety Code, Division 2.5, Section 1798. Information contained in this policy is based on "Guidelines for EMS Personnel regarding Do Not Resuscitate Directives", Published by Emergency Medical Services Authority*

3.2 **Purpose:** To establish criteria for field personnel to determine the appropriateness of withholding or discontinuing resuscitative measures based on the wishes of the patient

3.3 **Philosophy:** Despite pre-planning, 9-1-1 is frequently activated when death is imminent. It is the intent of this policy to honor the wishes of the patient not to perform an unwanted resuscitation by establishing procedures whereby legitimate DNR directives are honored

3.4 **Definition:** Do Not Resuscitate (DNR) means **no**:

- ▶ assisted ventilation
- ▶ chest compressions
- ▶ defibrillation
- ▶ endotracheal intubation
- ▶ cardiotoxic drugs

3.5 **Approved Prehospital DNR Directives:** - The Prehospital DNR form **may be an original or a copy**. All forms require the patient's signature (or signature of appropriate surrogate) and the signature of the patient's physician to be valid. Field personnel may withhold or discontinue resuscitative measures, if presented with **any one** of the following:

- ▶ A Physician Orders for Life-Sustaining Treatment (POLST) Program form.
- ▶ An approved medallion (e.g. "Medic-Alert") inscribed with the words: "Do Not Resuscitate-EMS". Call the 800 number on the medallion for access to advance healthcare directives, including living wills, durable power of health care attorney documents, and organ, tissue, and anatomical gift donation information
- ▶ The patient's physician is present on scene and issues a DNR order, or issues a DNR order verbally over the phone to field personnel
- ▶ A DNR order signed by a physician in the patient's chart at a licensed health facility.
- ▶ An EMSA/CMA "Prehospital Do Not Resuscitate" form

3.6 **Medical Treatment of the patient with a DNR or End of Life Act directive:** If the patient requests treatment, including resuscitation, the request should be honored. The patient should receive treatment for pain, dyspnea, major hemorrhage, relief of choking or other medical conditions.

- ▶ However, if the patient has stopped breathing and is unconscious, the DNR directive should be honored
- ▶ Resuscitation should be withheld if there are DNR orders or evidence (e.g. - Final Attestation Form) that the patient is exercising their rights under the End of Life Act.

DEATH IN THE FIELD


- 3.7 **Patient Identification:** Correct identification of the patient is crucial, but after a good faith attempt to identify the patient, the presumption should be that the identity is correct if proper documentation is present and the circumstances are consistent. A reliable witness may be used to identify the patient, if available
- 3.8 **PROCEDURE - With an approved prehospital DNR directive (The POLST form is preferred):**
- 3.8.1 Field personnel should not start resuscitation. If CPR or other resuscitative measures were initiated prior to the discovery of the DNR directive, discontinue resuscitation immediately
- 3.8.2 EMTs cancel the ambulance response
- 3.8.3 If the patient is transported, a copy of the DNR directive should go with the patient
- 3.8.4 If the patient arrests en route: 1) do not start resuscitation and 2) continue to the original destination
- 3.9 **Documentation:**
- 3.9.1 If resuscitation was started and then discontinued, document the time on the PCR
- 3.9.2 A copy of the DNR directive should be attached to the PCR. If a copy is unavailable, document the following:
- ▶ The type of DNR directive (e.g.: written in the patient chart at a licensed care facility, issued verbally over the phone)
 - ▶ The date the order was issued
 - ▶ The name of the physician
- 3.9.3 If the patient's physician issued the DNR order verbally while **on scene**, document the name of the physician and have the physician sign the PCR
- 3.9.4 **Other forms or directives:** Advanced Health Care Directive (AHCD) (enacted in 2000) replaces the California Durable Power of Attorney for Health Care, the California Natural Death Act and living wills; although all of these forms are considered valid. The AHCD contains a section called "Health Care Instructions" that has specific information regarding options selected by the patient regarding resuscitation
4. **DISCONTINUATION OF CPR**
- 4.1 CPR may be discontinued:
- ▶ If CPR was started prior to the discovery of an approved DNR directive
 - ▶ Upon further examination the patient meets the determination of death criteria
 - ▶ Following an unsuccessful resuscitation - paramedics only
 - ▶ Upon request of an immediate family member or spouse (as specified in section 1.3)
- 4.2 **Once CPR has been discontinued:** all therapeutic modalities initiated during the resuscitation must be left in place until it has been determined by the coroner's bureau that the patient will not be a coroner's case. This includes equipment such as: airways, endotracheal tubes, IV catheters, monitor electrodes, and personal items including clothing, jewelry etc.
- 4.3 **If the coroner's bureau releases the body while field personnel are still on scene:**
- ▶ Document the name and badge number of the coroner's investigator on the PCR
 - ▶ Remove and properly dispose of all medical equipment used during the resuscitation attempt

DEATH IN THE FIELD

5. SEARCH FOR A DONOR CARD *(Authority: § 7152.5 Health & Safety Code)*

- 5.1 The following persons shall make a reasonable search for a document of gift or other information identifying the bearer as a donor or as an individual who has refused to make an anatomical gift:
- ▶ **A law enforcement officer** upon finding an individual who the officer believes is dead or near death
 - ▶ **Ambulance or emergency medical personnel**, upon providing emergency medical services to an individual, when it appears that death of that individual may be imminent. This requirement shall be secondary to the requirement that ambulance or emergency medical personnel provide emergency medical services to the patient
- 5.2 If a document of gift or evidence of refusal to make an anatomical gift is located by the search required above, the hospital and/or coroner's bureau (as applicable) shall be notified of the contents and the document or other evidence shall be sent with the patient
- 5.3 The above search and the results of the search must be documented on the PCR (patient care report)
- 5.4 A person who fails to discharge the duties imposed by this section is not subject to criminal or civil liability but is subject to appropriate administrative sanctions

DEATH IN THE FIELD

HIPAA PERMITS DISCLOSURE OF POLST TO OTHER HEALTH CARE PROVIDERS AS NECESSARY			
 EMSA #111 B (Effective 1/1/2016)		<h2 style="margin: 0;">Physician Orders for Life-Sustaining Treatment (POLST)</h2> <p>First follow these orders, then contact Physician/NP/PA. A copy of the signed POLST form is a legally valid physician order. Any section not completed implies full treatment for that section. POLST complements an Advance Directive and is not intended to replace that document.</p>	
		Patient Last Name:	Date Form Prepared:
		Patient First Name:	Patient Date of Birth:
		Patient Middle Name:	Medical Record #: (optional)
A	CARDIOPULMONARY RESUSCITATION (CPR): <i>If patient has no pulse and is not breathing. If patient is NOT in cardiopulmonary arrest, follow orders in Sections B and C.</i>		
Check One	<input type="checkbox"/> Attempt Resuscitation/CPR (Selecting CPR in Section A <u>requires</u> selecting Full Treatment in Section B) <input type="checkbox"/> Do Not Attempt Resuscitation/DNR (Allow <u>Natural</u> Death)		
B	MEDICAL INTERVENTIONS: <i>If patient is found with a pulse and/or is breathing.</i>		
Check One	<input type="checkbox"/> Full Treatment – primary goal of prolonging life by all medically effective means. In addition to treatment described in Selective Treatment and Comfort-Focused Treatment, use intubation, advanced airway interventions, mechanical ventilation, and cardioversion as indicated. <input type="checkbox"/> Trial Period of Full Treatment. <input type="checkbox"/> Selective Treatment – goal of treating medical conditions while avoiding burdensome measures. In addition to treatment described in Comfort-Focused Treatment, use medical treatment, IV antibiotics, and IV fluids as indicated. Do not intubate. May use non-invasive positive airway pressure. Generally avoid intensive care. <input type="checkbox"/> Request transfer to hospital <u>only</u> if comfort needs cannot be met in current location. <input type="checkbox"/> Comfort-Focused Treatment – primary goal of maximizing comfort. Relieve pain and suffering with medication by any route as needed; use oxygen, suctioning, and manual treatment of airway obstruction. Do not use treatments listed in Full and Selective Treatment unless consistent with comfort goal. Request transfer to hospital <u>only</u> if comfort needs cannot be met in current location. Additional Orders: _____ _____ _____		
C	ARTIFICIALLY ADMINISTERED NUTRITION: <i>Offer food by mouth if feasible and desired.</i>		
Check One	<input type="checkbox"/> Long-term artificial nutrition, including feeding tubes. Additional Orders: _____ <input type="checkbox"/> Trial period of artificial nutrition, including feeding tubes. _____ <input type="checkbox"/> No artificial means of nutrition, including feeding tubes. _____		
D	INFORMATION AND SIGNATURES:		
Discussed with: <input type="checkbox"/> Patient (Patient Has Capacity) <input type="checkbox"/> Legally Recognized Decisionmaker			
<input type="checkbox"/> Advance Directive dated _____, available and reviewed → Health Care Agent if named in Advance Directive: <input type="checkbox"/> Advance Directive not available Name: _____ <input type="checkbox"/> No Advance Directive Phone: _____			
Signature of Physician / Nurse Practitioner / Physician Assistant (Physician/NP/PA) My signature below indicates to the best of my knowledge that these orders are consistent with the patient's medical condition and preferences.			
Print Physician/NP/PA Name:		Physician/NP/PA Phone #:	Physician/PA License #, NP Cert. #:
Physician/NP/PA Signature: (required)		Date:	
Signature of Patient or Legally Recognized Decisionmaker I am aware that this form is voluntary. By signing this form, the legally recognized decisionmaker acknowledges that this request regarding resuscitative measures is consistent with the known desires of, and with the best interest of, the individual who is the subject of the form.			
Print Name:		Relationship: (write self if patient)	
Signature: (required)		Date:	FOR REGISTRY USE ONLY
Mailing Address (street/city/state/zip):		Phone Number:	
SEND FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED			

EMS AIRCRAFT TRANSPORT

NOTE: *EMS Aircraft utilized in Alameda County for prehospital emergency care will meet the qualifications specified in Title 22, Chapter 8.*

1. INITIATING EMS AIRCRAFT RESPONSE

- 1.1 The decision to request an EMS Aircraft is based on medical and scene management considerations
- 1.2 Prior to arrival at the scene - An EMS Aircraft may be activated by any responding agency if there may be a potential need for air transport based on the incident type or location of the victim(s)
- 1.3 All responding agencies shall be notified when an EMS Aircraft has been requested
- 1.4 When on-scene, the decision to activate an EMS Aircraft shall be made by the IC (Incident Commander or his/her designee). upon:
 - ▶ the advice of on-scene medical personnel and/or
 - ▶ the suitability of the scene for helicopter operations

2. CONSIDERATIONS FOR REQUESTING EMS AIRCRAFT: (one or more of the following conditions exists)

- 2.1 Long response times to scene (>20 minutes)
- 2.2 Inaccessibility to the scene by ground personnel or equipment
- 2.3 Extended extrication
- 2.4 Extended transport to an appropriate facility > 20 minutes (e.g. remote area, peak traffic, closest most appropriate facility closed)
- 2.5 Patients meeting Critical Trauma Patient Criteria (see page 25) with extended transport time to an approved Trauma Center
- 2.6 Patients requiring advanced skills not in the Alameda County Paramedic scope of practice. (e.g. RSI, Surgically places thoracostomy tubes)
- 2.7 Patient conditions where a decrease in transport time to an appropriate medical facility may be a significant factor
- 2.8 Patients in cardiac arrest from drowning or penetrating trauma with a short down time. In general, **all other patients with cardiac arrest should not be transported in an air ambulance or rescue aircraft**
- 2.9 A multi-casualty incident exists with a need for increased resources

3. EMS AIRCRAFT DISPATCH

- 3.1 All EMS Aircraft activations shall be made through ALCO-CMED. ALCO should be given the following information if available:
 - ▶ Number of Patients and acuity of each
 - ▶ Type and extent of injuries
 - ▶ Location of Landing Site (use Thomas Brothers Map coordinates or Longitude and Latitude, if possible)
 - ▶ Nearest landmarks (e.g., highways, railroad tracks, water towers)
 - ▶ Weather conditions, especially high winds, fog or visibility problems.

4. COMMUNICATION

- 4.1 ALCO-CMED shall request activation of the EMS Aircraft that has the shortest total response time to the scene/rendezvous site
- 4.2 The responding EMS Aircraft may contact ALCO on VHF TAC 4 (154.070) while en route to the scene to confirm radio frequency and ground contact/incident identifier
 - ▶ The preferred frequency for helicopter to ground unit communications is: CALCORD (156.075)
 - ▶ Alternate frequencies are VHF TAC 4 (154.070) and VHF TAC 5 (154.235), but should be

EMS AIRCRAFT TRANSPORT

coordinated through ALCO-CMED

- Fire White (154.280) is not authorized for cross patch to an ambulance or helicopter

- 4.3 The responding EMS Aircraft will advise ALCO of ETA in minutes and clock hours. ALCO shall advise the requesting agencies of the EMS Aircraft's ETA
- 4.4 ALCO shall keep responding/on scene ground personnel updated as to aircraft status (cancellation, delays, inability to respond, etc.)
- 4.5 If multiple aircraft are responding to the scene or in the area of the incident, ALCO shall attempt to notify each aircraft of multiple aircraft response
- 4.6 The EMS Aircraft shall contact the receiving hospital prior to arrival. A patient care report and an ETA should be given

5. UTILIZATION OF RESCUE AIRCRAFT

- 5.1 A number of public agencies, including East Bay Regional Park District, California Highway Patrol, Coast Guard and various military units, operate aircraft which are classified as ALS Rescue Aircraft, BLS Rescue Aircraft or Auxiliary Aircraft
- 5.2 The decision to transport in a rescue aircraft should be made by on-scene medical personnel and is based on patient condition and availability of other resources
- 5.3 Considerations for utilizing rescue aircraft:
 - the patient is in an area that is inaccessible to ground transport vehicle,
 - the ETA of a ground ambulance and/or Air Ambulance exceeds the loading and lift-off time by the rescue aircraft
 - an air ambulance is unavailable
 - the patient clearly does not require the level of service provided by an air ambulance
 - a rescue requiring the use of a hoist device is indicated
- 5.4 When an EMT-P accompanies a patient in a BLS rescue aircraft, the EMT-P must:
 - have available all appropriate medical equipment needed to care for the patient;
 - receive orientation to the aircraft and to medical air transport procedures according to Title 22, Chapter 8, Section 100302

6. SAFETY/LANDING - Safety rules at the scene include:

- 6.1 Landing Zone considerations (L-Z):
 - 75' x 75' during daylight, 100' x 100' during night hours,
 - clear of cross wires, debris, or other obstacles, relatively flat
 - Consult CHP/Law Enforcement when landing on roadways
- 6.2 Ground personnel should coordinate with public safety agency for road closures, if necessary
- 6.3 The fire department should determine the landing zone and assure scene safety during landing
- 6.4 Before clearing EMS aircraft to land the IC must ensure that the helicopter will not block the transport of patients out of the scene by ground. If ground transport will be blocked then the IC must make sure that ground units with critical patients have departed before clearing aircraft to land
- 6.5 The pilot in command shall have the final authority as to the safe operation of the air transport. If, in the pilot's judgment, patient transport by an EMS aircraft would be unsafe, regardless of the patient's condition, the patient should be transported by ground ambulance
- 6.6 Ground personnel shall not approach the aircraft unless directed to do so and accompanied by the aircraft crew
- 6.7 Regardless of how the request was initiated, only the IC shall authorize the landing of a helicopter at

EMS AIRCRAFT TRANSPORT

the scene. Coordination between medical personnel and the IC is essential

7. CANCELING EMS AIRCRAFT RESPONSE

- 7.1 Ground transport should be utilized if:
 - ▶ the overall prehospital time will not be decreased by the use of air transport and/or
 - ▶ the patient does not meet criteria identified in Section 3 for Requesting EMS Aircraft.
- 7.2 Regardless of how an EMS Aircraft activation was initiated, only the IC shall cancel the response. The IC will cancel the EMS Aircraft response if so advised by on-scene medical personnel (see 9.1 below). Coordination among all medical personnel and the IC is essential
- 7.3 The IC should only cancel an EMS Aircraft response if on scene and aware of the patient's condition
- 7.4 EMS Aircraft response can be canceled by:
 - ▶ notifying ALCO, who will then notify all responding agencies
 - ▶ the IC if in contact with the responding Aircraft
- 7.5 The IC shall be immediately advised of the decision to transport by ground
- 7.6 If the EMS Aircraft arrive on scene prior to the ground ambulance, the responding ground ambulance shall not be canceled until:
 - ▶ the EMS Aircraft has left the scene with the patient aboard; and,
 - ▶ it is determined by the IC or his/her designee that there are no additional patients to be transported

8. TRANSPORT

- 8.1 The transporting ALS provider shall have authority and responsibility to determine mode of patient transport (air vs. ground) and patient destination. The transporting ALS provider must consult with first responder personnel and EMS Aircraft crew, if applicable, prior to making this decision
- 8.2 Alameda County transport policies shall be followed for all patients requiring air transport. Patients shall be transported to the closest hospital most appropriate for the medical needs of the patient with an approved Helipad or EMS Landing Site
- 8.3 Trauma Centers with approved helipads or emergency landing sites are:
 - ▶ Eden Hospital (Castro Valley)
 - ▶ Children's Hospital (Oakland)
 - ▶ John Muir Hospital (Walnut Creek)
 - ▶ Highland General Hospital (Coast Guard Island)
 - ▶ Regional Medical Center (San Jose)
 - ▶ Valley Medical Center (San Jose)
 - ▶ Stanford University Hospital (Palo Alto)
- 8.4 Alameda County Receiving Hospitals with approved helipads or emergency landing sites are:
 - ▶ Eden Hospital
 - ▶ Washington Hospital
 - ▶ Valley Care Medical Center
 - ▶ Children's Hospital

9. PATIENT CARE RESPONSIBILITIES

- 9.1 Transfer of care shall occur:
 - ▶ upon arrival/landing of the responding personnel at the scene when patient contact is made
 - ▶ after a verbal patient care report is given to the transporting agency in accordance with page 146, "Transfer of Care"
- 9.2 The EMS Aircraft crew may release the patient to an ALS ground transport unit if ground transport is

EMS AIRCRAFT TRANSPORT

determined appropriate

- 9.3 The EMS Aircraft or ALS ground ambulance crew may release a patient to BLS rescue aircraft if the patient does not require ALS care but air transport is determined to be appropriate.
10. **DOCUMENTATION** - Appropriate documentation must be completed on all patients transported by the EMS Aircraft crew and faxed immediately to ALCO EMS at (510) 618 – 2099
11. **REQUEST FOR MILITARY AIRCRAFT**
- 11.1 Military assistance may be used when non-disaster inland search and rescue operations may exceed local and state capabilities. Examples: water rescue, rescue in inclement weather, hoist rescue
- 11.2 One hour response time minimum time should be expected. An ETA can only be given after the request is made and an assessment of available resources has been completed
- 11.3 If hoist rescue requested do not place the patient on a stretcher or stokes basket, although the patient may be placed on a backboard. The hoist equipment requires specialized equipment
- 11.4 The incident commander determines the need for military aircraft and contact ALCO with the following information:
- ▶ Incident location and longitude and latitude if known
 - ▶ Incident description including the number of injured, types of injuries and topography
 - ▶ If a hoist is requested, an estimate of the distance the patient will need to be lifted from the ground to the aircraft
 - ▶ Altitude of incident if known
 - ▶ Air to ground contact frequencies
- 11.5 **Notification Procedure - ALCO:**
- ▶ **For maritime rescue:** call Coast Guard Dispatch directly at (415) 556-2105 or (415) 556-2103
 - ▶ **For land (non-maritime) rescue or assistance call:**
 - State OES Law Division at (800) 852-7550 for approval
 - Coast Guard dispatch (415) 556-2103 to give the Coast Guard helicopter flight crew an advanced notification. Since the Coast Guard's primary responsibility is maritime search and rescue, they can notify ALCO of their availability
- 11.6 If additional information is needed, ALCO will direct the questions to the requesting IC's dispatch center for direct contact.

