MARIN HEALTH & HUMAN SERVICES
Health, Well-being & Safety

Larry Meredith, Ph.D., Director

DIVISION OF PUBLIC HEALTH
EMERGENCY MEDICAL SERVICES

Date: July 1, 2014

To: Holders of EMS Policy and Procedure Manuals

From: Dustin Ballard, MD
EMS Agency Medical Director

Subject: **Update to Policy Manual, Change Notice #33 (updated)**

Enclosed please find Update #33 to the EMS Policy and Procedure Manual. These new and revised policies and procedures are effective **July 1, 2014**. Please update the Record of Change page and replace the Table of Contents and Signature page.

Revised Policies and Procedures include:

- 3300 EMT-P Accreditation/Continued Accreditation
- 4100 EMT AED Service Provider
- 4200 EMD
- 4600 Trauma System
- 4605 Trauma System Communication
- 4608 Trauma System Training
- 5001 General System Operations
- 5004 Description of units
- 5006 ALS First Responder
- 5007 Fireline Personnel
- 5010 Provider Equipment and Supplies
- 5011 CCT Supplies and Equipment
- 5011a CCT Check Sheet
- 5100 EMS Aircraft
- 7001 Prehospital Contact
- 7006 PCR Policy
- ALS PR 11 External Cardiac Pacing
- ALS PR 13 CPAP Procedure
- ATG 2 Adult Pain Management
- ATG 3 Adult Sedation Policy
- BLS 1 RMC
- BLS PR 2 Oxygen Therapy
- BLS PR 9 Nerve Gas Autoinjector
- C4 Bradycardia
- C10 ROSC
- GPC 13 Spinal Motion Restriction
- GPC 13A Spinal Injury Assessment
- M 4 Poisons/Drugs
- M 6 Sepsis
- N 2 Seizures
- N 4 CVA
- O 4 Severe Pre-Eclampsia/Eclampsia
- P 3 Pediatric Respiratory Distress
- P 4 Pediatric Bradycardia
- P 6 Pediatric Tachycardia Poor Perfusion
- P 9 Pediatric Seizure
- P 10 Pediatric ALOC
- P 14 Pediatric ALTE
- P 18 Pediatric Medication List
- R 5 Acute Pulmonary Edema

New Policies include:

- 7006b Medical Abbreviations
- GPC 14 Bariatric Transports
- GPC 15 Specialty Patient

SPECIAL NOTIFICATION:

Important revisions to be implemented 7/1/2014 (not included in draft comment periods)

1. P6 – (Pedi Tachy, Poor Perfusion): revised midazolam dosage
2. P9 – (Pedi Seizure) – revised midazolam dosage
3. P10 - deleted ETT administration of Narcan, deleted SQ administration of Narcan
4. P18 – (Pedi med list) revised D10% concentration, revised Midazolam dosage for cardioversion
5. O 4 – Severe Pre-eclampsia/Eclampsia – revised midazolam dosage
6. M 4 Poisons/Drugs - revised midazolam dosage
7. GPC13A SMR – Added phrase to flow diagram "Pass State of Main?"
8. ALS PR 11 – 1) revised midazolam dosage 2) added Physician consult box for Morphine post Midazolam
9. ALS PR 13 –revised wording on administration of Albuterol and Ipatropium
10. ATG2 – revised wording on Adult Pain Management
11. ATG 3 – revised Midazolam dosage and language for consistency
12. Added "EM#" to bottom of AMA/RAS form to be consistent with PCR policy
13. N2 – (Adult Seizure) revised midazolam dosage
14. List of Medical Abbreviations – new policy

If you have not received training on these changes, please contact your CQI Liaison or Training Officer. Please ensure that the changes are made in your manual.

UPDATE 7/10/14: In response to queries from EMS providers and educators, some minor policy update revisions have been made. The dosing and instructions for Versed (midazolam) have been standardized across adult and pediatric policies/procedures. The policies affected by this change are: ALS PR 11, ATG 2, ATG 3, ATG 7, M 4, N 2, O 4, P 6, P 9, P 11, and P 18.