EQUIPMENT AND SUPPLY REQUIREMENTS AND INSPECTION

1. **EQUIPMENT AND SUPPLIES:** The provider agency is responsible for providing a full inventory of equipment and supplies to its units
2. All ALS and BLS patient care response vehicles (transporting and non-transporting) shall have at a minimum, all equipment and supplies specified in "Equipment and Supply Specifications - ALS/BLS" ([page 98](#)). This policy does not supersede the California Vehicle Code or California Code of Regulations, Title 13 requirements for ambulance equipment. In addition, each patient care response vehicle shall have:
 - 2.1 Adequate space in the patient care compartment to accommodate one stretcher, a patient(s) and two providers. There must be sufficient space to allow for patient care activities during transport
 - 2.2 County approved communications equipment capable of contact with receiving hospitals, base hospitals, and other provider agencies during an MCI or mutual aid situation
 - 2.3 Personal protective equipment in accordance with Cal/OSHA standards
3. Each ALS provider (transport and non-transport) shall have an approved controlled substance/medication restock procedure on file with the EMS Agency
4. **INSPECTION:** Alameda County EMS Agency personnel may inspect any BLS, CCT and/or ALS mobile unit at any time for compliance with the identified standards for equipment and personnel – see "Equipment and Supply Specifications - ALS/BLS" [page 98](#)
 - ▶ Deficiencies may result in the unit's removal from service until the deficiencies are remedied
 - ▶ The Alameda County EMS Agency will notify the service provider agency's designated management representative immediately of the infraction

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
AIRWAY EQUIPMENT			
▼ Airways:			
● Oropharyngeal (Sizes 0 - 6).....	1 each	2 each	2 each
● Nasopharyngeal (soft rubber)			
» 14 Fr., 18 Fr., 22 Fr., 26Fr.	1 each	1 each	1 each
» 30 Fr.	1	1	1
» 32 Fr.	1	2	2
» 34 Fr.	1	1	1
▶ Atomizer for intranasal medication administration		1	3
▶ Tongue Blade	1	1	1
▶ Continuous Positive Airway Pressure Device Variable flow generator to allow control of O ₂ concentrations from 28 to 100% at flows from 0 to 140 L/min. or disposable, County approved CPAP device.		1	1
▶ Impedance Threshold Device (ResQPOD®)		1	1
▼ Intubation Equipment:			
● County approved video laryngoscopy device		1 (optional)	1 (optional)
● Laryngoscope (handle)		1	1
● Batteries (extra)		1 set	1 set
● Blades (curved McIntosh):			
● Adult			
» # 4		1	1
» # 3		1	1
● Pediatric			
» # 2		1	1
» # 1		1	1
● Adult (Straight Miller)			
» # 4		1	1
» # 3		1	1
● Pediatric			
» # 2		1	1
» # 1		1	1
● Bulbs syringe (extra)		1	1
● Magill forceps:			
» Adult		1	1
» Pediatric		1	1
● Endotracheal tubes (uncuffed):			
» Size 2.5		2	3
» Size 3.0		1	2
» Size 4.0		1	2
» Size 5.0		1	2

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BSL

MINIMUM SUPPLY SPECIFICATIONS	BSL	ALS Non-Transport	ALS Transport
<ul style="list-style-type: none"> ● Adult (cuffed with adaptor) <ul style="list-style-type: none"> » Size 6.0 1 » Size 6.5 2 » Size 7.0 2 » Size 7.5 2 » Size 8.0 1 ● Stylet <ul style="list-style-type: none"> » Adult 1 » Pediatric 1 ● King LTD <ul style="list-style-type: none"> » Size 3 1 (optional) » Size 4 1 (optional) » Size 5 1 (optional) ● End-Tidal CO₂ Detectors <ul style="list-style-type: none"> » Adult - colorimetric 1 (optional) » Pediatric – colorimetric 1 (optional) ● Digital Capnograph 2 (optional) ● ET Tube Holder <ul style="list-style-type: none"> » Adult 2 » Pediatric 1 ● Meconium Aspirator 1 ● Tracheal tube introducer (bougie) 1 			
▼ Nebulizer			
<ul style="list-style-type: none"> ● Patient Activated 1 ● Hand-held for Inhalation 1 ● In-Line nebulizer equipment with 22 & 24 mm "T-piece" 1 			
▼ Oxygen equipment and supplies:			
<ul style="list-style-type: none"> ● O₂ Tank (portable) 1 ● Non-rebreather masks (transparent) <ul style="list-style-type: none"> » Adult 2 » Pediatric/Infant 1 » Nasal cannula for O₂ administration 2 » Portable Pulse-Oximetry 1 » Adult end-tidal CO₂ sampling nasal cannula..... 1 » Pediatric end-tidal CO₂ sampling nasal cannula..... 1 			
► Pleural Decompression kit to include:			
<ul style="list-style-type: none"> ● 3 1/4 " 14 gauge decompression needle ● One-way vent or drain valve 		2	2

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BSL

MINIMUM SUPPLY SPECIFICATIONS	BSL	ALS Non-Transport	ALS Transport
▼ Resuscitation bag-valve with O₂ reservoir			
• Adult	1	1	1
• Pediatric	1	1	1
• Infant	1	1	1
▼ Face masks for resuscitation (BVM)			
» Adult	1	1	1
» Pediatric	1	1	1
» Infant	1	1	1
▼ Suction equipment and supplies:			
• Pharyngeal tonsil tip (rigid)	1	2	2
• Suction apparatus (portable)	1	1	1
• Suction catheters, pediatric:			
» 6 Fr	1	1	1
» 10 Fr	1	1	1
» 18 Fr	1	1	3
• Suction Canisters	1	1	1
DRESSING MATERIALS			
▶ County Approved Chest Seals		2	4
▶ Adhesive bandages (Assorted)	1 container	1 container	1 container
▶ Cold Pack	2	2	2
▼ Dressing Materials			
• 4" by 4" gauze	12	12	12
• 10 by 30" or larger universal dressings	2	4	6
• ABD pad (9 x 5")	2	2	2
• Roller bandages (sterile)			
» 2"	2	2	2
» 3"	2	2	2
• Bulky gauze roller bandages 4"	2	2	2
• QuikClot® Combat Gauze™		1 (Optional)	1 (Optional)
▶ Elastic Bandage 3"	1	1	1
▶ Scissors (heavy duty)	1	1	1
▼ Splints - ladder or cardboard splints with a soft or cushioned surface, or equivalent padded board:			
• Arm 3" x 15"	2	2	4
• Leg 3" x 36"	2	2	4
• Traction Splint		1	1
▼ Tape			
• 1"	1 roll	1 roll	1 roll
• 2"	1 roll	1 roll	1 roll
▶ Triangular Bandage	2	2	4
▶ County Approved Tourniquet (for hemorrhage control)	1	1	1

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
EQUIPMENT AND SUPPLIES			
▼ Automated External Defibrillator (AED) equipment			
• Automated External Defibrillator - pediatric ready	1		
• "Hands- off" defib pads			
» Adult	1-2 sets		
» Pediatric	1-2 sets		
► Blanket Disposable	1	1	1
▼ Blood pressure cuff (portable):			
• Adult	1	1	1
• Obese		1	1
• Pediatric	1	1	1
• Infant		1	1
► Bulb Syringe	1	1	1
► Burn Sheets (sterile)	1	2	2
may be disposable, or linen (sterilization date indicated)			
► CO Monitor		1 (Optional)	1 (Optional)
▼ Delivery Kit			
Sterile, prepackaged to include:			
• a minimum of two (2) umbilical cord clamps			
• scissors (may be packaged separately)			
• aspirating bulb syringe	1	1	1
• gloves			
• drapes			
• antiseptic solution			
► EMS Field Manual	1	1	1
► Gloves, disposable	1 box	1 box	2 boxes
► Glucometer		1	1
▼ Irrigation Equipment:			
» Saline (sterile) for irrigation (500 mL)	2	2	2
» Tubing for irrigation		1	1
► EMS Approved Length Based Resuscitation Tape - (LBRT)		1	1
► Lubricant, water soluble		2 packs	4 packs
► County Approved Mechanical CPR Device		1 (Optional)	1 (Optional)

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
▼ Monitor/defibrillator equipment: • Defibrillator Must have strip recorder, synchronized cardioversion and transcutaneous pacing capability, and be portable & operational. Both monophasic and biphasic waveform defibrillators are acceptable; however, biphasic is preferred. Energy level dependent upon manufacturer. • Batteries, extra (if available) • “Hands-off” defib pads » Adult » Pediatric • EKG electrodes – (4 per pack) • Electrode wire - spares (complete sets) • 12-lead EKG capability		1	1
		1 set	1 set
		1 - 2 sets	1 - 2 sets
		1 - 2 sets	1 - 2 sets
		6	12
		1	1
			1
► Pen Light	1	1	1
► Point of Wound Care Kit (POW Kit)	1 (optional)	1	1
► Radio unit(s) must be operational with capability to transmit voice to base hospital via MEDCOM and MEDNET	1	1	1
► Thermometer - patient safe	1	1	1
► Tongue Depressors	1		
► Triage Tags	20	20	20
► Triage Tape (optional for BLS)	1 roll ea. - red, yellow, green, black		
► Scoop			1
► Flexible multi-positional patient carrying device (optional)	1	1	1
► Stethoscope	1	1	2
► Stretcher	1		1
IMMOBILIZATION EQUIPMENT			
► Cervical collars - Stiff: Sizes to fit all patients over one year old	1 each size	1 each size	2 each size
► Head immobilizer that provides lateral and built-in occipital support	1	2	4
▼ Spine boards (rigid) • Long board (72" x 14") with removable 5-strap adjustable immobilization device • Pediatric with velcro straps and head harness (LBRT holder optional)	1	1	1
		1	1
► Vacuum Mattress	1 (optional)	1	1
► Athletic helmet face mask removal tool (optional)	1	1	1

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
IV EQUIPMENT/SYRINGES/NEEDLES			
▼ Armboards			
• Short		1	1
• Pediatric			2
▼ Catheters			
• 14 gauge		1	2
• 16 gauge		2	4
• 18 gauge		2	4
• 20 gauge		2	4
• 22 gauge		2	2
• 24 gauge		2	2
▶ Chlorhexidine		12	12
▼ Handheld Battery Powered Intraosseous Equipment			
• EZ-IO® Driver		1	1
• 15 mm Needle Set (pink hub, 3kg-39kg)		1 (optional)	2 (optional)
• 25 mm Needle Set (blue hub, >3kg)		1	2
• 45 mm Needle Set (yellow hub, >40kg with excessive tissue)		1	2
• Vascular access pack		1	2
▼ Needles			
• 18 g x 1"		1	4
• 20 g x 1"		1	4
• 25 g x 5/8"		1	2
• 18 g x 1½" 5 micron filter needle		1	2
▶ Pressure Infusion Bags		1	1
▶ Saline Lock		2	2
▼ Syringes (with Luer-Lok™)			
• 1 mL		1	2
• 3 mL		1	2
• 10 mL		2	4
• 30 mL		1	2
▶ T-connector		2	4
▶ Tourniquet (for IV start)		1	1
▶ Tubing - Adjustable flow 3-way administration set		2	4

EQUIPMENT AND SUPPLY SPECIFICATIONS - ALS/BSL

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
MEDICATIONS AND SOLUTIONS - preloads preferred			
► Adenosine 6 mg/ 2 mL NS		1	3
► Adenosine 12 mg/ 4 mL NS		1	3
► Albuterol 2.5 mg in 3 mL NS		3	10
► Amiodarone 150 mg in 3 mL		2	3
► Aspirin 81 mg chewable tablet or 325 mg/5 gr. tablet		1 bottle	1 bottle
► Atropine Sulfate 1 mg/5 mL		1	4
► Autoinjector antidote kit (optional) (atropine 2mg in 0.7mL's & pralidoxime chloride 600mg in 2 mL's)	3 per person	3 per person	3 per person
► Calcium Chloride 1 gm/10 mL		1	1
► Charcoal, 25 grams		1 bottle	2 bottles
► Dextrose 10% in 250mL bags		1	3
► Diphenhydramine 50 mg / 1 mL		2	2
► Dopamine Hydrochloride 400 mg / 5 mL (or 400 mg in 500 mL premixed bag)		1 (optional)	2
► Epinephrine 1mg/mL 1 mg / 1 mL		2	2
► Epinephrine 0.1mg/mL 1 mg / 10 mL		3	10
► Fentanyl 100 mcg / 2 mL		2	3
► Glucagon 1 mg Kit		1	3
► Oral Glucose - 31 gms	2	2	2
► Ipratropium (Atrovent) 500 mcg (2.5 mL)		2	2
► Lidocaine 2% 40 mg / 2 mL		1	1
► Midazolam 5 mg / 1 mL		2	4
► Naloxone 2 mg / 2 mL		2	3
► Nitroglycerine		1 bottle	1 bottle
► Ondansetron (Zofran) 4mg / 2 mL for IV/IM injection		2	4
► Ondansetron (Zofran) 4mg oral dissolving tablets		2	4
► Saline, sterile (for injection) 10 mL		2	2
► Sodium bicarbonate 50 mEq / 50 mL		1	2
► Sodium Thiosulfate 12.5 gms with 10 gtt/mL vented tubing		1 (Supervisor or Battalion Chief)	
▼ Bags for infusion			
• D ₅ W 500mL		1	2
• D ₅ W 100mL		1	2
• Normal Saline (NS) 1,000mL		2	5
FOR USE ONLY BY PARAMEDICS AS MEMBERS OF MEDICAL HAZMAT TEAMS			
► Atropine Sulfate 2 mg (for nerve agent exposure)		60 doses	60 doses
► Pralidoxime chloride		20 doses	20 doses

NOTE: Dual-chamber autoinjectors (e.g. - DuoDote®) may be substituted for individual doses of atropine and pralidoxime

GRIEF SUPPORT

1. PHILOSOPHY

- 1.1 The intent of this policy is to provide grief support to the families of deceased individuals who are not transported from the field. Grief Support will be available to assist families in dealing with the death of a family member.
- 1.2 Field personnel should identify the need for grief support **as soon as possible**, especially for an unexpected death or if considering discontinuation of CPR in the field.
- 1.3 Field personnel should follow their agency/department procedure for initiating grief support

2. RESPONSIBILITIES

- 2.1 Assist the family in dealing with the death, or anticipated death, of the patient.
- 2.2 If resuscitation is in progress determine if the family wants the patient transported to the hospital.
- 2.3 Once death has been determined:
 - ▶ remain on scene with the family to provide support and assist with decisions
 - ▶ contact all appropriate agencies (e.g. Police, Coroner) if not already done
 - ▶ remove all medical equipment used during the resuscitation if cleared by the Coroner's bureau (see "Death in the Field - Discontinuation of CPR" [page 90](#)).
 - ▶ assist with the notification of clergy, if requested
 - ▶ provide information regarding the disposition of the remains

3. GRIEF SUPPORT GUIDELINES:

Breaking the News. . .

- Physically join the family.
- Introduce yourself.
- Go over with the family what has been done, what interventions have been tried.
- *"The paramedics (we) found your [husband, wife, daughter, etc.] not breathing. We began CPR. I am very sorry to tell you but your [husband, wife, daughter, etc.] has died."*
- Give the family time to react don't leave.

Grief Support Skills

- Ask the family if there is someone they would like you to call. Find a neighbor.
- Things to say:
 - ▶ *"Mrs. Smith, tell me what happened today"*
 - ▶ *"I am sorry Joe has died."*
 - ▶ *"This is a difficult time, it is OK to cry"*
 - ▶ *"You may not remember all I have said right now and that's OK."*
 - ▶ *"I will be available later to talk to you"*
 - ▶ *"I don't know but I will find out"*
- Remember: You cannot fix grief. Just give it an honest and safe place to exist.
- Give the family the grief support brochure.

Tell the family what happens next

- The coroner must be notified (Paramedics and/or police to do this)
- Ask if the family has selected a mortuary.
- Get the private doctors name and as much patient history as possible (including medications that indicate specific medical conditions)

Coroner's Case

- Cause of death must be investigated.
- Investigator can explain more.
- Police must stay if a coroner's case. (may choose to stay until mortuary arrives if not a coroner's case)
- Mortuary will pick up at coroner's office.
- Explain scene preservation nothing may be moved or disturbed.

Mortuary Case

- Family should choose and call a mortuary.
- Ask family/friends/church for suggestion.
- Mortuary will come to the scene.
- Remove and dispose of all medical equipment.
- Body may be left with family if they are OK and not a coroner's case. Ask how they feel.

Knowing when to Leave

- Tell them it is time for you to go *"is there anything else I can do?"*
- Go through the grief support brochure, point out referral numbers. Give them your card or how they can reach you.
- Offer your condolences shake hands or touch if appropriate.
- Leave

INTERFACILITY TRANSFERS

Note: This policy pertains to emergency transfers to a higher level of care that come through the 9-1-1 system. See "Scheduled Interfacility Transfers Using Paramedic Personnel" (policy #4605 Administration Policy Manual) for more information.


1. All patient care rendered by prehospital care personnel must be within the defined scope of practice according to Title 22 and Alameda County EMS protocols
2. A paramedic may only take orders from a base hospital physician. (See 5.2 below) There are no provisions for an EMT-1 to take orders from a physician
3. **EMT-Bs** may only transfer a patient without an emergency medical condition; or, with an emergency medical condition that has been stabilized and has no potential (within reasonable probability) to deteriorate en route
4. **Paramedics** (in addition to 3) may only transport a patient who has not been stabilized to a facility that provides a higher level of care. The transferring physician must determine if the care that may be required during transport is within the scope of practice of a paramedic. If not, appropriate hospital staff and/or equipment should be sent with the patient
5. Base Contact by Paramedics
 - 5.1 **Base Contact is required prior to transport** if the transferring physician orders any ALS treatment and/or the patient has not been stabilized
 - 5.2 Paramedics may follow transferring physician's written orders ONLY when 1) the transferring physician speaks to the Base Physician, and they mutually agree on the course of treatment; 2) the proposed treatment plan is within the paramedic's scope of practice
 - 5.3 **Base Physician contact shall be made:**
 - ▶ When there is a request to transfer a patient to a higher level of care facility that is not the "closest" higher level of care facility.
 - 5.4 **Base Contact is not required** if the patient is stable and no ALS treatment has been ordered by the transferring physician. If the patient's condition changes during transport see the appropriate patient care policy and treat accordingly
6. Base Contact may be made anytime a paramedic has a question regarding patient condition, destination and/or the appropriateness of the transfer
7. An Alameda County Unusual Occurrence (U.O.) form should be completed for any problem-oriented interfacility transfers. The U.O. form should be sent to the EMS office for review. [See Administration Manual UNUSUAL OCCURRENCES (#2300)]
8. Refer to "Interfacility Transfer Guidelines" [see Administration Manual INTERFACILITY TRANSFER GUIDELINES (# 5600)] for transfer approval process

IV LINES & DEVICES, VENTILATORS & OTHER PATIENT CARE EQUIPMENT

1. **PURPOSE:** To define the scope of practice of the EMT-1 and paramedic with respect to the management of patients during emergency or routine transport from the field or during an interfacility transfer
2. **Certified EMT-1 or a supervised EMT-1 student may:**
 - ▶ Assist patients with the administration of physician prescribed devices, including but not limited to, patient operated medication pumps, sublingual nitroglycerin, and self-administered emergency medications, including epinephrine devices
 - ▶ Monitor intravenous lines delivering glucose solutions or isotonic balanced salt solutions including Ringer's lactate for volume replacement;
 - ▶ May monitor, maintain, and adjust if necessary in order to maintain, a preset rate of flow and turn off the flow of intravenous fluid;
 - ▶ May transfer a patient, who is deemed appropriate for transfer by the transferring physician, and who has nasogastric (NG) tubes, gastrostomy tubes, heparin locks, foley catheters, tracheostomy tubes and/or indwelling vascular access lines, excluding arterial lines
 - ▶ May Monitor preexisting vascular access devices and intravenous lines delivering fluids with additional medications pre-approved by the Director of the EMS Authority
3. **Licensed Paramedics, in addition to the above may:**
 - ▶ Monitor and administer medications through pre-existing vascular access
 - ▶ Monitor and adjust IV solutions containing potassium equal to, or less than, 20 mEq/L
 - ▶ Transport and monitor a patient that has fluid and/or medication running through a central line, central venous access device, or heparin lock as long as the medications are within the paramedic scope of practice. Medications not included in the paramedic scope of practice may not be administered during transport. (12/21/05)
4. **Infusion Devices** - An **EMT-1** or **Paramedic** may transport a patient with an infusion device under the following conditions:
 - ▶ The transport is authorized, **in writing**, by the patient's physician or is approved by the Base Hospital physician
 - ▶ For BLS transport - the patient must be stable, non-critical and the purpose of the transport must be of a routine nature, such as a pre-scheduled appointment to a medical facility for examination or treatment (e.g. dialysis, chemotherapy, doctor's office visit)
 - ▶ Paramedics should transport the patient if the reason for the transport is a change in condition or a new medical complaint
 - ▶ The patient or trained family member must be present to monitor and regulate the device during the transfer, without any assistance from the EMT-1 or paramedic
 - ▶ If any doubt exists as to the ability of the patient or family member to manage the device or the device is not functioning properly, the patient should be assessed by ALS personnel and if appropriate, **consultation with the Base Physician should be obtained**
5. **Ventilators:**
 - ▶ If during a response to a 911 or scheduled interfacility transport, an EMT – I discovers a patient on a ventilator that requires transport, a CCT – Paramedic or CCT – RN response shall be initiated
 - ▶ Paramedics may disconnect the patient from the ventilator and assist ventilation using a bag-valve device. If it is in the best interest of the patient to remain on a ventilator during transport and a delay in transport will not compromise patient care or comfort, a CCT – Paramedic or CCT – RN response shall be initiated. If any doubt exists regarding the condition of the patient, the Base Physician should be consulted
6. **Thoracostomy tubes:** Only **CCT - Paramedics** may monitor thoracostomy tubes

MEDICAL PERSONNEL ON THE SCENE

1. **MEDICAL PERSONNEL ON THE SCENE** (non-physician) - If a bystander at the scene of an emergency identifies him/herself as a medical person, other than a physician, the First Responder or paramedic should:
 - 1.1 Inform the individual that they may assist the emergency response team and/or offer suggestions, but may not assume medical management for the patient
 - 1.2 Maintain overall scene management
2. **PHYSICIAN ON THE SCENE** - If a bystander at an emergency scene identifies him/herself as a physician:
 - 2.1 BLS responder will work in conjunction with the physician until the arrival of ALS.
 - 2.2 Paramedics should:
 - ▶ give the physician a "Note to Physicians on Involvement with EMT-1s and Paramedics" card. (available at the EMS Office or on the EMS website.) The document below is a representation of the actual card)
 - ▶ determine the alternative the physician has chosen (1, 2, or 3 on the card below)

 <p style="text-align: center;">STATE OF CALIFORNIA</p> <p style="text-align: center;">cma CALIFORNIA MEDICAL ASSOCIATION</p> <p>NOTE TO PHYSICIANS ON INVOLVEMENT WITH EMT-1s AND PARAMEDICS</p> <p>A life support team (EMT-1 or Paramedic) operates under standard policies and procedures developed by the local EMS agency and approved by their Medical Director under Authority of Division 2.5 of the California Health and Safety Code. The drugs they carry and procedures they can do are restricted by law and local policy.</p> <p>If you want to assist, this can only be done through one of the alternatives listed on the back of this card. These alternatives have been endorsed by CMA, State EMS Authority, CCLHO and BMQA.</p> <p>Assistance rendered in the endorsed fashion, without compensation, is covered by the protection of the Good Samaritan Code® (see Business and Professional Code, Sections 2144, 2395-2298 and Health and Safety Code, Section 1799.104).</p> <p style="text-align: right;">(over)</p>	<p><u>ENDORSED ALTERNATIVES FOR PHYSICIAN INVOLVEMENT</u></p> <p>After identifying yourself by name as a physician licensed in the State of California, and, if requested, showing proof of identity, you may choose one of the following:</p> <ol style="list-style-type: none"> 1. Offer your assistance with another pair of eyes, hands or suggestions, but let the life support team remain under base hospital control; or, 2. Request to talk to the base station physician and directly offer your medical advice and assistance; or, 3. Take total responsibility for the care given by the life support team and physically accompany the patient until the patient arrives at a hospital and responsibility is assumed by the receiving physician. In addition, you must sign for all instructions given in accordance with local policy and procedures. (Whenever possible, remain in contact with the base station physician) <p style="text-align: right;">(REV. 7/88) 88 49638 Provided by the EMS Authority</p>
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- ▶ **ALTERNATIVE #1** - If the physician on scene chooses alternative #1, the physician should assist the paramedic team or offer suggestions but allow the paramedics to provide medical treatment according to County protocol
- ▶ **ALTERNATIVE #2 or ALTERNATIVE #3** - If the physician on scene chooses alternative #2 or #3 the paramedics should ask to see the physician's medical license, unless the physician is known to the paramedics. **Contact the Base Physician** and have the physician on scene speak directly with the Base Physician
3. **BASE HOSPITAL PHYSICIAN RESPONSIBILITY** - After speaking to the physician on scene, the Base Physician should evaluate the situation and decide which of the available alternatives is in the best interests of the patient. These alternatives include:
 - 3.1 retain medical control and request the physician on scene to assist the paramedics and/or offer suggestions only (alternative #1); or,
 - 3.2 retain medical control but consider suggestions offered by the physician on scene (alternative #2); or,
 - 3.3 delegate medical control to the physician on scene (alternative #3)

MEDICAL PERSONNEL ON THE SCENE

4. PARAMEDIC RESPONSIBILITY

- 4.1 Alternative #1 or #2:
 - ▶ Maintain medical control of the patient and provide medical treatment according to County Protocol
- 4.2 Alternative #3:
 - ▶ ALS equipment and supplies should be made available to the physician. Offer assistance as needed
 - ▶ The physician must go with the patient in the ambulance to the receiving hospital
 - ▶ Document **all** care rendered to the patient on the PCR and ensure that the physician signs for all instructions and medical care given
 - ▶ If appropriate, maintain communication with the Base Hospital or recontact if any problems arise

5. An EMS Unusual Occurrence Form shall be completed:

- 5.1 On any Physician or Medical Personnel on-scene calls if there was a problem associated with care rendered
- 5.2 For physician on-scene call if Alternative #3 was chosen (paramedics only)

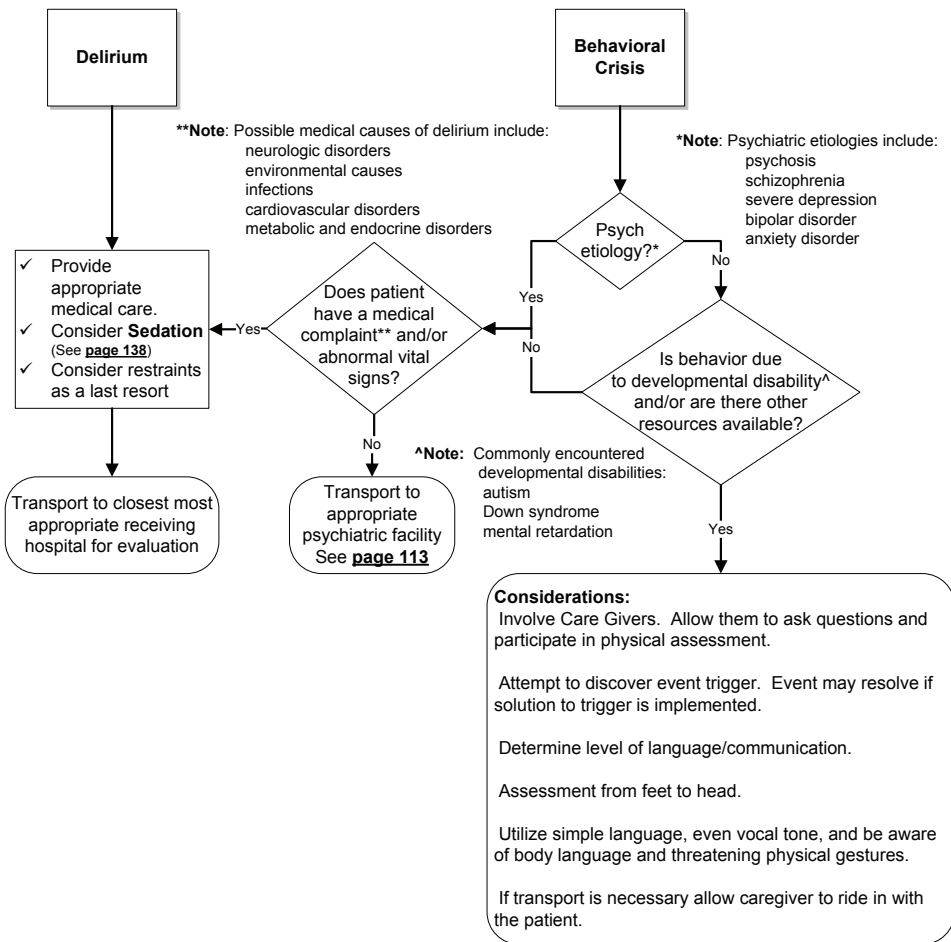
ON VIEWING AN ACCIDENT - NON-CONTRACT AMBULANCE

1. **INTRODUCTION:** Ambulance response to the scene of a motor vehicle accident shall only be dispatched through County Dispatch (ALCO-CMED 925-422-7595). If a non-contract ambulance company is called to respond to an accident, the dispatcher should immediately call County Dispatch to initiate the appropriate public safety and ambulance response.
2. **Ambulance First on Scene**
 - 2.1 If an ambulance unit witnesses an accident, the accident should be reported to their dispatch for initiation of appropriate public safety and/or emergency ALS ambulance personnel
 - 2.2 If there are no first responders on scene and the crew is not en route to a medical emergency or transporting a patient code 3, they should stop to ascertain if there are injuries. If there are injuries, they are to render appropriate care within their scope of practice
 - 2.3 If an emergency ALS ambulance has already been dispatched, the ambulance should not transport unless the delay might jeopardize the patient. The decision to transport should be made based upon the patient's condition and the estimated time of arrival (ETA) of the emergency ALS ambulance
 - 2.4 If an emergency ALS ambulance has not been dispatched but the patient's condition is such that immediate transport is not required, the crew should request County Dispatch to dispatch an emergency ALS ambulance
3. **Public Safety on Scene (police, CHP, fire) but no Ambulance Personnel**
 - 3.1 Stop to ascertain if assistance is required. The crew should notify the officer on-scene that they have not been dispatched to this call
 - 3.2 If an emergency ALS ambulance is not on the scene, medical authority rests with the most medically qualified responder. The decision to wait for an emergency ALS ambulance or to authorize transport by the ambulance is the responsibility of the most medically qualified responder, who should consider the condition of the patient, whether an ambulance has been requested through County Dispatch and the ETA of the emergency ALS ambulance
 - 3.3 If the emergency ALS ambulance arrives on scene, medical authority rests with the personnel of the emergency ALS ambulance. This individual(s) should determine if assistance from the on viewing ambulance is required
4. **Responsibility of an Ambulance Transporting from Scene**
 - 4.1 If the ambulance transports a patient(s) from an accident scene in accordance with this policy, and no other patients remain at the scene, County Dispatch should be immediately informed so that any additional responding units may be cancelled
 - 4.2 The transporting ambulance should notify the receiving hospital emergency department by radio, cellular phone, or through their dispatch of their imminent arrival (see [page 137](#))
 - 4.3 A patient care report on the patient's condition and treatment should be left at the emergency department. A copy of the report and an unusual occurrence form explaining the circumstances of the transport shall be submitted to the county within ten (10) days

PARAMEDIC FIELD SUPERVISORS - UTILIZATION OF ALS SKILLS

1. **PURPOSE:** To allow Paramedic Field Supervisors to utilize ALS skills, within their scope of practice, while functioning in the role of Field Supervisor
2. Paramedic Field Supervisors must carry all of the ALS equipment authorized in Alameda County as per policy
3. Paramedic Field Supervisors must be able to perform all ALS procedures authorized in Alameda County as per policy
4. Each ALS provider agency planning to use Paramedic Field Supervisors in the role of care-giver must develop policies and procedures to assure that appropriate equipment and supplies are stocked and checked
5. In all instances, if a Paramedic Field Supervisor initiates any ALS procedure or administers any medications, prior to the arrival of an ALS unit, he/she must assist with documentation on the PCR and sign the bottom of the PCR as a team member
6. The paramedic Field Supervisor may transfer the care of the patient to the arriving ALS unit after giving a report
7. The paramedic Field Supervisor will not be required to accompany the patient to the hospital unless requested to by the arriving ALS unit

PSYCHIATRIC AND BEHAVIORAL EMERGENCIES



PSYCHIATRIC EVALUATION - 5150 TRANSPORTS

1. **GENERAL INFORMATION:** Any patient who has been, or will be (e.g. - self-committal) placed on a 5150 hold for psychiatric evaluation shall be assessed and transported according to this policy. For minors (age below 18) the hold is called a 5585 hold and is similar to 5150 hold
2. **MEDICAL CLEARANCE CRITERIA:**
 - 2.1 **Age 65 and Above:** Patients with or without acute medical issues, should be transported to the closest most appropriate receiving hospital for evaluation
 - 2.2 **Age 12 to 64:**
 - 2.2.1 Transport patients to a closest most appropriate receiving hospital* if there is a suspected acute medical or traumatic condition requiring emergent or urgent attention in an Emergency Department. Patients with these conditions include:
 - Patients "in extremis" (those with a potential life-threatening illness or injury)
 - Patients who are unconscious, unresponsive, have chest or abdominal pain, significant bleeding, or suspected shock
 - Patients who shows signs of potential significant toxicity from illicit drugs or alcohol, which may include the following findings:
 - ▶ depressed mental status
 - ▶ inability to ambulate
 - ▶ diaphoresis, agitation
 - Patients with combative behavior who require field sedation with midazolam or whose combativeness prevents assessment (vital signs or examination)
 - Patients with abnormal vital signs or findings:
 - ▶ Systolic blood pressure over 190 mm/Hg or diastolic blood pressure over 110 mm/Hg
 - ▶ Pulse rate sustained over 120
 - ▶ Blood glucose under 60 mg/dL or over 250 mg/dL
 - Patients with a suspected overdose of medication
 - 2.2.2 Adult patients on 5150 who do not meet medical clearance criteria (see 2.1 and 2.2) should be transported to John George Pavilion, San Leandro. These include:
 - Patients with history of use of drugs or alcohol who do not show signs of significant toxicity
 - Patients with abnormalities in vital signs, but without other significant physical findings or history suggesting an acute medical problem (systolic BP up to 190, diastolic BP up to 110 and pulse up to 120)
 - Patients with minor abrasions or contusions (not needing laceration repair or other complex care or evaluation)
 - Patients who otherwise appear healthy but have communication barriers due to language or developmental disability, or are unwilling to answer questions
 - 2.3 **Adolescents Age 12 to 17**
 - 2.3.1 Criteria for transport to the closest most appropriate receiving hospital for medical clearance listed above (2.2.1) for adults also apply to adolescent patients on 5585 (5150) holds
 - 2.3.2 Additionally, adolescent patients with the following findings should also be transported to receiving hospitals:
 - Patients who have been outside of adult supervision/control for more than 24 hours
 - Patients with recent vomiting over a prolonged period or who report no food or fluid intake for 16 hours or more
 - Patients with known severe chronic medical conditions
 - 2.3.3 Adolescent patients who do not meet medical clearance criteria (see 2.2) should be transported to Willow Rock Center, San Leandro. Notify Willow Rock en route (510) 895-5502
 - 2.4 **Children Age 11 and Under**
 - All children age 11 and under on a 5585 (5150) hold should be transported to Childrens Hospital Oakland unless there is a need to divert to another hospital because of medical instability

NOTE: Additional considerations for most appropriate facility are listed in the Transport Guidelines and Abuse/Assault Policies

RESPONDING UNITS - CANCELING/REDUCING CODE

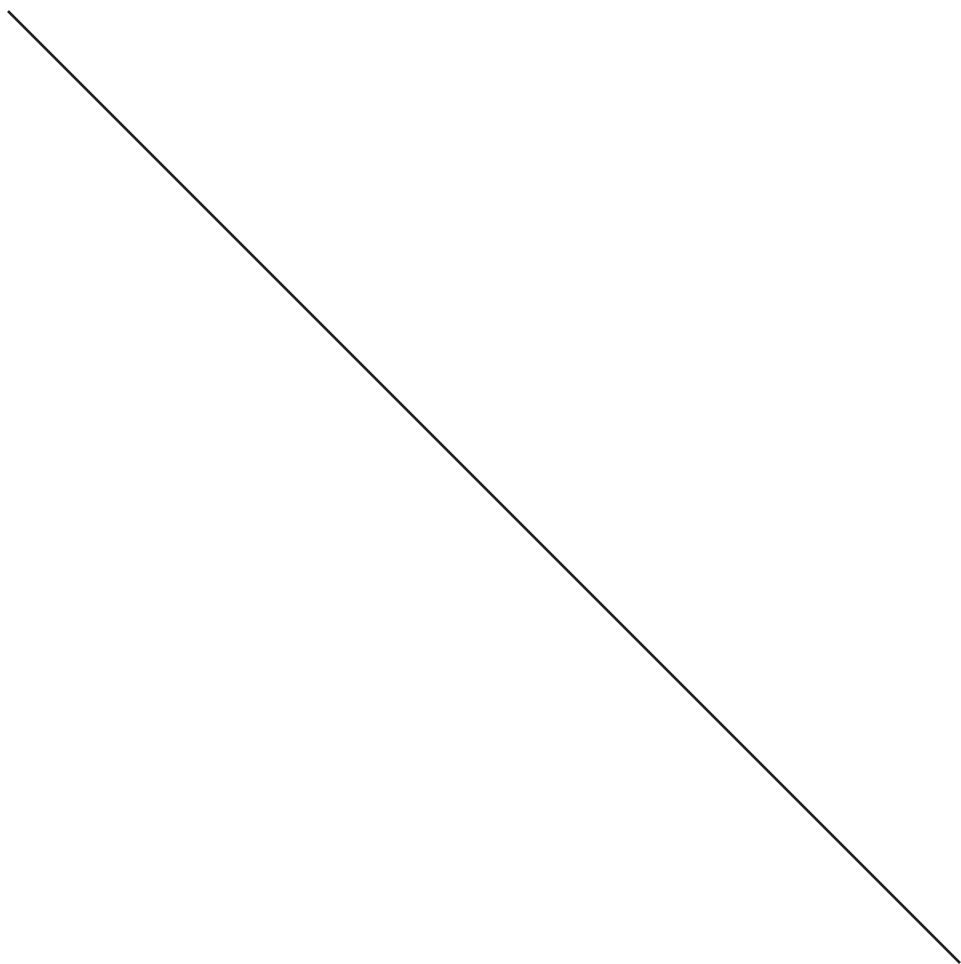
1. **GENERAL PRINCIPLES:** In general, it is better to respond with more personnel and equipment than is needed and cancel them en route, than fail to dispatch appropriate personnel and equipment. Fire and ambulance units should be dispatched to all accident scenes when there is a report of people trapped or injured
2. **CANCELING/REDUCING THE CODE OF RESPONDING UNITS:** Medical personnel first on the scene of an incident:
 - 2.1 **may cancel a responding ambulance unit** upon determination that, in the best judgment first responder, the incident does not involve an injury or illness. The ambulance should not be canceled if the patient is requesting care and transport, even if there is no apparent illness or injury
 - 2.2 **should cancel the ambulance response** if the patient meets the "Determination of Death" criteria or the patient has a valid Alameda County or California Medical Association (CMA) "Do Not Attempt Resuscitation" form (see "Death in the Field" [page 88](#))
 - 2.3 **should reduce a responding ambulance from Code 3 to Code 2** upon determination that, in the best judgment of the First Responder/Officer, the illness or injury is not immediately life threatening or that the difference in Code 3 and Code 2 response time would not likely have an impact on patient outcome

Note: MPDS guidelines apply
- 2.4 **Ambulance personnel arriving first on the scene** of a medical emergency should cancel the First Responder/Law enforcement response only if assistance is not needed and a potential public safety risk does not exist at the emergency scene

RESTRAINTS

1. Patient restraints are to be utilized only when necessary and in those situations where the patient is exhibiting behavior deemed to present danger to him/herself or to the field personnel. When restraints are used:
 - 1.1 The minimum restraint necessary, to accomplish necessary patient care and safe transportation, should be utilized
 - 1.2 Circulation to the extremities (distal to the restraints) will be evaluated q 5 minutes
 - 1.3 The restraints must not be placed in such a way as to preclude evaluation of the patient's medical status (e.g. airway, breathing, circulation) necessary patient care activities, or in any way jeopardize the patient medically
2. If the patient is under arrest and handcuffs are applied by law enforcement officers:
 - 2.1 The patient will not be cuffed to the stretcher and a law enforcement officer shall accompany the patient in the ambulance, if the handcuffs are to remain applied
 - 2.2 A law enforcement officer may elect to follow the ambulance in a patrol car to the receiving facility if the patient has been restrained on the gurney using leather restraints

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AIRWAY MANAGEMENT**1. AIRWAY CHECKLIST**

- 1.1 **Airway Checklist Purpose:** To accurately assess and provide for airway patency from initial patient contact to turnover of care
- 1.2 **Airway Definition:** The airway extends from the nose and mouth to the alveolar ducts where oxygen and carbon dioxide are exchanged. If the exchange of these gases is impeded at any stage, the patient's airway is compromised
- 1.3 **Airway Checklist Indications:** Indicated for patients with or at risk for airway compromise. This includes:
 - ▶ Cardiac/Respiratory Arrest
 - ▶ Shortness of breath with visible distress
 - ▶ Significant tachypnea/bradypnea <10 >30 (adults)
 - ▶ Patients who cannot protect their own airway
 - ▶ ALTE
 - ▶ Respiratory depression after receiving sedation or pain management
 - ▶ Patients treated with an airway adjunct, BVM, suctioning or CPAP for airway compromise
- 1.4 For all patients whom the airway checklist is indicated, use the checklist concurrently with patient care. Thoroughly document all airway checklist components (initial assessments, reassessments and interventions) in the appropriate fields in the PCR

Assessment	Initial	Reassess
Respiratory History Obtained		
Vital Signs (Full Set)		
SAO ₂		
ETCO ₂		
Lung Sounds		
Skin Signs		
Interventions	Yes	No
If Indicated Did Pt. Receive Oxygen		
Position Patient Airway		
Open & Clear Airway		
Outcome	Yes	No
If Hypoxic, Improved Oxygenation		
Prevent Aspiration		
Offer Ambulance Transport		
Patient Improved		



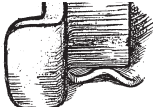

ADVANCED AIRWAY MANAGEMENT

1. **INTRODUCTION:** The approved airway management procedure for the adult consists of endotracheal intubation, or insertion of a supraglottic airway device.