Additionally, the language for pediatric SMR regarding car seats/boosters has been modified. The new language in GPC 13 is as follows:

- **Infants or children restrained in a front or rear -facing car seat (excludes booster) may be immobilized and extricated in the car seat. The infant or child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).**

- **Children restrained in a booster seat (with or without a back) need to be extricated and immobilized following standard SMR procedures**.

This update #33 now contains those updated policies mentioned in this note.

EMS Program Policy & Procedure Manual

TABLE OF CONTENTS

Revised – 07/2014

	7007	Interim Policy Memo	07/2013

	Patient Care	
GPC	Adult Cardiac Arrest Guideline	07/2013
GPC 1	Cancellation Of ALS Response	05/2008
GPC 2	AMA	05/2008
GPC 3	RAS	05/2008
GPC 3A	AMA / RAS Form	05/2008
GPC 4	Destination Guidelines	07/2013
GPC 5	Interfacility Transfer	05/2008
GPC 6	Medical Personnel On Scene	05/2008
GPC 6A	Doctor On Scene Card	05/2008
GPC 7	DNR / POLST	07/2013
GPC 8	Anatomical Gift/Donor Card Search	05/2008
GPC 9	Suspected Child/Elder Abuse	05/2008
GPC 9A	Child Abuse Form	05/2008
GPC 9B	Elder Abuse Form	05/2008
GPC 10	Sexual Assault	05/2008
GPC 11	Patient Restraint	05/2008
GPC 12	MCI	05/2008
GPC 13	Spinal Motion Restriction	07/2014
GPC 13a	Spinal Injury Assessment	07/2014
GPC 14	Bariatric Patient Transports	07/2014
GPC 15	Specialty Patients	07/2014
BLS 1	Routine Medical Care BLS	07/2014
BLS 2	Chest Pain BLS	05/2008
BLS 3	Bronchospasm/Asthma/Copd BLS	05/2008
BLS 4	Seizure BLS	05/2008
BLS 5	Determination Of Death BLS	06/2009
BLS 6	Early Transport Decisions	05/2008
BLS PR 1	Authorized Procedures For EMT1	05/2008
BLS PR 2	BLS Oxygen Therapy	07/2014
BLS PR 3	Administration Of Oral Glucose	05/2008
BLS PR 4	Auto-Injector Epi-Pen	07/2010
BLS PR 5	Traumatic Emergencies	07/2014
BLS PR 6	Medical Emergencies	05/2008
BLS PR 7	Environmental Emergencies	05/2008
BLS PR 8	Obstetrical Emergencies	05/2008
BLS PR 9	Nerve Gas Auto-Injector	06/2009
ATG 1	Routine Medical Care ALS	07/2012
ATG 2	Adult Pain Management	07/2014
ATG 2A	Adult Pain Addendum	05/2008
ATG 3	Adult Sedation	07/2014
ATG 4	Transfer Of Care	07/2011
ATG 5	Adult Intraosseous Infusion Policy	07/2012
ATG 6	Determination Of Death ALS	07/2012
ATG 7	Adult Medication List	07/2013
ALS PR 01	Expanded Scope Of Practice For EMT- P	DELETED
ALS PR 02	Adult Intraosseous	07/2012
ALS PR 03	Adult Oral Intubation	07/2012
ALS PR 04	ETTI	05/2008