*****Nasotracheal intubation is NOT an approved skill in Alameda County*****

- 1.1 The preferred method of airway management for the pediatric patient age 12 and under is bag-valve-mask (BVM) ventilation. (see [page 77](#) Routine Medical Care) *Intubation in this age group should be performed only if BVM ventilation is unsuccessful or impossible*
 - 1.2 ALS personnel are authorized to perform the skill of endotracheal intubation and insertion of a supraglottic airway. **NOTE: A supraglottic airway is defined as an airway device that rests in the pharynx when properly positioned (e.g. – King-LTD®)**
 - 1.3 BLS personnel are authorized to perform the skill of insertion of a supraglottic airway only after completing an approved training program and with the approval of the EMS medical director. BLS personnel may not intubate
 - 1.4 **Defer advanced airway insertion rather than interrupt chest compressions in the cardiac arrest patient. If after 2 minutes of continuous chest compressions and BVM support an immediate endotracheal airway can not be obtained, consider use of supraglottic airway**
 - 1.5 ALS and BLS personnel must confirm tube placement (ET or supraglottic airway) with capnography/ capnometry or a colorimetric EtCO₂ device, auscultation and physical assessment (auscultation, observation of chest rise, visualization of the tube passing through the cords, etc.). See #4 below. **NOTE: It is no longer required to use an EDD as a confirmation device. Capnography/ capnometry is a far more accurate confirmation tool that negates any value the EDD provided in the past**
2. **INDICATIONS:**
 - 2.1 Non-traumatic cardiac and/or respiratory arrest
 - 2.2 Traumatic cardiac and/or respiratory arrest or severe ventilatory compromise where the airway cannot be adequately maintained by BLS techniques
 3. **APPROVED ADVANCED AIRWAY MANAGEMENT PROCEDURE:**
 - 3.1 **Endotracheal intubation** - (ALS only)
 - 3.1.1 **Definition:** An intubation attempt is defined as the insertion of the laryngoscope blade into the patient's mouth
 - 3.1.2 Make no more than 2 total intubation attempts per patient. Each attempt should not last longer than 30 seconds. Ventilate with 100% oxygen for one minute prior to each attempt
 - 3.1.3 If patient has a Cormack-Lehane* grade of 3 or 4 (epiglottis is not or is barely visible), consider primary use of a supraglottic airway
 - 3.1.4 **Note: If you are unable to maintain respirations using a BVM device in a pediatric patient, intubate (see 1.2 above)**

*Cormack-Lehane scale

			
Grade 1	Grade 2	Grade 3	Grade 4

ADVANCED AIRWAY MANAGEMENT**3.2 Supraglottic Airway Device (King-LTD®)**

- 3.2.1 **Definition:** An supraglottic airway attempt is defined as the insertion of the supraglottic airway device into the patient's mouth
- 3.2.2 A supraglottic airway (King-LTD®) device may be placed as a primary airway or after unsuccessful attempt(s) at endotracheal intubation. (ALS only)
- 3.2.3 The King-LTD® comes in three sizes:
 - ▶ **Size 3** (height: 4 ft. – 5 ft.)
 - ▶ **Size 4** (height: 5 ft. – 6 ft.)
 - ▶ **Size 5** (height: > 6 ft.)
- 3.2.4 Do not use the King-LTD® in persons < 4 feet tall
- 3.2.5 Use a laryngoscope or tongue blade to facilitate placement
- 3.2.6 Remove and replace the King-LTD® if resistance is met

4. CONFIRM TUBE PLACEMENT: To be used on an endotracheal tube and the King-LTD® device in the order stipulated below**4.1 Attach an end tidal CO₂ detector (EtCO₂)**

- ▶ **Waveform capnography/ capnometry is preferred and *must be used if available***
- ▶ If capnography/ capnometry is not available, use an approved colorimetric EtCO₂ device (e.g. – Easy Cap®) until capnography/ capnometry becomes available
- ▶ EtCO₂ detector must remain in place until transfer of patient care at the hospital

4.2 Auscultate both lung fields for breath sounds, confirm chest rise with ventilation. Listen over left upper quadrant of the abdomen for air in the stomach**All devices used to confirm tube placement must be documented on the PCR****✓ End tidal CO₂ detector (EtCO₂)****→ Capnography/ capnometry**

- ▶ **Describe waveform (e.g. - box, shark fin, straight line, bumpy line, etc.)**
- ▶ **Specify capnometry number in mmHg (e.g. - 15 mmHg)**

→ Colorimetric EtCO₂ device (include the color of litmus paper)**✓ Visualization, auscultation, chest rise**

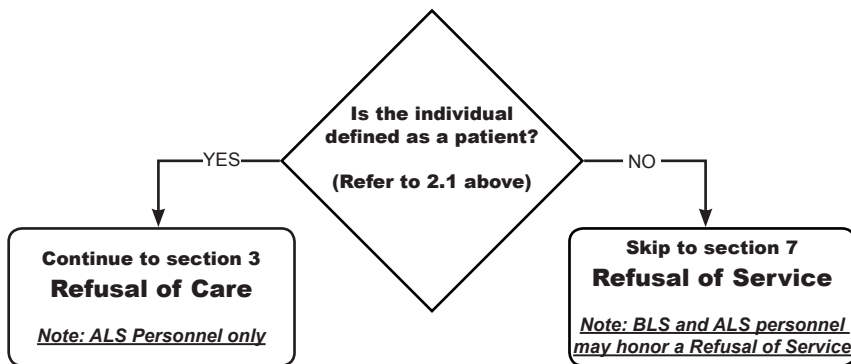
- 5. If there is any doubt as to proper placement of the endotracheal tube, visualize the pharynx and vocal cords with laryngoscope and use capnographic waveform to make decision. If still in doubt, suction the patient, deflate the cuff, remove the endotracheal tube and replace with a supraglottic airway. (Be prepared - removal of an ET tube may induce vomiting). Ventilate between attempts with 100% oxygen
- 6. If the patient regains consciousness while intubated, do not extubate. Use restraints as necessary to prevent uncontrolled extubation. Consider Sedation (see Sedation [page 138](#))
- 7. **If the patient has a suspected spinal injury:**
 - ▶ Open the airway using a jaw-thrust without head extension
 - ▶ If airway can not be maintained with jaw thrust use a head-tilt/chin-lift maneuver
 - ▶ Manually stabilize the head & neck rather than using an immobilization device during CPR

CONSENT AND REFUSAL GUIDELINES**1. INTRODUCTION:**

- 1.1 Competent adults may refuse EMS care and/or transportation
- 1.2 All potential patients at the scene of an EMS system call must be offered medical care/transport
- 1.3 Consent to treat and/or transport may be actual, expressed, or implied (the patient is unable to give consent but is in need of medical attention - e.g., an unconscious patient)
- 1.4 If the individual consents, treat only according to the scope of the consent. Competent adults can give partial consent, (e.g., transportation without treatment). There is no legal duty to provide unwanted treatment or transportation

2. PATIENT DEFINITION:

- 2.1 The definition of 'patient' is any individual that:
 - ▶ Has a complaint suggestive of potential illness or injury
 - ▶ Requests evaluation for potential illness or injury
 - ▶ Has obvious evidence of illness or injury
 - ▶ Has experienced an acute event that could reasonably lead to illness or injury
 - ▶ Is in a circumstance or situation that could reasonably lead to illness or injury



NOTE TO BLS PERSONNEL: If the individual is defined as a patient and is refusing care, the patient requires an assessment by an ALS provider. Treat as necessary while awaiting the arrival of ALS personnel.

CONSENT AND REFUSAL GUIDELINES

3. **REFUSAL OF CARE** - applies to patients who by direct examination, mechanism of injury, or by initiating a patient relationship by dialing 9-1-1 for medical care for themselves, are refusing medical care/transportation.

Only ALS personnel may honor a refusal of care

- 3.1 In order to refuse care a patient must be legally and mentally capable of doing so by meeting all of the following criteria:
- 3.1.1 Is an adult (18 or over), or if under 18 legally emancipated
 - 3.1.2 Understands the nature of the medical condition, and the risks and consequences of refusing care
 - 3.1.3 Exhibits no evidence of:
 - ▶ Altered level of consciousness
 - ▶ Alcohol or drug ingestion that impairs judgment
 - 3.1.4 Is oriented to Person, Place, Time, and Situation

3.2 Actions:**3.2.1 If the patient is legally and mentally capable of refusing care:**

- ▶ Honor the refusal
- ▶ Document thoroughly. Complete a PCR and a "Refusal of Care" form

3.2.2 If the patient cannot legally refuse care or is mentally incapable of refusing care:

- ▶ Document on the PCR to show that the patient required immediate treatment and/or transport, and lacked the mental capacity to understand the risks/consequences of refusal. (implied consent)
- ▶ Treat only as necessary to prevent death or serious disability and transport
- ▶ Do not request a 5150 hold unless the patient requires a psychiatric evaluation

4. **BASE CONTACT:** A refusal of care may be against the advice of the EMS responders and/or the base hospital physician (AMA); however, a competent adult has the legal right to refuse care. For patients with acute conditions (see 4.1.2 and 4.1.3 below) every effort should be made to convince the patient to be transported. Be persuasive - get help from:

- ▶ Family members, friends, etc.
- ▶ The Base Physician
- ▶ Consider calling law enforcement especially if the patient is a child

4.1 Paramedics should contact the Base Physician:

- 4.1.1 For any patient being treated and/or transported involuntarily
- 4.1.2 Whenever the refusal of care and/or transport poses a threat to the patient's well-being
- 4.1.3 Additional examples of situations where Base Physician contact should be made include, but are not limited to:

- | | |
|--|---|
| ▶ Markedly abnormal vital sign | ▶ Any condition for which field personnel believe that admission to an emergency department/hospital may be necessary |
| ▶ Uncontrolled hemorrhage | |
| ▶ Suspected ischemic chest pain | ▶ Any time medical treatment is begun and then the patient refuses transport |
| ▶ Suspected new onset Acute Stroke | |
| ▶ Any patient meeting critical trauma criteria | |

CONSENT AND REFUSAL GUIDELINES**5. REQUIRED DOCUMENTATION FOR THE PATIENT REFUSING CARE:**

- ▶ Physical exam
- ▶ Evidence that the patient was alert, oriented and appropriate for their age
- ▶ Indications that there were no signs of significant impairment due to drugs, alcohol, organic causes, or mental illness
- ▶ Anything else that made you believe that the patient was mentally capable
- ▶ The fact that you offered treatment and transportation
- ▶ What you told the patient about the nature of the illness/injury and the specific risks of refusal for the medical condition. (Use "quotes" as appropriate)
- ▶ The indications that the patient understood these risks
- ▶ What the patient specifically said about why he/she is refusing treatment/transport. (Use "quotes" as appropriate)
- ▶ Your efforts to encourage the patient to seek care
- ▶ The person(s), if any, who remained to look after the patient (the patient's "support system")
- ▶ The name of the interpreter, if applicable

6. OTHER THINGS TO CONSIDER:

- 6.1 Other situations where a minor may consent to but may not refuse medical care include:
 - ▶ A minor who is 12 years of age or older, for the treatment of drug or alcohol problems, or infectious, contagious or communicable diseases
 - ▶ A minor of any age who is pregnant, for medical care related to the pregnancy
 - ▶ At least 15 years old, living separate and apart from the parent/guardian and managing his or her own financial affairs
- 6.2 If the parent/guardian is unavailable consent/refusal of care may be obtained over the telephone. Document exactly as you would if the parent/guardian was present on scene. Verify the name and relationship of the individual to the patient. Attempt to have another person validate the consent/refusal with the parent/guardian. Document exactly what was said, use "quotes" as appropriate
- 6.3 If the patient is 18 or older but there is reason to suspect that the patient has been judged incompetent by a court and placed under a legal conservatorship, seek consent from the designated guardian
- 6.4 If the parent/guardian is unavailable and treatment can be safely delayed:
 - ▶ Document thoroughly
 - ▶ Attempt to reach the parent/guardian by phone. Do not release the child in the custody of a relative or friend unless that individual has been authorized by the parent/guardian to make medical decisions for that child
 - ▶ Transport to a hospital or leave in the custody of a law enforcement officer.
- 6.5 If the parent/guardian is unavailable and treatment cannot be safely delayed:
 - ▶ Treat and transport as necessary to prevent death or serious disability (implied consent)
 - ▶ Document on the PCR to show that your treatment was reasonable and necessary under the circumstances
- 6.6 If the parent/guardian is available but refuses to consent for necessary, emergency treatment:
 - ▶ Explain the risks of refusal
 - ▶ Be persuasive and/or get help from family members, Base Physician or law enforcement
 - ▶ Document the situation/statements by parent/guardian thoroughly on the PCR and complete an Alameda County EMS Refusal of Care form

CONSENT AND REFUSAL GUIDELINES

- 6.7 An individual under arrest or incarcerated is legally capable of consenting or refusing medical care
- 6.8 The law presumes that an individual is competent to consent or refuse. The party alleging a lack of capacity has the legal burden of proving it. Document accordingly; anyone forcing treatment on an unwilling patient must be able to prove both the necessity of the treatment and the incapacity of the patient
- 6.9 If you cannot complete the refusal of service log due to scene safety issues or upon the insistence of another agency, complete an unusual occurrence form and send it to the EMS Agency

7. **REFUSAL OF SERVICE** - applies to those persons who do not meet (see 2.1) the definition of a patient and are refusing all EMS services. The offer of an assessment and transport must be made and refused by the individual. **BLS and ALS personnel may honor a refusal of service**

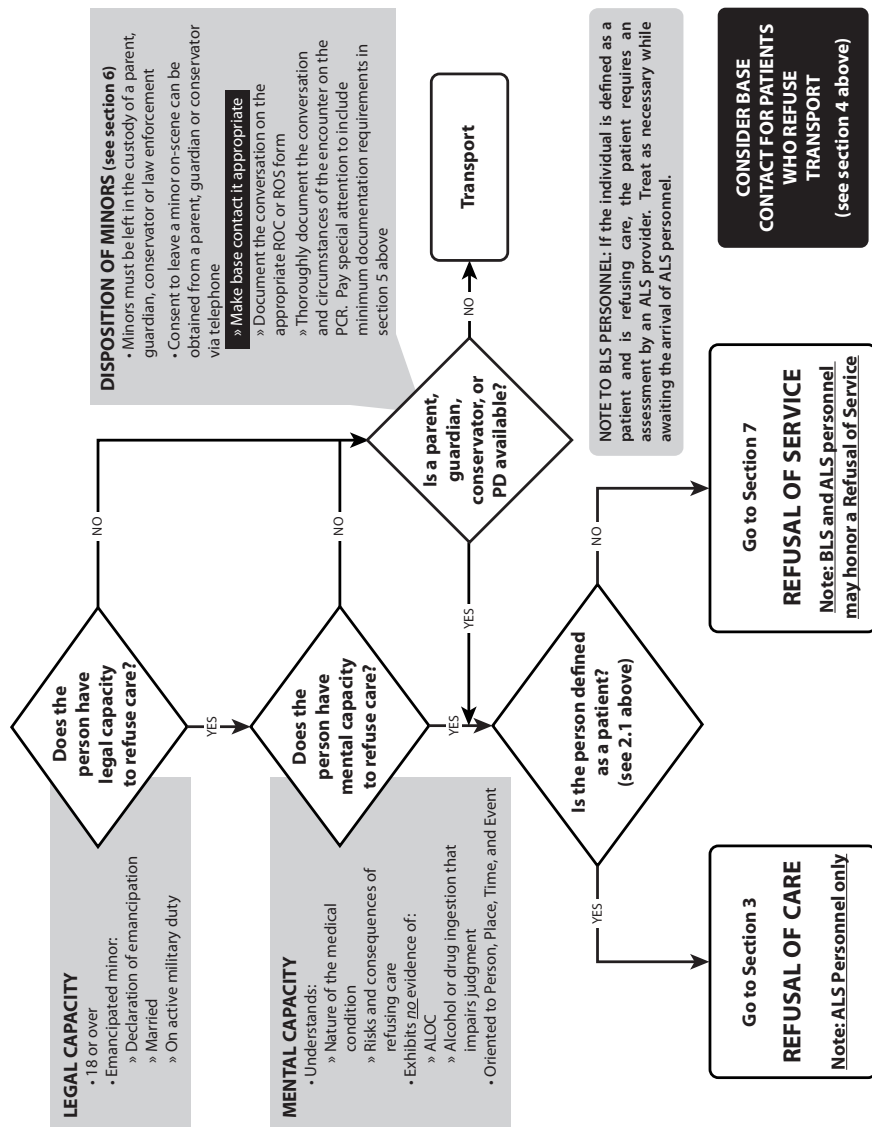
7.1 The individual must meet all of the following criteria:

- ▶ Does **not** have a complaint suggestive of potential illness or injury
- ▶ Does **not** request evaluation for potential illness or injury
- ▶ Does **not** have obvious evidence of illness or injury
- ▶ Has **not** experienced an acute event that could reasonably lead to illness or injury
- ▶ Is **not** in a circumstance or situation that could reasonably lead to illness or injury

7.2 **Actions:**

- ▶ Honor the refusal
- ▶ Enter the individual's name on the "Refusal of Service log" and obtain a signature
- ▶ Complete a PCR detailing circumstances of refusal of service
- ▶ In an event where multiple people sign a Refusal of Service log, complete one PCR detailing the circumstances of that event (***not one for each patient***)

CONSENT AND REFUSAL GUIDELINES



CONTINUOUS POSITIVE AIRWAY PRESSURE – CPAP

1. **PURPOSE:** To improve ventilation and oxygenation, and avoid intubation. *CPAP is required for all ALS providers.*
2. **INDICATIONS:** Patients age 8 or older in severe respiratory distress and:
 - ▶ **CHF with pulmonary edema**
 - ▶ **Near-drowning**
 - ▶ **Other causes of severe respiratory distress**
3. **CONTRAINDICATIONS** - Bag-valve-mask ventilation or endotracheal intubation should be considered for any patient who exhibits one or more of the following contraindications
 - 3.1 **Absolute Contraindications** (DO NOT USE):
 - ▶ Age < 8
 - ▶ Respiratory or cardiac arrest
 - ▶ Agonal respirations
 - ▶ Severely depressed level of consciousness
 - ▶ Systolic blood pressure < 90
 - ▶ Signs and symptoms of pneumothorax
 - ▶ Inability to maintain airway patency
 - ▶ Major trauma, especially head injury with increased ICP or significant chest trauma
 - ▶ Facial anomalies or trauma (e.g., burns, fractures)
 - ▶ Vomiting
 - 3.2 **Relative Contraindications** (USE CAUTIOUSLY):
 - ▶ History of Pulmonary Fibrosis
 - ▶ Decreased LOC
 - ▶ Claustrophobia or unable to tolerate mask (after first 1-2 minutes trial)
4. **COMPLICATIONS:**
 - ▶ Hypotension
 - ▶ Pneumothorax
 - ▶ Corneal Drying
5. **GOALS OF CPAP:**
 - ▶ Elimination of dyspnea
 - ▶ Decreased respiratory rate
 - ▶ Decreased heart rate
 - ▶ Increased SpO₂
 - ▶ Stabilized blood pressure

Bag-valve-mask ventilation or endotracheal intubation should be considered if the patient fails to show improvement based on the above goals.

CONTINUOUS POSITIVE AIRWAY PRESSURE – CPAP

For all CPAP patients:

6. **FAILURE TO IMPROVE:** Should the patient fail to show improvement with CPAP (as evidenced by the following) remove the CPAP device and assist ventilations with BVM, as needed
 - 6.1 Sustained or increased heart rate,
 - 6.2 Sustained or increased respiratory rate,
 - 6.3 Sustained or increased blood pressure,
 - 6.4 Sustained or decreasing pulse oximetry readings, and/or
 - 6.5 Decrease in level of consciousness
7. **DOCUMENTATION:**
 - 7.1 The use of CPAP must be documented on the PCR
 - 7.2 Vital signs (BP, HR, RR, SpO₂) must be documented every 5 minutes.
 - 7.3 Narrative documentation should include a description of the patient's response to CPAP. Refer to "Goals of CPAP" for descriptive terms that may be useful
 - 7.4 Additional narrative documentation should include if the patient does not respond to CPAP and endotracheal intubation is required

EKG - 12 LEAD

- 1. INTRODUCTION:** 12-lead electrocardiograms (EKGs) are used with a variety of patients and should be used with a number of patient care policies (e.g., ALOC ([page 35](#)), Chest Pain/MI ([page 39](#)), and CHF/Pulmonary Edema ([page 45](#)). Treatment under these policies should proceed in conjunction with the application of the 12-lead EKG. Our goal is to incorporate the 12-lead EKG into our destination decision making process with regard to the ST-elevation MI (STEMI) patient. The transmission or reporting of the ST-elevation MI should decrease "door-to-intervention" times in our communities' hospitals

Approved STEMI Centers are:

STEMI Centers	ED Phone Number
Kaiser Walnut Creek (Out of County)	(925) 939-1788
Kaiser Fremont	(510) 248-5011
Kaiser Oakland	(510) 752-8869
Alameda County Medical Center - Highland	(510) 535-6000
San Ramon Medical Center (Out of County)	(925) 275-8338
St. Rose Hospital	(510) 264-4251
Summit Medical Center	(510) 869-8797
Valley Care Medical Center	(925) 416-6518
Washington Hospital	(510) 608-1367

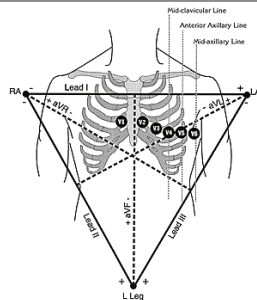
Only ALS personnel who are employed by an agency with an approved 12-lead EKG program and who have received the required training may perform a 12-lead EKG. [see 12-LEAD EKG PROGRAM (#4210) in the Administrative Manual for training and program requirements]. 12-lead EKG is required for ALS transport providers.

- 2. INDICATIONS:** Any patient with known or suspected Acute Coronary Syndrome (ACS)
 - ▶ chest pain
 - ▶ dyspnea
 - ▶ discomfort or tightness radiating to the jaw, shoulders or arms
 - ▶ anxiety
 - ▶ nausea
 - ▶ syncope/dizziness
 - ▶ ROSC
 - ▶ other "suspicious symptoms"
 - ▶ diaphoresis
 - ▶ known treatment for ACS
- 3. EKG CRITERIA FOR STEMI:** convex, "tombstone," or flat ST segment elevation in two or more contiguous leads. Use the machine reading "acute MI" or the equivalent, as the principal determinant for STEMI assessment

EKG - 12 LEAD**4. PROCEDURE:**

- 4.1 Attach EKG leads to the patient (limb leads to the upper arms and ankles, and six chest leads). Perform an EKG as indicated in #3 above

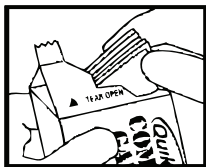
- ▶ V1: right 4th intercostal space
- ▶ V2: left 4th intercostal space
- ▶ V3: halfway between V2 and V4
- ▶ V4: left 5th intercostal space, mid-clavicular line
- ▶ V5: horizontal to V4, anterior axillary line
- ▶ V6: horizontal to V5, mid-axillary line
- ▶ V4R: right 5th intercostal space, mid-clavicular line (use in all suspected inferior MIs)



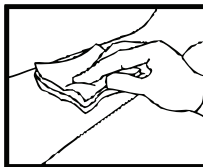
- 4.2 If the EKG machine is reading “Acute MI” or the equivalent, or definite new left bundle branch block, **immediately transmit the EKG and notify the STEMI Receiving Center**. Use the machine reading as the principal determinant for STEMI assessment. Use your clinical judgment for situations outside of those listed above
- 4.3 Include the following information in your report:
- ▶ Age and sex
 - ▶ Interpretation of the 12-lead EKG (leads, amount of ST elevation in millimeters, “confidence” in your 12-lead assessment)
 - ▶ Location of reciprocal changes (if applicable)
 - ▶ Symptoms (including presence or absence of chest pain)
 - ▶ Presence of new left bundle branch block. Presence of imposters (early repolarization left bundle branch block, left ventricular hypertrophy, pericarditis or paced rhythms).
 - ▶ Significant vital signs and physical findings
 - ▶ Time of onset
 - ▶ Estimated time of arrival to receiving STEMI Receiving Center
- 4.4 Transport patients with ST elevation in two or more contiguous leads and symptoms of ACS to the closest, most appropriate STEMI Receiving Center. Personnel should consider traffic and weather conditions, as well as the patient’s choice of facility or physician
- 4.5 Attach a copy of the EKG to the hospital copy and the file copy of the PCR
- 4.6 Serial 12-lead EKGs, en route, are required in patients with strong symptomology and are encouraged in all other patients
- 4.7 Follow your agency’s procedure for QI purposes

HEMORRHAGE CONTROL

1. **INTRODUCTION:** Controlling severe bleeding from an extremity injury can be challenging (especially in the lower limbs). Use of a County approved tourniquet can assist in the care of patients with uncontrollable bleeding in the extremities safely and effectively when the appropriate precautions are taken. Approved for both ALS and BLS.
2. **INDICATIONS:**
 - ▶ Amputation
 - ▶ Failure to stop bleeding with pressure dressing(s)
 - ▶ Injury does not allow control of bleeding with pressure dressing(s)
 - ▶ Impaled foreign body with ongoing extremity bleeding
 - ▶ Under difficult or dangerous situation for responding caregivers
 - ▶ Mass casualty event
 - ▶ Significant extremity hemorrhage in the face of any or all of:
 - Need for airway management
 - Need for breathing support
 - Circulatory shock
 - Need for other emergent interventions or assessment
 - Significant bleeding from multiple locations
3. **TOURNIQUET:** Place county approved tourniquet according to manufacturer's instructions
4. **HEMOSTATIC AGENT:** After tourniquet placement, and to aid in severe arterial bleeding; or to control severe bleeding where tourniquets are not indicated (trunk, head, neck, etc), use of a hemostatic agent is indicated. The only hemostatic agent approved for use in Alameda County is the QuikClot Combat Gauze. **Use of combat gauze is optional. Additional training is required for use of Combat Gauze. If your agency decides to implement the use of QuikClot Combat Gauze, it's use is limited to ALS personnel only.**
5. **INDICATIONS:**
 - ▶ Bleeding that is not controllable with the use of a tourniquet or other means.
6. **PROCEDURE:** QuikClot Combat Gauze is approved for use in Alameda County

DIRECTIONS FOR USE

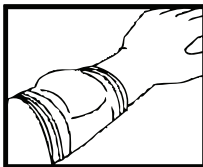
1. Open package and remove **Combat Gauze**. Keep the empty package.



2. Pack **Combat Gauze** into wound and use it to apply pressure directly over bleeding source. (More than one **Combat Gauze** may be required).



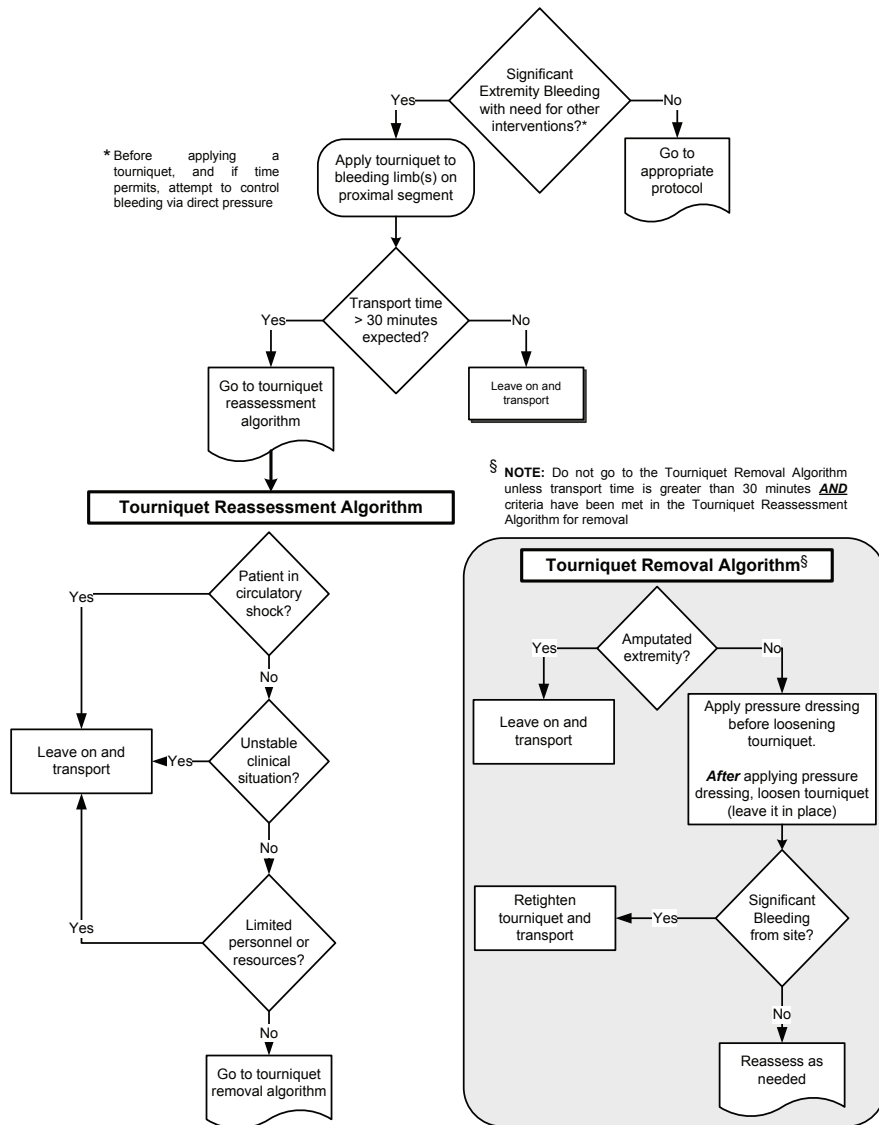
3. Continue to apply pressure for 3 minutes or until bleeding stops.



4. Wrap and tie bandage to maintain pressure. Seek medical care immediately. Show **PRODUCT REMOVAL** directions on package to medical personnel.

PRODUCT REMOVAL: 1. Gently remove gauze from wound. 2. Thoroughly irrigate wound.

HEMORRHAGE CONTROL



IMPEDANCE THRESHOLD DEVICE (ITD)

1. **INTRODUCTION:** ResQPOD® is an impedance threshold device (ITD) that enhances the vacuum in the chest that forms during the chest recoil phase of CPR. Studies have shown that this process draws more blood back to the heart (increases preload), and increases cardiac output, blood pressure, perfusion to vital organs and survival rates
2. **WARNINGS:** Contraindicated in patients where cardiopulmonary resuscitation (CPR) is not indicated. Never use on patients with pulse or spontaneous breathing. Remove immediately from ventilation circuit once CPR is discontinued
3. **INDICATIONS:** To be used on all patients ≥ 8 years of age in cardiac arrest
4. **CONTRAINDICATIONS:**
 - 4.1 Patients under the age of eight (8)
 - 4.2 Patients with a flail chest
5. **PROCEDURE:** The ResQPOD can be used for either basic or advanced life support during cardiac arrest, with a bag-valve mask attached to a face mask, an endotracheal (ET) tube, or other airway devices (e.g. - King-LTD)
 - 5.1 Select airway adjunct (tube or mask)
 - 5.2 Attach bag-valve to air intake port on ResQPOD
 - 5.3 Slide the Ventilation Timing Assist Light switch to on when using the ResQPOD **in an intubated patient**



ResQPOD® Impedance Threshold Device



← Timing Light Switch

***Note:** the timing light ensures that ventilations do not exceed 8 - 10 per minute

- 5.4 Begin CPR (**page 9**):
 - ▶ Allow for complete chest release/recoil after each compression
 - ▶ Follow recommended ventilation rates
 - ▶ **DO NOT** hyperventilate
- 5.5 Use 30:2 compressions:ventilation ratio (15:2 for infants and children with 2 rescuers) for basic life support when using a facemask. Ventilate intubated patients 8-10 breaths/minute with each breath lasting 1.5 seconds (maximum) to optimize CPR and ResQPOD efficacy. Excessive ventilation rates will reduce the effectiveness of the ResQPOD
- 5.6 Clean or suction vomit or secretions from the ResQPOD by removing from airway adjunct and shaking or blowing out debris using ventilation source.

NOTE: Discontinue use if correct function cannot be assured. After pulse and/ or spontaneous respirations have been restored, immediately remove ResQPOD from ventilation circuit and help patient breathe as needed

INTRANASAL (IN) MEDICATION ADMINISTRATION

1. INDICATIONS:

- ▶ **Fentanyl for pain management**
- ▶ **Naloxone for suspected opiate overdose**
on patients who are apneic or near-apneic with a pulse
-or-
- ▶ **Midazolam for seizures or sedation**

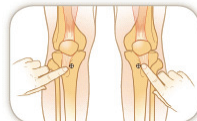
2. PROCEDURE:

- 2.1 Assess ABC's (Airway, Breathing, Circulation)
- 2.2 For pulseless patient, go to appropriate cardiac arrest protocol
- 2.3 Establish airway and begin bag-valve-mask ventilation with 100% O₂ if appropriate
- 2.4 Load syringe with the appropriate dose.. See specific treatment algorithms:
 - ▶ **Pain Management – Adult page 43 | Pediatric page 68**
 - ▶ **Respiratory Depression or Apnea – Adult page 46 | Pediatric page 74**
 - ▶ **Sedation – page 138**
 - ▶ **Seizure – Adult page 51 | Pediatric page 78**
- 2.5 Attach MAD nasal atomizer →
- 2.6 Place atomizer 1.5 cm into the nostril
- 2.7 Briskly compress the syringe to administer 1/2 of the medication
- 2.8 Remove and repeat into the other nostril until all the medication has been administered.
 - ▶ Continue ventilating the patient as needed
 - ▶ If no appropriate response within 3 minutes, go to appropriate policy



INTRAOSSUEOUS INFUSION PROCEDURE – ADULT

1. **PURPOSE:** To obtain rapid circulatory access to provide necessary intravenous fluids or medications
2. **INDICATIONS:**
 - ▶ Approved for use in the adult patient only >8 years old and >40 kg. (If less than 40 kg, "INTRAOSSUEOUS INFUSION PROCEDURE - PEDIATRIC" on page 135)
 - ▶ Consider for use in any unconscious or seriously ill or injured patient in whom IV access cannot be established in a very timely fashion
 - ▶ Any medications or fluids that can be given in a peripheral vein can be given intraosseous.
3. **CONTRAINDICATIONS:**
 - ▶ Inability to locate tibial landmarks
 - ▶ Fracture or recent surgery in the tibia to be used
 - ▶ Infection over the insertion site
4. **POSSIBLE COMPLICATIONS:**
 - ▶ Compartment syndrome
 - ▶ Growth plate injury
 - ▶ Skin infection
 - ▶ Failed infusion
 - ▶ Bone infection
 - ▶ Bony fracture
5. **PREPARATION:**
 - ▶ Place the patient in the supine position
 - ▶ Put a small towel roll under the knee
 - ▶ Consider Pain Management page 43
6. **PROCEDURE:**
 - 6.1 Locate the anatomical site (one centimeter inferior and medial to the anterior tibial tuberosity) – STEP 1
 - 6.2 Prepare the skin with chlorhexidine. STEP 2
 - 6.3 Consider Pain Management [page 43](#)
 - 6.4 Load the appropriate needle onto the driver
 - 6.5 Firmly stabilize the leg near (not under) the insertion site
 - 6.6 Firmly press the needle against the site at a 90° angle and operate the driver. Use firm, gentle pressure. STEP 3
 - 6.7 As the needle reaches the bone, stop and be sure that the 5mm marking on the needle is visible; if it is, continue to operate the driver
 - 6.8 When a sudden decrease in resistance is felt and the flange of the needle rests against the skin, remove the driver and the stylet from the catheter. STEP 4
 - 6.9 Do not attempt to aspirate bone marrow (may clog needle & tubing)
 - 6.10 Use a syringe to rapidly infuse 10 mL NS. (Note: this is an important step)
 - ▶ If the patient is responsive to pain the clinician may consider use of **40mg (2 mL) 2% lidocaine slowly (1 ml over 30 seconds)** for anesthetic effect prior to the 10ml normal saline flush
 - May repeat ½ dose (20mg or 1 mL) of 2% lidocaine once q 15 minutes for continued patient discomfort
 - 6.11 If no infiltration is seen, attach the IV line and infuse fluids and/or medications as normal STEP 5
 - 6.12 IV bag will need to be under pressure. STEP 6
 - 6.13 Secure the needle



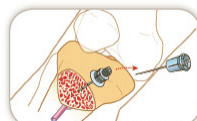
STEP 1



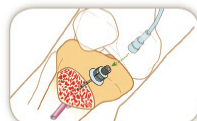
STEP 2



STEP 3



STEP 4



STEP 5



STEP 6

INTRAOSSEOUS INFUSION PROCEDURE – PEDIATRIC

1. **PURPOSE:** To obtain rapid circulatory access to provide necessary intravenous fluids or medications
2. **INDICATIONS:**

- ▶ Approved for use in the pediatric patient >3 kg and <40 kg. (If greater than 40 kg, "INTRAOSSEOUS INFUSION PROCEDURE - ADULT" on page 134)
- ▶ Consider for use in any unconscious or seriously ill or injured patient in whom IV access cannot be established in a very timely fashion
- ▶ Any medications or fluids that can be given in a peripheral vein can be given intraosseous.

3. **CONTRAINDICATIONS:**

- ▶ Inability to locate tibial landmarks
- ▶ Fracture or recent surgery in the tibia to be used
- ▶ Infection over the insertion site

4. **POSSIBLE COMPLICATIONS:**

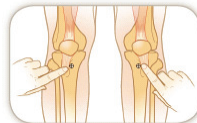
- | | |
|---|--|
| <ul style="list-style-type: none"> ▶ Compartment syndrome ▶ Growth plate injury ▶ Skin infection | <ul style="list-style-type: none"> ▶ Failed infusion ▶ Bone infection ▶ Bony fracture |
|---|--|

5. **PREPARATION:**

- ▶ Place the patient in the supine position
- ▶ Put a small towel roll under the knee
- ▶ Consider Pain Management page 68

6. **PROCEDURE:**

- 6.1 Locate the anatomical site (one centimeter inferior and medial to the anterior tibial tuberosity) – STEP 1
- 6.2 Prepare the skin with chlorhexidine. STEP 2
- 6.3 Consider Pain Management page 68
- 6.4 Load the appropriate needle onto the driver
- 6.5 Firmly stabilize the leg near (not under) the insertion site
- 6.6 Firmly press the needle against the site at a 90° angle and operate the driver. Use firm, gentle pressure. STEP 3
- 6.7 As the needle reaches the bone, stop and be sure that the 5mm marking on the needle is visible; if it is, continue to operate the driver
- 6.8 When a sudden decrease in resistance is felt STOP, remove the driver and the stylet from the catheter. STEP 4
- 6.9 Do not attempt to aspirate bone marrow (may clog needle & tubing)
- 6.10 Use a syringe to rapidly infuse 5 mL NS. (Note: this is an important step)
 - ▶ If the patient is responsive to pain the clinician may consider use of **0.5mg/kg (max dose 20 mg) 2% lidocaine slowly (1 ml over 30 seconds)** for anesthetic effect prior to the 10ml normal saline flush
 - May repeat ½ dose (0.25mg/kg) of 2% lidocaine once q 15 minutes for continued patient discomfort*
- 6.11 If no infiltration is seen, attach the IV line and infuse fluids and/or medications as normal STEP 5
- 6.12 IV bag will need to be under pressure. STEP 6
- 6.13 Secure the needle



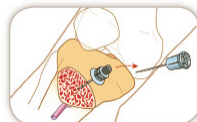
STEP 1



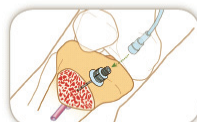
STEP 2



STEP 3



STEP 4



STEP 5



STEP 6

PLEURAL DECOMPRESSION

1. **INDICATIONS:** When clinical findings reveal a tension pneumothorax (severe respiratory distress, diminished breath sounds on the affected side, tracheal deviation) with rapidly deteriorating vital signs
2. **EQUIPMENT:**
 - 2.1 Pleural decompression kit
 - 2.2 Chlorhexadine swab
 - 2.3 3¹/₄ inch, 14 gauge angiocatheter
 - 2.4 One-way valve
3. **PROCEDURE:**
 - 3.1 Approved Sites:
 - ▶ 2nd or 3rd intercostal space, mid-clavicular line
 - ▶ 4th or 5th intercostal space, mid-axillary line
 - 3.2 Prep site with chlorhexadine
 - 3.3 Firmly but carefully insert the needle at a 90 degree angle just over the superior aspect (superior border) of the rib, through the skin and pleura until air escapes or a distinct "give" is felt. The undersurface of the rib should be avoided to limit injury to the neurovascular bundle. Air should be freely aspirated (if not, you are not in the pleural space)
 - 3.4 Remove the needle
 - 3.5 Attach a one-way valve. Secure with tape
 - 3.6 Recheck breath sounds and continuously monitor cardio-respiratory status.
4. **COMPLICATIONS:**
 - 4.1 lung laceration
 - 4.2 pneumothorax
 - 4.3 hemorrhage secondary to damage to the intercostal artery or vein

REPORTING FORMAT

1. **INTRODUCTION:** Patient reports to a Base Hospital, Trauma Center or Receiving Hospital should be brief and to the point. Only pertinent information should be presented initially, however the Base Physician may need to request additional information in order to make sound treatment or triage decisions. Occasionally pause briefly to confirm reception and allow for questions or orders
2. **MEDICAL PATIENTS:**
 - 2.1 **Receiving Hospital Report**
 - ▶ ETA
 - ▶ General patient information - For emergent patients, include medical record number (if available without compromising patient safety and care)
 - ▶ Physical assessment
 - ✓ Vital signs / Glasgow Coma Scale
 - ✓ Pertinent positives and pertinent negatives, as needed
 - ✓ For STEMI patients see "EKG 12-Lead" policy ([page 129](#), section 4.3) for reporting information
 - ▶ Interventions made and patient response, if applicable
 - ▶ Problems encountered, if applicable (e.g. unable to intubate)
 - 2.2 **Base Contact**
 - ▶ General patient information
 - ▶ Chief complaint and general assessment
 - ▶ Patient destination and ETA
 - ▶ Physical assessment
 - ✓ Vital signs / Glasgow Coma Scale
 - ✓ Pertinent positives and pertinent negatives to support the general assessment.
 - ▶ Treatment rendered prior to contact and patient response, if applicable
 - ▶ Specific requests for medications/procedures
3. **TRAUMA PATIENTS:**
 - 3.1 **Receiving Hospital Report**
 - ▶ ETA
 - ▶ General patient information
 - ▶ Triage criteria met, including mechanism of injury
 - ▶ Physical assessment
 - ✓ Vital signs/Glasgow Coma Scale
 - ✓ Pertinent positives and pertinent negatives, as needed
 - ▶ Interventions made and patient response, if applicable
 - ▶ Problems encountered, if applicable (e.g. unable to intubate)
 - 3.2 **Trauma Destination (60 seconds)**
 - ▶ ETA to the closest appropriate ED vs. TC
 - ▶ General patient information
 - ▶ Triage criteria met
 - ▶ Mechanism of injury
 - ▶ Physical assessment
 - ✓ Vital signs, if available / Glasgow Coma Scale
 - ✓ Pertinent positives and pertinent negatives