ALS PR 05	Cricothyroidotomy	DELETED
ALS PR 06	Combitube	DELETED
ALS PR 07	Intranasal Meds (Versed / Narcan)	07/2012
ALS PR 08	Needle Thoracostomy Pleural Decomp.	07/2011
ALS PR 09	Verification Of Tube Placement	05/2008
ALS PR 10	IV Access	05/2008
ALS PR 11	External Cardiac Pacing	07/2014
ALS PR 12	12-Lead ECG	07/2010
ALS PR 13	Continuous Positive Airway Pressure	07/2014
ALS PR 14	King Airway Procedure	07/2012
ALS PR 15	Impedance Threshold Device	DELETED
ALS PR 16	Metered Dose Inhaler	07/2010
C 1	Ventricular Fib/ Pulseless Vtach	07/2012
C 2	PEA	07/2012
C 3	Asystole	07/2012
C 4	Bradydysrhythmia	07/2014
C 5	Ventircular Ectopy	deleted
C 6	Wide Complex Tachycardia	05/2008
C 7	Narrow Complex Tachycardia	05/2013
C 8	Chest Pain ALS	07/2012
C 9	STEMI	07/2014
C 10	Return of Spontaneous Circulation (ROSC)	07/2014
E 1	Heat Illness	05/2008
E 2	Cold Induced Injury	05/2008
E 3	Envenomation	05/2008
E 4	Burns	07/2010
E 5	Drowning / Near Drowning	05/2008
M 1	Non-Traumatic Shock	05/2008
M 2	Gi Bleeding	05/2008
M 3	Allergic Reaction / Anaphylaxis	05/2008
M 4	Poisons / Drugs	07/2014
M 5	Severe Nausea/Vomiting	07/2013
M 6	Sepsis	07/2014
N 1	Coma / ALOC	05/2008
N 2	Seizure	07/2014
N 3	Syncope	05/2008
N 4	CVA / Stroke	07/2014
O 1	Vaginal Hemmorhage	07/2010
O 2	Imminent Delivery - Normal	05/2008
O 3	Imminent Delivery - Complications	05/2008
O 4	Severe Eclampsia / Preeclampsia	07/2014
R 1	Respiratory Arrest	05/2008
R 2	Airway Obstruction	07/2012
R 3	Acute Respiratory Distress	07/2012
R 4	Bronchospasm/Asthma/COPD	05/2008
R 5	Acute Pulmonary Edema	07/2014
R 6	Pneumothorax	05/2008
R 7	Toxic Inhalation	05/2008
T 1	Traumatic Injury	05/2008
T 2	Head Trauma	DELETED
T 3	Crush Syndrome	05/2008

T 4	Management of Less-Than-Lethal-Interventions	07/2013
P 01	Pediatric Pulseless Arrest	07/2011
P 02	Newborn Resuscitation	07/2011
P 03	Pediatric Respiratory Distress	07/2014
P 04	Pediatric Bradycardia	07/2014
P 06	Pediatric Tachycardia Poor Perfusion	07/2014
P 07	Pediatric Shock	07/2011
P 08	Pediatric Allergic Reaction	07/2012
P 09	Pediatric Seizure	07/2014
P 10	Pediatric ALOC	07/2014
P 11	Pediatric Toxic Exposure	07/2014
P 12	Pediatric Burns	07/2011
P 13	Pediatric Trauma	07/2011
P 14	Pediatric ALTE	07/2014
P 15	Pediatric Pain Management	07/2011
P15A	Pediatric Pain Addendum	05/2008
P 16	Pediatric Sexual Assault	07/2011
P 17	Pediatric IO Policy	05/2008
P 18	Pediatric Medications List	07/2014
P PR 1	Pediatric IO Procedure	05/2008
P PR 2	Pediatric Oral Intubation	05/2008

COUNTY OF MARIN

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Division of Public Health Services

Emergency Medical Services Agency

Policy and Procedure Manual

July 1, 2014

Miles Julihn, EMS Administrator, EMS Agency

Dustin Ballard, MD, Medical Director, EMS Agency

EMS Policy & Procedures Manual

Record of Change

Keep your policy manual current. After receiving and filing additional or revised policies/protocols, initial and date the block following the appropriate change.

There should not be any blank boxes between initialed blocks; this means you either failed to record the CHANGE NOTICE or have not received it. Notify the Marin County EMS Office if you did not receive a CHANGE NOTICE.