SEDATION

1. GENERAL INDICATIONS:

- 1.1 To reduce combative behavior that endangers patient or caregivers
- 1.2 As an adjunct to pain relief for ALS procedures such as cardioversion and/or cardiac pacing
- 1.3 **Use CAUTION with:**
 - ▶ **Concomitant use of an opiate and midazolam can cause significant respiratory depression, hypotension and decreased level of consciousness. Administer concomitantly only when absolutely indicated. Administer lower doses of one or both agents**
 - ▶ **Elderly patients are especially sensitive to the effects of midazolam. They should receive a lower dose and especially close monitoring**
 - ▶ **A very small proportion of patients may have a paradoxical effect (i.e. - increased agitation)**

2. CONTRAINDICATIONS:

2.1 Absolute:

- ▶ Sensitivity to midazolam
- ▶ Systolic BP < 90 mmHg (adult) - *except for patients who need TCP or cardioversion*

2.2 Relative:

- ▶ Nausea/vomiting
- ▶ Suspected drug/alcohol intoxication
- ▶ Head injury
- ▶ Concomitant narcotic administration - (this is a RELATIVE contraindication and is not intended to prevent the use of necessary narcotic analgesia, when indicated)
- ▶ Depressed mentation
- ▶ Multiple systems trauma

(These MAY be the most likely cause for the condition that requires proposed sedation. The best judgment of the paramedic is necessary to evaluate the need for sedation)

3. PROCEDURE:

- 3.1 Give supplemental oxygen (titrate to 94-99% SpO₂)
- 3.2 Institute continuous cardiac monitoring
- 3.3 Continuously monitor the patient using the Airway Checklist, including ETCO₂
- 3.4 Establish IV access if possible
- 3.5 Be prepared to provide airway/ventilation management
- 3.6 Ensure that receiving hospital personnel are aware that patient has been sedated

INDICATIONS:	MEDICATION – DOSE/ROUTE:
SEDATION INDICATIONS ✓To reduce combative behavior that endangers patient or caregivers ✓Anticipated: <ul style="list-style-type: none"> •Cardioversion in the conscious patient •Cardiac pacing in the conscious patient 	MIDAZOLAM: (see weight-based chart) Adult: ✓ IV/IO (slowly) / IN (briskly): 1-2 mg - loading dose. Titrate to desired degree of sedation. May repeat x 2, q 5 minutes, to a total maximum dose of 6 mg ✓ IM: 2-4 mg - if unable to establish IV access. May repeat x 1, q 30 minutes Pediatric (> 5kg or <40kg) ✓ IV (slowly) / IN (briskly): 0.05 mg/kg - loading dose. Titrate to desired degree of sedation. May repeat x 2, q 5 minutes, to total maximum dose of 3 mg ✓ IM: 0.1 mg/kg - if unable to establish IV access. May repeat x 1, q 30 minutes

SEDATION**MIDAZOLAM - WEIGHT- BASED CHART**

PEDIATRIC > 5 kg or < 40 kg			
Weight		Dose	
kg	lbs	IV 0.05 mg/kg	IM 0.1 mg/kg
5	11	.25 mg	.5 mg
10	22	.5	1
15	33	.75	1.5
20	44	1	2
25	55	1.25	2.5
35	77	1.75	3.5

ADULT > 40 kg		
Weight		Dose
kg	lbs	0.1 mg/kg
40	88	4 mg
45	99	4.5 mg
50	110	5 mg
55	121	5.5 mg
60	132	6 mg
65	142	6.5 mg
70	154	7 mg
75	165	7.5 mg
80	176	8 mg
90	198	9 mg
>100	>220	10 mg

SPINAL INJURY ASSESSMENT

- ▶ Alameda County EMS is supporting efforts to decrease unnecessary immobilizations in the field and reduce the risks and complications associated with this procedure
- ▶ If the immobilization process is initiated prior to assessment, *STOP* and perform spine injury assessment to determine best course of action
- ▶ Studies show that immobilizing trauma victims may cause more harm than good to the patient. Penetrating trauma victims benefit most from rapid assessment and transport to a trauma center without spinal motion restriction (SMR)

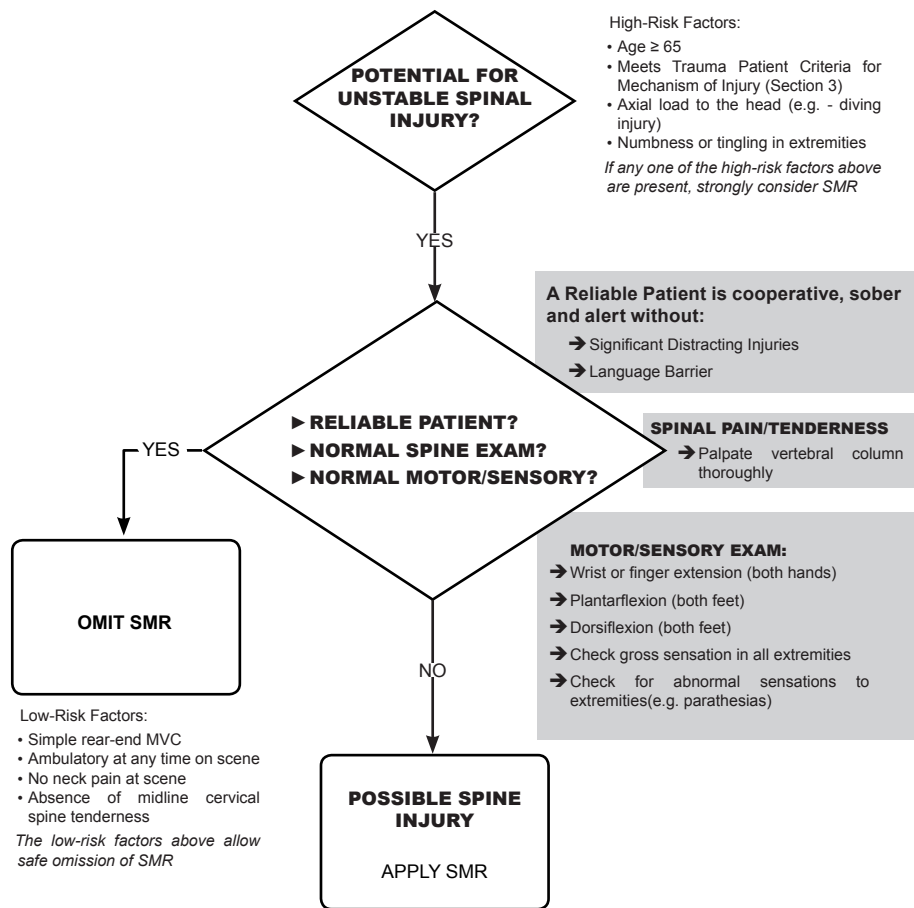
1. INTRODUCTION:

- 1.1 Omit SMR if all assessment criteria are safely assessed *and* normal
- 1.2 Consider SMR for a patient who is suspected of having a traumatic unstable spinal column injury. Have high index of suspicion for pediatrics and patients with degenerative skeletal/connective tissue disorders (i.e. osteoporosis, elderly, previous spinal fractures, etc)
- 1.3 Victims of penetrating trauma (stabblings, gunshot wounds) to the head, neck, and/or torso SHOULD NOT receive SMR unless there is one or more of the following:
 - ▶ Obvious neurologic deficit to the extremities
 - ▶ Significant secondary blunt mechanism of injury (e.g.- fell down stairs after getting shot)
 - ▶ Priapism
 - ▶ Neurogenic shock
 - ▶ Anatomic deformity to the spine secondary to injury

2. Pediatric Patients and Car Seats:

- 2.1 **Infants restrained in a rear-facing car seat** may be immobilized and extricated in the car seat. The child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock)
 - 2.2 **Children restrained in a car seat** (with a high back) may be immobilized and extricated in the car seat; however, once removed from the vehicle, the child should be placed in SMR
 - 2.3 **Children restrained in a booster seat** (without a back) need to be extricated and immobilized following standard SMR procedures
3. **Helmet removal:** Safe and proper removal of the helmet should be done by two people following steps outlined in an approved trauma curriculum

SPINAL INJURY ASSESSMENT



SPINAL MOTION RESTRICTION (SMR)

-
1. **INTRODUCTION:** The term spinal motion restriction (SMR) better describes the procedure used to care for patients with possible unstable spinal injuries. SMR includes:
 - ▶ Reduction of gross movement by patient
 - ▶ Prevention of duplicating the damaging mechanism to spine
 - ▶ Regular reassessment of motor/sensory function
 2. **PURPOSE:** To decrease the risk of negative effects caused by traditional spinal immobilization while still providing appropriate care to patients with possible spinal injury by implementing alternative methods to achieve SMR
 3. **INDICATIONS:** Any patient identified by Alameda County's Spinal Injury Assessment to warrant spinal motion restriction. The spinal injury assessment should be performed prior to application of SMR.
 4. **PROCEDURE:** If patient experiences negative effects of SMR methods used, alternative measures should be implemented.
 - 4.1 Methods/tools to achieve SMR that are allowable: (less invasive to more invasive) lateral, semi-fowler's or fowler's position with cervical collar only, soft collars, pillows, vacuum splint or mattress, children's car seats, KED, backboards with adequate padding, head immobilizers and straps
 - 4.2 Provide manual stabilization restricting gross motion. Alert and cooperative patients may be allowed to self-limit motion if appropriate with or without cervical collar
 - 4.3 Apply cervical collar
 - 4.4 If needed, extricate patient limiting flexion, extension, rotation and distraction of spine
 - 4.5 Considerations for patient movement when decision to SMR has been made:
 - ▶ Keeping with the goals of restricting gross movement of spine and preventing increased pain and discomfort, self-extrication by patient is allowable
 - ▶ Pull sheets, other flexible devices, scoops and scoop-like devices can be employed if necessary. Hard backboards should only have limited utilization
 - 4.6 Apply adequate padding or vacuum mattress to prevent tissue ischemia and increase comfort
 - 4.7 Place patient in position best suited to protect airway
 - 4.8 Regularly reassess motor/sensory function (include finger abduction, wrist/finger extension, plantar/dorsal flexion and sharp/dull exam if possible)
 - 4.9 Consider the use of SpO₂ and EtCO₂ to monitor respiratory function
 5. **SPECIAL CONSIDERATIONS**
 - 5.1 **Patients with acute or chronic difficulty breathing:** SMR has been found to limit respiratory function an average of 17% with the greatest effect experienced by geriatric and pediatric subjects restricted to a hard backboard.
 - ▶ Use SMR with caution with patients presenting with dyspnea and position appropriately
 - 5.2 **Pediatric patients:**
 - 5.2.1 Consider use of padded pediatric motion restricting board
 - 5.2.2 Avoid methods that provoke increased spinal movement
 - 5.2.3 If choosing to apply SMR to patient in car seat, ensure that proper assessment of patient posterior is performed
 - 5.3 **Combative patients:** Avoid methods that provoke increased spinal movement and/or combativeness
-

STOMA AND TRACHEOSTOMY

1. INTRODUCTION:

- 1.1 Temporary or permanent placement of a tracheostomy tube is often necessary to maintain an open airway. Patients with tracheostomy tubes or stomas should not be intubated orally. Suctioning of surgical airways is often required to attempt to clear and maintain an open airway. Administration of inhaled medications will need to be given via the stomas or tracheostomy tubes
- 1.2 **Tracheostomy tube replacement:** A dislodged tracheostomy tube should not be replaced unless the paramedic has the skill and training to do so. Training should be consistent with the material contained in "Pediatric Education for Prehospital Personnel – 2000" pages 300-302. (See #4 below for stoma intubation technique.)

2. SUCTIONING:**2.1 Equipment:**

- 2.1.1 Appropriate sized suction catheter (Pediatrics use 8-10F)
- 2.1.2 Suction unit with adjustable suction capacity
- 2.1.3 Bag-valve-mask with oxygen supply
- 2.1.4 5 mL syringe filled with sterile saline

2.2 Contraindication: Use of demand valve**2.3 Procedure:**

- 2.3.1 Adjust suction to 120 - 150 mmHg for adults; decrease suction to 80 - 100 mmHg for pediatrics
- 2.3.2 Apply sterile gloves
- 2.3.3 Flush suction catheter with saline to lubricate tip and establish patency of suction catheter
- 2.3.4 Remove the T tube if a tracheostomy patient is on humidified oxygen
- 2.3.5 Ventilate the patient with 100% oxygen several times
- 2.3.6 Insert the suction catheter into the stoma or tracheostomy opening with the suction off (the thumb hole open). The short length of the tracheostomy tube facilitates suctioning. The catheter may be directed through the right or left bronchus by having the patient turn his/her head to the opposite side
- 2.3.7 Apply suction by occluding the thumb hole while slowly withdrawing the catheter in a twisting motion. Suction of a tracheostomy tube should take no longer than 10 seconds for the adult patient and 3-4 seconds for the pediatric patient
- 2.3.8 If mucus plugs or thick secretions are present, the instillation of 3 - 5 mL of sterile saline may be helpful
- 2.3.9 Pre-oxygenate with 100% O₂
- 2.3.10 Check breath sounds
- 2.3.11 Suctioning can stimulate a cough reflex. Allow the patient to cough. Be prepared to suction or catch secretions from the tracheal opening. Recheck breath sounds

3. ALBUTEROL MEDICATION ADMINISTRATION:**3.1 Equipment**

- 3.1.1 Albuterol
- 3.1.2 Sterile Normal Saline

STOMA AND TRACHEOSTOMY

3.1.3 Hand Held Nebulizer

3.1.4 Oxygen tubing and supply

3.1.5 Additional reservoir tubing (optional)

3.2 Procedure:

3.2.1 Assure clear airway. Suction if necessary

3.2.2 Assemble hand held nebulizer as for patient with intact upper respiratory track

3.2.3 Attach trach collar to reservoir tubing

3.2.4 Connect oxygen delivery tubing to oxygen source at sufficient flow rate to produce misting

3.2.5 Fit trach collar over stoma or tracheostomy tube

3.2.6 Instruct patient to breathe slowly and deeply

3.2.7 Optional: Mouthpiece may be replaced by additional reservoir tubing.

4. STOMA INTUBATION:

4.1 Equipment:

4.1.1 appropriate sized cuffed and uncuffed ET tubes

4.1.2 bag-valve-mask

4.1.3 appropriate sized suction catheters

4.1.4 oxygen supply

4.1.5 suction equipment with adjustable suction capacity

4.2 Contraindication: Use of demand valve

4.3 Procedure:

4.3.1 Select the largest endotracheal tube that will fit through the stoma without force. Check the cuff, unless an uncuffed tube is being used on a pediatric patient

4.3.2 Pre-oxygenate with 100% oxygen using a bag valve mask device with the face mask fitted over the stoma. Do not use demand valve

4.3.3 Wear sterile gloves. Do not use a stylet. It is not necessary to lubricate the tube

4.3.4 Suction, if necessary

4.3.5 Pass the endotracheal tube and inflate the cuff. The pharynx has been bypassed, so the tube will protrude from the neck several inches

4.3.6 Hold the tube in place, watch for chest rise with ventilation

4.3.7 Secure the tube and ventilate with 100% O₂

4.3.8 Auscultate the lung fields. Check the neck for subcutaneous emphysema, indicating false passage

4.3.9 Allow no longer than 30 seconds for the procedure

TRANSCUTANEOUS PACING - TCP

1. **INDICATIONS:** This procedure should be used on patients experiencing symptomatic bradycardia (see Adult and Pediatric Bradycardia - **page 38** and **page 66**). This includes patients with “failed” pacemakers. Note: Bradydysrhythmias in children are usually due to respiratory causes

Consider alternate causes of the dysrhythmia and treat appropriately prior to initiation of TCP:

- ▶ Hypoxia
- ▶ Trauma
- ▶ Drug overdose
- ▶ Electrolyte imbalance (not treatable in the field setting)
- ▶ Hypothermia

2. **CONTRAINDICATIONS:**

- 2.1 Asystole
- 2.2 Bradyasystolic arrest

3. TCP should not be delayed pending IV access or while waiting for atropine to take effect in an unstable patient. TCP should be initiated simultaneously with atropine in this setting

4. **PROCEDURE:**

- 4.1 Consider administering midazolam (see sedation procedure) and/or **Pain Management** (Adult **page 43** - Pediatric **page 68**). Decrease dose of one or both agents with concomitant midazolam administration or age > 65
- 4.2 If unable to start IV, consider administering IM
- 4.3 Place pads on the patient
- 4.4 Set initial TCP rate at 80 beats per minute (bpm)
- 4.5 Begin output at 0 milliamps (mA). Increase by 10 mA until capture/pulses are noted. Once capture is confirmed, continue pacing at a slightly higher output level (10%)
- 4.6 If capture is maintained but the patient remains symptomatic of inadequate tissue perfusion (BP < 90 systolic, altered level of consciousness) consider increasing **the rate** by 10 bpm until 100 bpm is reached
- 4.7 If perfusion remains a problem, consider dopamine
- 4.8 **Contact the Base Physician for consultation if perfusion remains a problem and/or alteration of TCP settings**

TRANSFER OF CARE**AUTHORITY: Division 2.5 of the California Health and Safety Code, Section 1798.6**

"Authority for patient health care management in an emergency shall be vested in that licensed or certified health care professional, which may include any paramedic or other prehospital emergency personnel at the scene of the emergency, **who is most medically qualified specific to the provision of rendering emergency medical care.** If no licensed or certified health care professional is available, the authority shall be vested in the most appropriate medically qualified representative of public safety agencies who may have responded to the scene of an emergency."

"Notwithstanding ... **authority for the management of the scene** of an emergency shall be vested in the appropriate public safety agency having primary investigative authority. The scene of an emergency shall be managed in a manner designed to minimize the risk of death or health impairment to the patient and to other persons who may be exposed to the risks as a result of the emergency condition, and priority shall be placed upon the interests of those persons exposed to the more serious and immediate risks to life and health. Public safety officials shall consult emergency medical services personnel or other authoritative health care professionals at the scene in the determination of relevant risks."