No.	Initial	Date		No.	Initial	Date		No.	Initial	Date
1		11/94		19		07/2003		37		
2		08/95		20		09/2003		38		
3		01/96		21		02/2004		39		
4		08/96		22		01/2005		40		
5		01/97		23		01/2006		41		
6		04/97		24		N/A		42		
7		10/97		25		07/2006		43		
8		01/98		26		01/2007		44		
9		08/98		27		05/2008		45		
10		03/99		28		06/2009		46		
11		10/99		29		07/2010		47		
12		11/99		30		07/2011		48		
13		04/2000		31		07/2012		49		
14		10/2000		32		07/2013		50		
15		01/2001		33		07/2014		51		
16		07/2001		34				52		
17		01/2002		35				53		
18		01/2003		36				54		

EMS Policy & Procedures Manual

Errata Report

If any errors, (i.e.; typographical, grammatical, calculations or omissions) are noted in this manual, please inform this office immediately. To insure that the appropriate policy is changed, please make a copy of this form, fill in the required information and send it to us. Thank you.

Policy/Protocol Title	
Policy Number	
Page Number	
Correction	
Policy/Protocol Title	
Policy Number	
Page Number	
Correction	
Policy/Protocol Title	
Policy Number	
Page Number	
Correction	
Policy/Protocol Title	
Policy Number	
Page Number	
Correction	

PARAMEDIC ACCREDITATION/CONTINUED ACCREDITATION

I. INITIAL ACCREDITATION

A. To be eligible for accreditation in Marin County an individual must:
   1. Provide evidence of possession of a valid California statewide paramedic license which is current.
   2. Provide proof of employment with a designated paramedic service provider within the local EMS jurisdiction.
   3. Apply to the local EMS Agency. Application includes the following:
      a. Completion of application form which includes a statement that the individual is not precluded from accreditation for reasons defined in Section 1798.200 of the Health and Safety Code.
      b. Check or money order payable to "County of Marin" in the amount as per fee schedule.
   4. Provide proof of completing an approved Marin County EMS System orientation not to exceed eight (8) hours, that includes all topics specified in the current "**Marin County Paramedic Initial Accreditation Learning Objectives**" published on the EMS Agency website: www.marinems.org
   5. Comply with the following additional requirements:
      a. Permit verification of status with other certifying or accrediting agencies.
      b. Complete a written Protocol Quiz with 80% accuracy.

B. Accreditation procedure
   1. The local EMS Agency shall accredit the individual to practice in Marin County. Accreditation to practice shall be continuous as long as State of California paramedic licensure is maintained and local requirements are met. The paramedic may practice immediately in the basic scope of practice when working as a second paramedic during the accreditation process.
   2. Accreditation is indicated by the issuance of a card bearing the date of issuance, Marin County Accreditation number and the signature of the EMS Agency Medical Director.
   3. The EMS agency shall notify individuals applying for accreditation of the decision to accredit within thirty (30) days of application. If requested by the applicant accreditation may be extended at the discretion of the EMS Program
   4. EMS Agency shall notify the EMS Authority within ten days of the accreditation action.

II. MAINTAINING ACCREDITATION

A. Accreditation is maintained when the following requirements are met:
   1. Successful completion of the paramedic licensure process. The paramedic shall forward proof of successful licensure and completion of local requirements to LEMSA prior to expiration date.

2. Employment with a designated paramedic service provider within the local jurisdiction. Employer shall notify LEMSA within ten (10) days of paramedic leaving employment.
3. Completion of the annual Policy and Procedure Update by July 1st of each year or as defined by the EMS Agency.

B. Inactive Accreditation
1. Accreditation becomes inactive if one or more of the following occur:
   a. Paramedic is not currently employed by a Marin County provider OR
   b. Paramedic has not met the local requirements for continued accreditation as listed above and is less than one year into the new licensure period OR
   c. License renewal does not occur prior to the license expiration.
2. Accreditation will be continued if, prior to 180 days into the new licensure period:
   a. Paramedic presents a copy of the new/current license.
   b. Paramedic presents proof of completion of the most recent annual Policy and Procedure Update Training.
   c. A letter confirming employment is received by the LEMSA if applicable.

C. Lapsed accreditation
1. If accreditation becomes inactive for any reason and is not continued prior to 180 days into the new licensure period, the paramedic must provide proof of Policy and Procedure update which has been completed in the last year.
2. If accreditation becomes inactive for greater than one year the paramedic must complete the initial accreditation process, as listed in section I.