1. Medical personnel will not enter an unsafe emergency/crime scene, or continue to render care until released by the incident commander. Public safety personnel shall secure the scene to make entry reasonably safe
2. Components of the transfer of care at the scene of an emergency include:
 - 2.1 Evaluation of the scene
 - 2.2 Medical aspects of extrication and all movement of the patient(s)
 - 2.3 Assessment
 - 2.4 Treatment rendered
 - 2.5 Destination
3. If a disagreement occurs between medical personnel at the scene on any aspects of the transfer of care:
 - 3.1 If time permits, **contact the Base Physician** to determine the appropriate treatment/destination. Otherwise, the more conservative patient-based decision will prevail (e.g. if field personnel disagree on transport vs. non-transport, the patient will be transported)
 - 3.2 If necessary, involved personnel will immediately notify the EMS on-call representative through ALCO-CMED. The EMS on-call representative will notify the EMS Medical Director
 - 3.3 If appropriate, the EMS Medical Director will organize a meeting with the involved personnel to resolve the issues within two (2) business days

MCI/ DISASTER/ WMD TOC

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ACTIVE SHOOTER RESPONSE

1. INTRODUCTION

- 1.1 **ACTIVE SHOOTER RESPONSE-** The EMS response to Active Shooter Incidents needs to be coordinated with on scene law enforcement.
 - 1.2 EMS providers need to be ready to enter a secured scene quickly and aggressively
 - 1.3 EMS providers should be “forward leaning” and have trauma focused medical gear and triage tools available
 - 1.4 Working closely with law enforcement is critical in getting life saving medical assets to the injured as soon as the threat has been mitigated or neutralized. The UNIFIED COMMAND model is best for these types of incidents
 - 1.5 Make sure law enforcement command knows that an EMS team is ready, staged and awaiting direction. Most SWAT teams have an imbedded tactical medic that would be the logical liaison to EMS assets on scene
 - 1.6 Concepts applied are based on the Tactical Combat Casualty Care (TCCC) and the International School of Tactical Medicine (ISTM)
2. Consider the following items during an EMS response to an Active Shooter Incident:
 - ▶ Communication must be maintained throughout the incident with respective dispatch centers and on scene medical, fire and law enforcement
 - ▶ Law enforcement is in charge of the event. While in a warm zone environment, EMS should follow the direction of law enforcement
 - ▶ Law enforcement may provide a protective envelope (force protection model) around EMS providers and escort them into “warm zone” areas to treat or evacuate victims. (No active threat in the area)
 - ▶ Make sure to have emergency egress routes and casualty collection points (CCP), as well as evacuation rally points identified
 - ▶ If EMS team is brought in to extricate patient, only minimal equipment should be carried. Roll up evacuation stretchers should be considered
 - ▶ EMS teams need to be prepared to split up if law enforcement requires it
 - ▶ EMS providers should use individual medical packs with life saving bleeding and airway tools so they can work “independently” on trauma victims
 - ▶ Spinal motion restriction is not indicated for patients suffering only from penetrating trauma
 - ▶ Once the threat is eliminated, law enforcement may be available to help evacuate the injured

BIOLOGICAL ATTACK

DISEASE/ AGENT Incubation	SYMPTOMS	SIGNS	TRANSMISSION & PRECAUTIONS	TREATMENT (Adult dosage)	PROPHYLAXIS
ANTHRAX 2-6 days Range: 1 day to 8 weeks (Bacillus anthracis) bacteria	Inhalation: Flu-like symptoms, nausea, vomiting, abdominal pain, fever, respiratory distress Cutaneous: initial itching papule; fever	Inhalation: fever, followed by abrupt onset of respiratory failure, confusion widened mediastinum on chest X-ray (adenopathy), bloody pleural effusions, atypical pneumonia Cutaneous: initial itching papule, 1-3 cm painless ulcer, then necrotic center; lymphadenopathy	Aerosol inhalation No person-to-person transmission Standard precautions	Mechanical ventilation Antibiotic therapy (inhalation) Ciprofloxacin 400 mg IV q 8-12 hr OR Doxycycline 200 mg IV q 8-12 hr initial, then 100 mg IV q 8-12 hr PLUS Rifampin 10 mg/kg/d po (up to 600 mg day) OR Clindamycin 1200-2400 mg/day IM or IV	Ciprofloxacin 500 mg or Doxycycline 100 mg po q 12 hr ~ 8 weeks Amoxicillin in pregnancy and children (if susceptible) Vaccine if available
BOTULISM 12-72 hours Range: 2 hrs – 8 days toxin caused by the bacterium (Clostridium botulinum)	Difficulty swallowing or speaking (symmetrical cranial neuropathies) Symmetric descending weakness Respiratory dysfunction No sensory dysfunction No fever	Dilated or un-reactive pupils Drooping eyelids (ptosis) Double vision (diplopia) Slurred speech (dysarthria) Descending flaccid paralysis Intact mental state	Aerosol inhalation Food ingestion No person-to-person transmission Standard precautions	Mechanical ventilation Parenteral nutrition Trivalent botulinum antitoxin available from State Health Departments and CDC	Experimental vaccine has been used in laboratory workers
PLAGUE 1-3 days by inhalation (Yersinia pestis) bacteria	Sudden onset of fever, chills, headache, myalgia Pneumonic: cough, chest pain, dyspnea, fever Bubonic: painful lymph nodes	Pneumonic: Hemoptysis; radiographic pneumonia -- patchy, cavities, confluent consolidation, hemoptysis, cyanosis Bubonic: typically painful, enlarged lymph nodes in groin, axilla, and neck	Person-to-person transmission in pneumonic forms Droplet precautions until patient treated for at least three days	Streptomycin 30 mg/kg/day in two divided doses x 14 days Gentamicin 3-5 mg/kg/day IV/IM in q 8 hr dosage Tetracycline 2-4 g per day Ciprofloxacin 400 mg IV q 12 hr	Asymptomatic contacts or potentially exposed patients Doxycycline 100 mg po q 12 h Ciprofloxacin 500 mg po q 12 h Tetracycline 250 mg po q 6 hr Vaccine: not available
RICIN if inhaled, S/Sx within 4-8 hour Protein toxin produced from castor beans (Ricinus communis)	Fever, SOB, nausea, chest tightness	Sweating, pulmonary edema, cyanosis, hypotension, pulmonary and circulatory collapse	No person to person transmission Airborne precautions Standard precautions	Supportive care GI decontamination if ingested	Vaccine under development

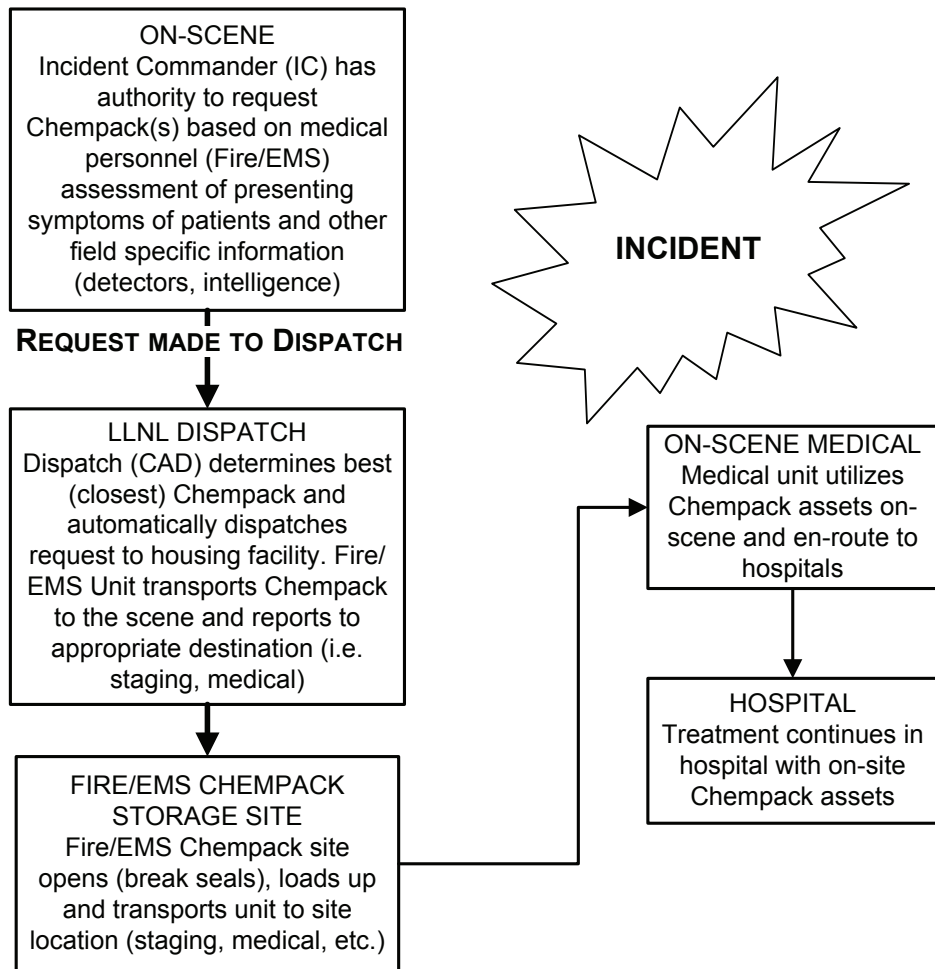
BIOLOGICAL ATTACK

BIOLOGICAL ATTACK

DISEASE/ AGENT Incubation	SYMPTOMS	SIGNS	TRANSMISSION & PRECAUTIONS	TREATMENT (Adult dosage) Note: these are for reference only, and are not in ALCO EMS protocol	PROPHYLAXIS
TULAREMIA 2-5 days Range: 1-21 days "pneumonic" (Francisella tularensis) bacteria	Fever, cough, chest tightness, pleuritic pain Hemoptysis rare	Community-acquired, atypical pneumonia Radiographic: bilateral patchy pneumonia with hilar adenopathy (pleural effusions like TB) Diffuse, varied skin rash May be rapidly fatal	Inhalation of agents No person-to-person transmission but laboratory personnel at risk Standard precautions	Streptomycin 30 mg/kg/ day IM divided bid for 14 days Gentamicin 3-5 mg/kg/ day IV in three equal divided doses x 10-14 days Ciprofloxacin possibly effective 400 mg IV q 12 hr (change to po after clinical improvement) x 10-14 day	Ciprofloxacin 500 mg po q 12 hr Doxycycline 100 mg po q 12 hr Tetracycline 250 mg po q 6 hr Experimental live vaccine
SMALLPOX 12-14 days Range: 7-17 days (Varola virus)	High fever and myalgia; itching; abdominal pain; delirium Rash on face, extremities, hands, feet; confused with chickenpox which has less uniform rash	Maculopapular then vesicular rash -- first on extremities (face, arms, palms, soles, oral mucosa) Rash with hard, firm pustules ("intra-dermal blisters") Rash is synchronous on various segments of the body	Person-to-person transmission Airborne precautions Negative pressure Clothing and surface decontamination	Supportive care Vaccinate care givers Experimental: cidofovir (useful in animal studies)	Vaccination (vaccine available from CDC)

CHEMICAL ATTACK

CHEMICAL	PROPERTIES	IMMEDIATE ACTIONS	SYMPTOMS	TREATMENT
NERVE AGENTS • VX • Sarin • Tabun	Can be liquid or gas Enters the body through: ► Skin and eyes ► Inhalation ► Ingested	► If you are exposed, the effects will appear fairly rapidly ► People around you may begin fainting, vomiting or have difficulty breathing ► Birds and insects may die quickly and fall from the sky ► IMMEDIATELY leave the area ► Avoid puddles of liquid ► If the attack was outside, you should get into a building or car ► If the attack was inside, get to the outside ► If you were directly exposed, remove clothing (place in plastic bags, if possible) ► Removing contaminated clothing is more important than modesty ► Do not remove contaminated clothing over your head; cut or tear it off to avoid contact with the eyes, nose, and mouth ► Thoroughly flush all areas where agent contacted your skin, using nearest water available ► Hazmat/fire crews are trained for immediate response and medical treatment is available at most hospitals	► Pupils shrink to pinpoints and victim begins sweating and twitching ► Runny nose, watery eyes, drooling, increased respiratory secretions, excessive sweating, difficult breathing, dimness of vision, nausea, vomiting ► Blistering agent, burning exposed eyes and skin; and lungs, mouth and throat if it is breathed in (inhaled). Not usually noticed until 1-6 hours after exposure	Note: these are for reference only, and are not in ALCO EMS protocol ► Remove clothing, flush eyes/skin with plenty of water ► Get medical attention immediately; there are antidotes for specific chemical agents ► Atropine is an effective antidote ► Remove clothing and flush eyes/skin with plenty of water ► Get medical attention immediately; there are antidotes for specific chemical agents Get fresh air immediately Flush skin/eyes with plenty of water Get medical attention immediately; there are antidotes for specific chemical agents Get fresh air immediately Flush skin/eyes with plenty of water Seek medical attention immediately; there are antidotes for specific chemical agents
SULFUR MUSTARDS	Generally thick liquid, yellow or brown in color, with a slight garlic or mustard odor. Enters the body through: ► Skin and eyes ► Inhalation ► Ingested			
HYDROGEN CYANIDE	Extremely flammable, colorless gas or liquid Enters the body through: ► Skin and eyes ► Inhalation ► Ingested			
CHLORINE	Greenish-yellow gas with stinging odor. Heavier than air, so it will settle in low spots Enters the body through: ► Skin and eyes ► Inhalation ► Ingested			

CHEMPACK DEPLOYMENT

CYANIDE POISONING

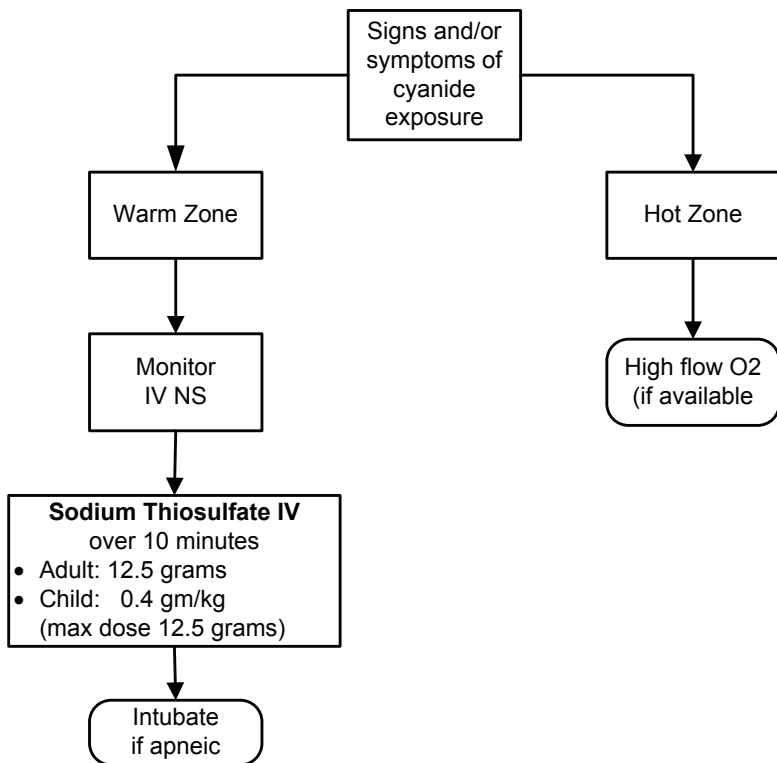
- This policy is to be used in conjunction with Smoke Inhalation **page 21** and HazMat **page 157**
- Medications are only given if the patient is showing signs and symptoms of cyanide poisoning. THEY ARE NOT TO BE GIVEN PROPHYLACTICALLY

Symptoms:

- ▶ Exposure to a vapor or liquid that may smell like "bitter almonds"
- ▶ Upper airway and/or eye irritation
- ▶ Flushing
- ▶ Headache
- ▶ Anxiety
- ▶ Agitation
- ▶ Vertigo
- ▶ Weakness
- ▶ Nausea
- ▶ Muscular trembling

Signs:

- ▶ Transient hyperpnea, followed by seizures, apnea and cardiac collapse
- ▶ Tremor
- ▶ Normal pupils
- ▶ Diaphoresis
- ▶ Cyanosis



DECONTAMINATION INCIDENT

- ▶ This policy is for instances where a patient presents to EMS personnel without forewarning of a possible hazardous materials incident
- ▶ All patients exposed or contaminated by suspected hazardous materials should be decontaminated prior to transportation to the emergency department
e.g. - Industrial Response Team, Fire Hazardous Materials Response

1. Paramedics will advise the base hospital of the following:
 - 1.1 Nature of the emergency (i.e., describe the incident)
 - 1.2 Total number of suspected patients exposed or contaminated
 - 1.3 Number of patients exposed and exhibiting symptoms
 - 1.4 Chemical identification, if known
 - 1.5 Patient status
 - 1.6 Treatment prior to transport
 - 1.7 Describe decontamination provided on scene
 - 1.8 ALS, BLS
2. Base will acknowledge report and advise on further treatment as necessary. If, while enroute to the hospital, the crew inadvertently discovers a potentially contaminated individual, the following instructions will be followed:
 - 2.1 Crew should ensure that receiving hospital has clear understanding of the potential for a hazardous materials incident
 - 2.2 Stage the ambulance away from the receiving hospital ED until notified where the decontamination area will be located
 - 2.3 Keep the patient and ambulance personnel in or near the ambulance until the decontamination area is ready to receive the patient(s)
 - 2.4 Ambulance personnel should remain in or near their vehicle until the decontamination team is ready to decontaminate EMS personnel, if necessary

RADIOLOGICAL DISPERSION DEVICE (RDD), AKA “DIRTY BOMB”

Adapted from: Nuclear Regulatory Commission <http://www.nrc.gov>

1. Background:

- 1.1 Principal type of “dirty bomb” combines a conventional explosive such as Dynamite/Explosives with radioactive material
- 1.2 A conventional explosive itself would have more immediate lethality than dirty bombs
- 1.3 Most probably, not enough radiation would be present in a dirty bomb to:
 - ▶ Kill people
 - ▶ Cause severe illness
- 1.4 Most radioactive material employed in hospitals is sufficiently benign
- 1.5 About 100,000 patients a day are released with this material in their bodies
- 1.6 Certain other radioactive materials could contaminate up to several city blocks
- 1.7 It could create fear and possibly panic and requiring potentially costly cleanup
- 1.8 A second type of RDD might involve a powerful radioactive source hidden in a public place
- 1.9 Hiding places may include such places as :
 - ▶ Trash receptacles
 - ▶ Latrines
 - ▶ Delivery vehicles
 - ▶ Vending machines
 - ▶ Parked vehicles
- 1.10 A dirty bomb is in no way similar to a nuclear weapon
- 1.11 The presumed purpose of its use would be as a Weapon of Mass Disruption
- 1.12 Not as a Weapon of Mass Destruction

2. Impact of a Dirty Bomb:

- 2.1 The extent of local contamination would depend on a number of factors
- 2.2 Factors includes:
 - ▶ The size of the explosive
 - ▶ The amount and type of radioactive material used
 - ▶ The weather conditions
- 2.3 Prompt detection of the kind of radioactive material employed would greatly assist local authorities
- 2.4 It would assist in advising the community on protective measures, such as:
 - ▶ Quickly leaving the immediate area or
 - ▶ Going inside until being further advised
- 2.5 Subsequent decontamination of the affected area could involve considerable:
 - ▶ Time
 - ▶ Expense

3. What Should You Do Following an Explosion

- 3.1 Move away from the immediate area--at least several blocks from the explosion
- 3.2 Head inside and establish shelter-in-place
- 3.3 This to reduce exposure to radioactive dust

RADIOLOGICAL DISPERSION DEVICE (RDD), AKA “DIRTY BOMB”

- 3.4 Turn to radio/TV channels for advisories from:
 - ▶ Emergency response
 - ▶ Health authorities
- 3.5 If facilities are available, remove clothes and place them in a sealed plastic bag
- 3.6 Save contaminated clothing to allow for testing for radiation exposure
- 3.7 Take a shower to wash off dust and dirt, or to reduce radiation exposure, if the explosive device is radioactive
- 3.8 If radiation was released, local news will advise people where to report for:
 - ▶ Radiation monitoring
 - ▶ Blood tests
 - ▶ Other tests
- 3.9 Test to determine if in fact exposed and what steps to take to protect health.

4. Risk of Cancer

- 4.1 Short time or small doses of radioactive dust does not mean a person will get cancer
- 4.2 The additional risk will likely be very small
- 4.3 Potassium Iodide (KI) will not be protective except in the unlikely event that the dirty bomb contained radioactive iodine isotopes
- 4.4 The iodine isotopes would have to be in large quantities
- 4.5 Radioactive iodine isotopes are not particularly attractive for use in an RDD
- 4.6 KI only protects the thyroid from radioactive iodine
- 4.7 KI offers no protection to other parts of the body or against other radioactive isotopes

HAZARDOUS MATERIALS INCIDENTS - EMS RESPONSE

The information contained in this policy is based on guidelines contained in EMSA #231 - Hazardous Materials Medical Management Protocol

1. **INTRODUCTION:** Individuals who respond to and function within the **Exclusion Zone** (Hot Zone) or **Contamination Reduction Zone** (Warm Zone) must be members of specially trained HazMat teams, trained in the use of self contained breathing apparatus, selection of appropriate chemical protective suits and how to function in them. Other rescuers should be trained in accordance with **Federal OSHA** standards identified in OSHA 29 CFR 1910.120 and **California OSHA** as defined in the California Code of Regulations, Title 8, Section 5192
2. **EMS interface with HazMat teams**
 - 2.1 The Incident Command System (ICS) shall be used for on scene management
 - 2.2 The Medical Branch Supervisor shall make contact with the Incident Commander, face-to-face or by radio, who will direct the Medical Branch Supervisor to the Hazardous Materials Group Supervisor
 - 2.3 Pertinent information will be relayed to the Medical Branch Supervisor including, patient information (number requiring transport and injuries) and the type of exposure (chemical name and information about the chemical [**SPELL CHEMICAL NAME**])
 - 2.4 The Medical Branch Supervisor shall make Base contact in order to obtain recommendations regarding decontamination and patient treatment
 - 2.5 Once cleared by the Site Access Leader, EMS personnel may proceed to the end of the "Contamination Reduction Corridor" to receive patients. Any secondary treatment by EMS personnel should be done in the "Support Area"
3. **Definitions**
 - 3.1 **Exclusion Zone** (Hot Zone) - Area that encompasses all known or suspected hazardous materials
 - 3.2 **Contamination Reduction Zone** (Warm Zone) - Area between the "Exclusion Zone" and the "Support Area". "Safe Refuge Area" and "Contamination Reduction Corridor" are set up within this area
 - 3.3 **Contamination Reduction Corridor** - An area within the "Contamination Reduction Zone" where the actual decontamination takes place. EMS personnel, once cleared, receive patients at the end of the "Contamination Reduction Corridor" and move them to the "Support Area" for secondary treatment
 - 3.4 **Support Zone** (Cold Zone) - Clean area outside "Contamination Reduction Zone" where equipment and rescue personnel are staged to receive and treat decontaminated patients. Secondary exposure to hazardous materials is not expected in this area and special clothing is not required

HAZARDOUS MATERIALS INCIDENTS - EMS RESPONSE

4. Patient Management

- 4.1 Follow the Multi-casualty Incident (MCI) Plan – page 159, if appropriate
- 4.2 For nerve gas/cyanide exposure:
 - **Patient exposure:**
Cyanide Poisoning – page 153
Nerve Agent Treatment - page 164, (HazMat trained paramedics only)
 - **Rescuer exposure:** Nerve Agent Autoinjector Administration – page 162
- 4.3 Paramedics should **contact the Base Physician** early in the incident regarding treatment for other specific exposures
- 4.4 EMTs and paramedics may only render care within their scope of practice

5. Scene Management Responsibilities Specific to HazMat Incidents

- 5.1 Police Responsibilities
 - 5.1.1 Evacuations ahead of hazard area. Evacuation plans developed under unified command
 - 5.1.2 Traffic control in and around effected area(s)
 - 5.1.3 Incidents on State/Federal Highways joint command is with CHP
- 5.2 Fire Department Responsibilities
 - 5.2.1 Incident Stabilization
 - 5.2.2 Rescue and medical treatment (all paramedics may provide treatment in Cold Zone)
 - 5.2.3 Assistance to responsible party or agency with development of appropriate cleanup/disposal plan. May include the assistance of other agencies, (i.e. environmental health, etc.)