EMT AED SERVICE PROVIDER

I. PURPOSE

An EMT AED service provider is an agency or organization that employs individuals as defined in Section 100060 of the C.C.R., and who obtain AEDs for the purpose of providing AED services to the general public.

II. RELATED POLICIES

A. NOTE: Authority cited: Sections 1797.107 and 1797.170, Health and Safety Code. Reference: Sections 1797.170, 1797.178, 1797.196, 1797.200, 1797.202, 1797.204, 1797.220, 1798 and 1798.2, Health and Safety Code

III. POLICY

A. Scope

An EMT AED service provider shall be approved by Marin EMSA (LEMSA), or in the case of state or federal agencies, the EMS Authority (EMSA), prior to beginning service. The Authority shall notify Marin EMSA of state or federal agencies approved as EMT AED service providers. In order to receive and maintain EMT AED service provider approval, an EMT AED service provider shall comply with the requirements of this section.

B. General

1. An EMT AED service provider approval may be revoked or suspended for failure to maintain the requirements of this section.
2. An EMT AED service provider applicant shall be approved if they meet and provide the following:
   (a) Provide orientation of AED authorized personnel to the AED;
   (b) Ensure maintenance of AED equipment;
   (c) Prior to January 1, 2002, ensure initial training and, thereafter, continued competency of AED authorized personnel;
   (d) Collect and report to the LEMSA where the defibrillation occurred, as required by the LEMSA but no less than annually, data that includes, but is not limited to:
      (1) The number of patients with sudden cardiac arrest receiving CPR prior to arrival of emergency medical care.
      (2) The total number of patients on whom defibrillatory shocks were administered, witnessed (seen or heard) and not witnessed; and
      (3) The number of these persons who suffered a witnessed cardiac arrest whose initial monitored rhythm was ventricular tachycardia or ventricular fibrillation.
   (e) Authorize personnel and maintain a current listing of all EMT AED service providers authorized personnel and provide listing upon request to the LEMSA or the Authority.
   (f) An approved EMT AED service provider and their authorized personnel shall be recognized statewide.
   (g) Authorized personnel means EMT personnel trained to operate an AED and authorized by an approved EMT AED service provider.

EMERGENCY MEDICAL DISPATCH POLICY

I. PURPOSE

To delineate requirements and practices for emergency medical dispatch and dispatchers with the goal of protecting the health and welfare of citizens and maximizing the availability and use of resources.

II. DEFINITIONS

A. Emergency Medical Dispatch is the practice of utilizing trained and certified personnel to receive and manage requests for emergency medical response using an approved emergency medical dispatch protocol reference system, and the provision of pre-arrival instructions to callers at the scene of a medical emergency and to dispatch appropriate levels of response according to pre-established guidelines.

B. Emergency Medical Dispatchers are persons who have completed an approved EMD training course, are EMD certified and employed by a designated EMD provider agency.

III. POLICY

A. The Marin County Sheriff's Office, Communications Division is the sole EMD provider within Marin County.

B. All “911” calls for medical assistance will be handled by currently certified Emergency Medical Dispatchers. In the event that a request for medical assistance is received via a local agency ‘business line’, the caller will be transferred or conferenced in to the Marin County Sheriff’s Office Communications Center. If it is not possible to transfer the caller, the person handling the call will confirm address, phone number and chief complaint. The person will then notify Marin County Sheriff’s Office Communications Center and provide the information to an EMD dispatcher. The MCSO dispatcher will attempt to call back the reporting party and start appropriate resources to the scene.

C. Dispatchers will utilize authorized protocols and procedures using the approved emergency medical dispatch protocol reference system to determine the recommended response or pre-arrival instructions.

D. Policies and procedures related to program approval, certification and recertification processes, dispatch guidelines, and quality assurance issues will be developed and monitored by the EMS Agency’s Medical Director in conjunction with the Sheriff's Office Communications Division.

TRAUMA SYSTEM

I. PURPOSE

To state general policies or principles that apply to the operation of the Trauma System and to the Trauma System policies and procedures contained in this section.