MULTI-CASUALTY INCIDENT - EMS RESPONSE

- 1. INTRODUCTION:** Multi-Casualty Incident (MCI) is defined as any incident where the number of injured persons exceeds the day-to-day operating capabilities; requiring additional resources and/or the distribution of patients to multiple hospitals. This will be different for each incident based on time of day, location, resources available etc.
- An internal notification procedure should be identified by each agency. This procedure must also include notification of ACRECC
- 3. INITIATE AN MCI ALERT**

MCI LEVELS	<p>► MCI LEVEL I 5-14 patients (approximately)</p> <p>A suddenly occurring event that overwhelms the routine first response assignment. The number of patients is greater than can be handled by the usual initial response. Depending on the severity of the injuries the system may have adequate resources to respond and transport the patients. Duration of the incident is expected to be less than 1 hour. Examples: Motor vehicle accident, active shooter.</p>
	<p>► MCI LEVEL II 15-50 patients (approximately)</p> <p>A suddenly occurring event that overwhelms the first response assignment and, potentially, additional resources requested within the Operational Area and neighboring counties. Regional medical mutual aid system is activated. An adequate number of additional ambulances are not likely to be immediately available, creating a delay in transporting patients. The duration of incident is expected to be greater than an hour. Examples: Bus crash, train accident, active shooter, improvised explosive device (IED).</p>
	<p>► MCI LEVEL III 50 + patients (approximately)</p> <p>A suddenly occurring event that overwhelms the first response assignment, additional resources requested within the Operational Area, and mutual aid from neighboring counties (approximately 50+ victims). It is not possible to respond with an adequate number of ambulances to the incident and promptly respond to other requests for ambulance service. Regional medical mutual aid system is activated. Air and ground ambulance and other resources from outside the county will need to be requested. Not only will ambulance service be inadequate but receiving hospitals will be overwhelmed. In an incident of this size the operational area EOC and disaster plan may be activated. Examples: Commercial airline crash, building collapse, active shooter.</p>
WHO MAY INITIATE	Any first arriving unit
HOW TO INITIATE	Through ACRECC
WHAT INFORMATION SHOULD BE PROVIDED TO ACRECC	Type of incident The location of the incident An estimated number of injured
HOW TO CANCEL AN MCI ALERT	Through ACRECC

MULTI-CASUALTY INCIDENT - EMS RESPONSE

4. MANAGEMENT OF MCI INCIDENTS AND PATIENT DISTRIBUTION

- 4.1 Once an MCI alert is determined by prehospital personnel, Alameda County Regional Emergency Communications (911 dispatch) will be notified and will "Initiate an MCI" under the Reddinet MCI module. ACRECC will immediately send an "ED Capacity poll and general notification" to the hospitals in Alameda County
- 4.2 For MCI Levels II & III, ACRECC will notify the EMS Duty Officer of the incident
- 4.3 Emergency responders shall perform triage using one of the following triage methods:
 - ▶ The Simple Triage and Rapid Treatment (START) algorithm for adults and JumpSTART for pediatrics
 - ▶ The Sort, Assess, Lifesaving Interventions, Treatment / Transport (SALT) algorithm for patients in all age groups
- 4.3.1 Acuity based Triage colors for both Triage Tape and Triage Tags are universally accepted as Black (expectant / deceased), Red (immediate / life threatening.), Yellow (delayed / serious non life threatening), and Green (minor / walking wounded). Only Black, Red, Yellow, and green are acceptable triage colors
- 4.3.2 The use of colored "Triage Tape" upon initial contact with victims at the crisis site is preferred over Triage Tags to identify initial acuity. Triage tags should be used at the external Casualty Collection Point (CCP) outside the crisis site or applied to patients during transport. Acuity guided transport of all patients shall occur in a coordinated and expedient manner
- 4.4 Hospital Poll: For MCI incidents involving 15+ patients, ACRECC will send a "bed capacity" poll to all hospitals in Alameda County to confirm bed availability
- 4.5 For the duration of the MCI, the Transportation Unit Leader under ICS will determine transportation methods and destinations
- 4.6 Whenever possible, patients should be transported to the most appropriate hospital without overloading one particular facility. Every effort will be made to transport trauma patients to a designated trauma hospital. In a Level II or III MCI, transport to a designated trauma center may not always be possible
- 4.7 First Round Destination Procedure may be implemented without prior authorization. All Alameda County receiving hospitals should prepare to receive patients, especially those in close proximity to the incident

First Round Destination Procedure	
Non-Trauma patients** to each Alameda County receiving hospital (for a total of 6): <ul style="list-style-type: none"> ✓ Two (2) "Immediate" ✓ Four (4) "Delayed" and/or "Minor" <p style="text-align: center; font-size: small;">** e.g.: Medical incident, HazMat</p>	Trauma patients to each Alameda County Trauma Center (for a total of 7): <ul style="list-style-type: none"> ✓ Three "Immediate" ✓ Four (4) "Delayed" and/or "Minor"

MULTI-CASUALTY INCIDENT - EMS RESPONSE

- 4.8 ACRECC in conjunction with the incident command structure will track patient numbers, acuity and destinations in ReddiNet in as close to real-time as possible. ReddiNet will serve as the primary mechanism notifying receiving facilities of the number and acuity of incoming patients. Receiving hospitals will enter patient names and other relevant information into ReddiNet. This will facilitate patient accountability and reunification. On scene EMS Supervisors may also have the ability to enter information into ReddiNet
- 4.9 Verbal notification to hospitals: In a Level I MCI, transporting units should contact the receiving hospital enroute to give an abbreviated report on the patient(s) status and ETA. In a Level II or III MCI, if ReddiNet is unavailable or non-functional, a medical communications coordinator should be designated to notify receiving facilities of the number and acuity of incoming patients.
- 4.10 Incident Log - The Transportation Unit Leader should maintain an incident log
- 4.11 The on-scene Incident Commander or designee (ie. Medical Group Supervisor or Transportation Unit Leader) should contact ACRECC during and at the conclusion of the MCI to provide and reconcile patient tracking information to ensure accountability
- 5. **RESOURCE MANAGEMENT** - The Incident Commander has the overall responsibility for developing objectives and requesting the necessary resources required to mitigate the incident. There will be no self-dispatching. Clear communications between all involved agencies is imperative
 - 5.1 The following items are MCI Management points to consider
 - ▶ The three "T's" ensure that Triage, Treatment and Transport have been addressed
 - ▶ Request resources through the Incident Commander in the early stages of the incident. Ensure adequate personnel and equipment
 - ▶ Establish staging areas. Transport Units and/or other units that do not immediately have an assignment should report to the designated staging area and wait for instructions
 - ▶ Use a one-way traffic pattern. Transport units should be staged to assure good access and egress from Loading Area
 - ▶ All incoming units drop off required EMS equipment at a designated location
 - ▶ County Disaster Trailers shall be requested through ACRECC
 - 5.2 Use ICS identification vests. At a minimum the IC, Medical Group Supervisor, Triage and Treatment, and Transportation Unit Leader should be clearly identified with vests

NERVE AGENT AUTOINJECTOR ADMINISTRATION

1. **INTRODUCTION:** Nerve agent auto-injectors are to be used when EMS personnel are exposed to nerve agents (Sarin, Soman, Tabun, VX) and have signs and symptoms of nerve agent exposure, or when ALS personnel treat victims in an MCI situation in the hot zone

2. **EQUIPMENT:**

- 2.1 Mark I autoinjector antidote kit containing:

- ▶ **Atropine** autoinjector (2 mg in 0.7 mL)
- ▶ **Pralidoxime chloride** autoinjector - **2-PAM** (600 mg in 2 mL)

- 2.2 Additional atropine (2 mg) autoinjectors

3. **PROCEDURE:** If you experience any or all of the nerve agent poisoning symptoms, you must IMMEDIATELY self-administer the nerve agent antidote (see "Nerve Agent Treatment" - [page 164](#) for signs and symptoms)

- 3.1 **Injection Site Selection:**

- ▶ The injection site for administration is normally in the **outer thigh muscle** (Figure 1). It is important that the injections be given into a large muscle area
- ▶ If the individual is thinly-built, then the injections should be administered into the **upper outer quadrant of the buttocks** (Figure 2)

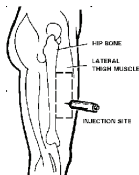


Figure 1 - Thigh injection site

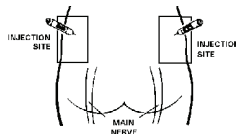
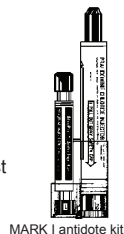


Figure 2 - Buttocks injection site



MARK I antidote kit

- 3.2 **Arming The Autoinjector:**

- ▶ Immediately put on your protective mask
- ▶ Remove the antidote kit
- ▶ With your non-dominant hand, hold the autoinjectors by the plastic clip so that the larger autoinjector is on top and both are positioned in front of you at eye level
- ▶ With your dominant hand grasp the **atropine** autoinjector (the smaller of the two) with the thumb and first two fingers. DO NOT cover or hold the needle end with your hand, thumb, or fingers-you might accidentally inject your self. An accidental injection into the hand WILL NOT deliver an effective dose of the antidote, especially if the needle goes through the hand
- ▶ Pull the injector out of the clip with a smooth motion. **The autoinjector is now armed**

- 3.3 **Administering the antidote to yourself:**

- ▶ Hold the autoinjector with your thumb and two fingers (pencil writing position). Be careful not to inject yourself in the hand!
- ▶ Position the green (needle) end of the injector against the injection site (thigh or buttock). DO NOT inject into areas close to the hip, knee, or thigh bone
- ▶ Apply firm, even pressure (not jabbing motion) to the injector until it pushes the needle into your thigh (or buttocks). Using a jabbing motion may result in an improper injection or injury to the thigh or buttocks
- ▶ Hold the injector firmly in place for at least 10 seconds. Firm pressure automatically triggers the coiled spring mechanism. This plunges the needle through the clothing into the muscle and at the same time injects the antidote into the muscle tissue
- ▶ Carefully remove the autoinjector from your injection site

NERVE AGENT AUTOINJECTOR ADMINISTRATION

NERVE AGENT AUTOINJECTOR ADMINISTRATION

- ▶ Next, pull the **2 PAM** injector (the larger of the two) out of the clip
- ▶ Inject yourself in the same manner as the steps above, holding the black (needle) end against your outer thigh (or buttocks)
- ▶ Massage the injection sites, if time permits
- ▶ After administering the first set of injections, wait 5 to 10 minutes
- ▶ After administering one set of injections, you should initiate decontamination procedures, as necessary, and put on any additional protective clothing
- ▶ Atropine only may be repeated every 10 - 15 minutes as needed. (Note: multiple doses of atropine may be needed.)

3.4 Administering the antidote to another in the Hot Zone:

- ▶ Squat, DO NOT kneel, when masking the casualty or administering the nerve agent antidotes to the casualty. Kneeling may force the chemical agent into or through your protective clothing
- ▶ Mask the casualty
- ▶ Position the casualty on his or her side (swimmer's position)
- ▶ Position yourself near the casualty's thigh
- ▶ The procedure for site selection and medication administration is the same as 3.1 – 3.3
- ▶ Atropine only should be repeated as needed- multiple doses may be needed

4. DOSAGE SCHEME FOR MARK I ADMINISTRATION - via autoinjector

Additional atropine may be needed until a positive response is achieved (decrease in bronchospasm and/or respiratory secretions)

ADULT	Signs & Symptoms		Onset	# of autoinjectors to use:	
	Vapor: small exposure ✓ Pinpoint pupils ✓ Runny nose ✓ Mild SOB		Seconds	MARK I autoinjector antidote kit – 1 dose initially (containing atropine and 2-PAM) May repeat x1 in 10 minutes	
	Liquid: small exposure ✓ Sweating ✓ Twitching ✓ Vomiting ✓ Feeling weak		Minutes to Hours	MARK I autoinjector antidote kit – 1 dose initially (containing atropine and 2-PAM) May repeat x1 in 10 minutes	
	Both: large exposure ✓ Convulsions ✓ Apnea ✓ Copious secretions		Seconds to Hours	MARK I autoinjector antidote kit – 3 doses initially (containing atropine and 2-PAM) May repeat x1 in 10 minutes	
PEDIATRIC	Age (approx.)	Weight (approx.)	Autoinjectors (#) (each type)	Atropine dose range (mg/kg)	2-PAM dose range (mg/kg)
	3-7	13-25 kg	1	0.08-0.13	24-46
	8-14	26-50 kg	2	0.08-0.13	24-46
	>14	> 51 kg	3	0.11 or less	35 or less


NOTE: While not approved for pediatric use, autoinjectors should be used as initial treatment in children with severe, life-threatening nerve agent toxicity where IV treatment is not possible or available, or a more precise IM dosing would be logistically impossible.

NERVE AGENT TREATMENT

- ▶ **Only specially trained ALS personnel may administer nerve agent antidote medications to patients.** (See [page 162](#) for auto-injector procedure)
- ▶ Nerve agent antidote medications are only given if the patient is showing signs and symptoms of nerve agent poisoning. **THEY ARE NOT TO BE GIVEN PROPHYLACTICALLY**
- ▶ This policy is to be used in conjunction with [page 157](#) (HazMat)
- ▶ Note: A decrease in bronchospasm and respiratory secretions are the best indicators of a positive response to atropine and 2-PAM therapy

Signs and Symptoms of Nerve Agent Exposure

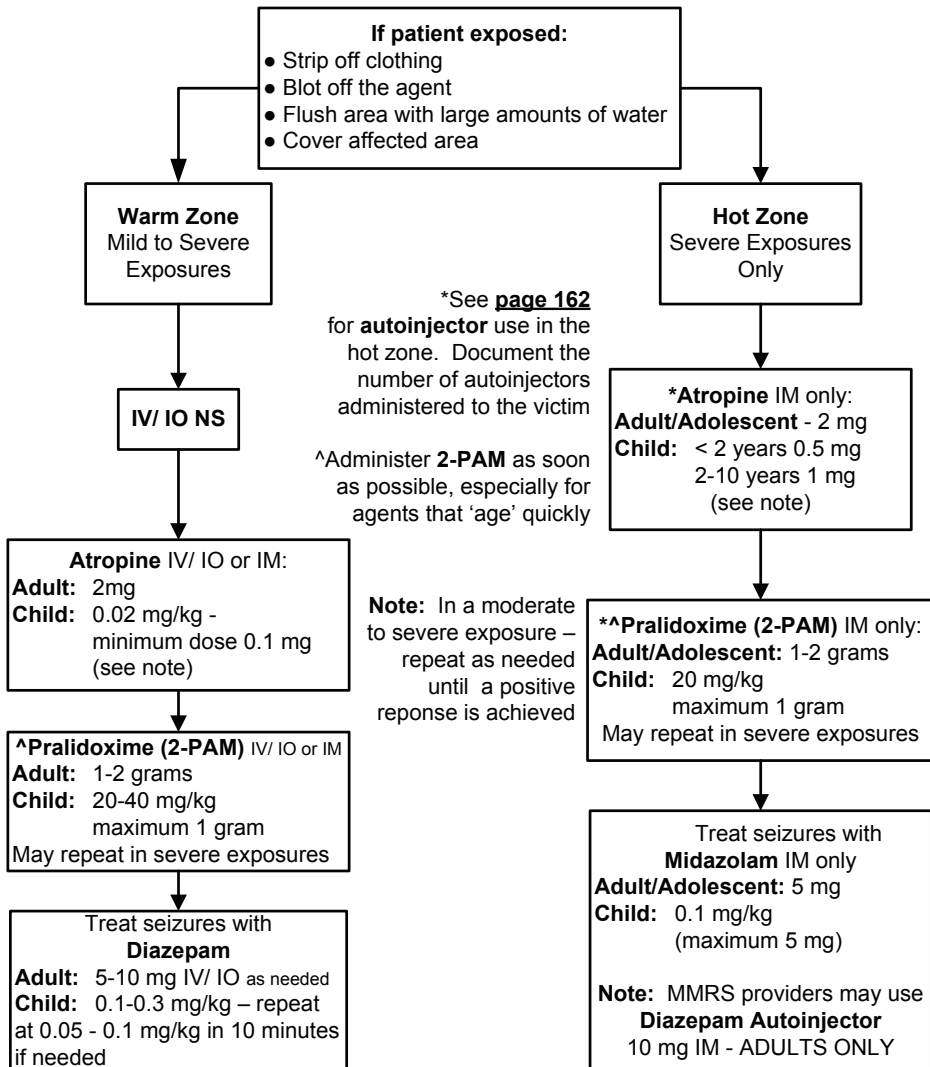
(from mild to severe)

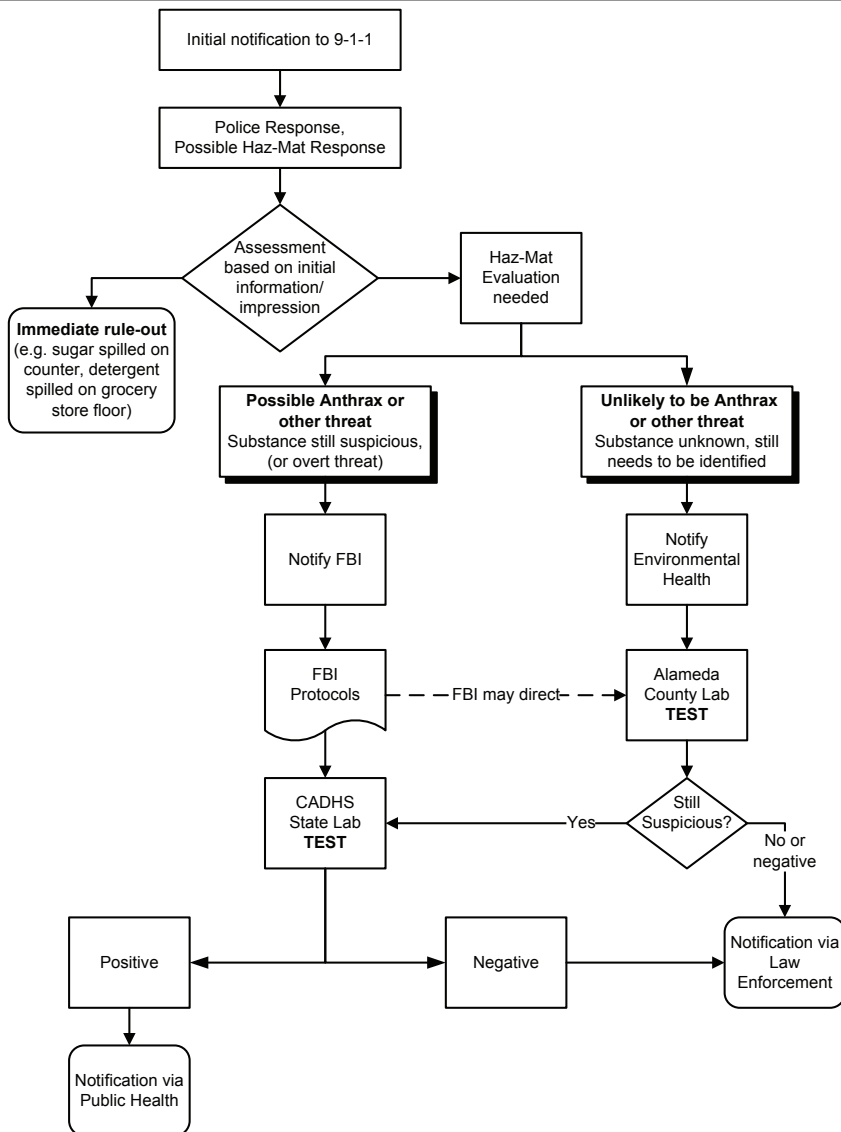
Exposure	Signs & Symptoms
	<ul style="list-style-type: none"> ▶ Unexplained runny nose ▶ Tightness in the chest ▶ Difficulty breathing ▶ Bronchospasm ▶ Pinpoint pupils resulting in blurred vision ▶ Drooling ▶ Excessive sweating ▶ Nausea and/or vomiting ▶ Abdominal cramps ▶ Involuntary urination and/or defecation ▶ Jerking, twitching and staggering ▶ Headache ▶ Drowsiness ▶ Coma ▶ Convulsions ▶ Apnea

MNEMONIC FOR NERVE AGENT EXPOSURE

Muscarinic Effects:	Nicotinic Effects:
D iarrhea	M ydriasis
U rination	T achycardia
M iosis	W eakness
B radycardia, bronchorrhea	H ypertension
E mesis	F asciculations
L acrimation	
S alivation	

NERVE AGENT TREATMENT



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Zofran: See also ondansetron