II. RELATED POLICIES

A. Trauma System Policies #4600--4618
B. EMS Aircraft, #5100
C. Determination of Death- BLS 5, ATG 6
D. Traumatic Emergencies, BLS PR 5
E. Traumatic Injuries, T 1
F. Head Trauma, T2
G. Crush Injury, T3
H. EMS Communication, # 7000
I. Prehospital/Hospital Contact #7001
J. Do Not Resuscitate, GPC 07

III. DEFINITIONS

A. *Trauma System* refers to all aspects of care for injured patients set forth in the Marin County Trauma System Plan, approved by the EMS Authority and implemented through contractual arrangements or policies and procedures detailed in this manual.

IV. POLICY

A. The goal of the Trauma System Plan is to accomplish the following:

1. To provide an organized, systematic approach to trauma care that is expected to result in a reduction of preventable death and morbidity.
2. To enhance the delivery of trauma services to the residents of and visitors to Marin County.
3. To encourage, through the use of an inclusive design model, the participation of all prehospital care providers and acute care facilities within the county, according to their corporate mission, their resources, and their commitment to the provision of quality trauma care.
4. To promote physical and mental health and to prevent disease, injury and disability by providing equitable, high quality, appropriate and accessible health services to the community.

B. The Trauma System Plan will accomplish the above goals in the following manner:

1. By utilizing prehospital triage criteria, facility standards and transfer criteria that are based on national and state models.

2. By recognizing that a systemized approach to trauma care requires a multidisciplinary approach that acknowledges the importance of all those involved and engages them in the design and implementation of the system of care.
3. By adopting policies, guidelines, and criteria that will provide for the coordination of all resources and ensure accessibility to the closest, most appropriate medical facility for all injured patients, regardless of the nature or severity of their injury or their ability to pay for such services.
4. By establishing quality review processes and committees representing all involved disciplines to ensure a broad-based quality review of all trauma system activities.
5. By regularly reviewing operations within the system and making appropriate adjustments as often as needed.

COMMUNICATION SYSTEM

I. PURPOSE

To provide an overview of EMS communication.

II. RELATED POLICIES

A. Ambulance Supply and Equipment Requirements, #5002
B. ALS Nontransport Supply and Equipment Requirements, #5005
C. EMS Aircraft, #5100
D. Prehospital/Hospital Contact, #7001
E. Communication Failure, #7002
F. Radio Communications, #7003
G. Destination Guidelines, GPC 04

III. DEFINITIONS

A. *Physician Consult* – contact made for the purpose of receiving treatment guidance or advice.
B. *Report Only* – contact made for the sole purpose of advising the receiving facility of the pending arrival of a patient and of that patient's condition in sufficient detail to allow a decision to be made regarding the need for trauma team activation.
C. *Early Notification* – a communication meant to provide an early alert to hospital staff that a specialty care patient is en route.

IV. POLICY

A. The use of the 9-1-1 universal emergency number is to be encouraged by all system participants for use in an emergency.
B. All system participants shall participate in efforts to educate the public on the appropriate use of the 9-1-1 system.
C. System participants are required to have, maintain, and utilize designated communications equipment as may be detailed in policy, contract, MOU, or other written agreement.
D. BLS and ALS Treatment Guidelines and the Trauma Triage Tool will specify requirements for field to hospital contact, indicating the need for hospital consultation or receiving hospital notification and the point at which that contact should occur.
E. If the patient is being transported out of Marin County, contact with the receiving hospital should be made in accordance with the destination county policies and procedures. In general, this would require contact via cell phone or via Marin County Sheriff's Office Communications Center to insure that the facility can accommodate the patient.

TRAINING OF TRAUMA SYSTEM PERSONNEL

I. PURPOSE

To define trauma-related training required for Trauma System personnel to assure a universal understanding of expectations within the Trauma System.

II. RELATED POLICIES

Paramedic Accreditation/Continuous Accreditation, #3300

III. POLICY

A. Trauma System Orientation is a required component of Provider Agency/Hospital orientation, and should include:

1. All prehospital personnel (EMT-1 and First Responders);
2. All pertinent hospital personnel (ED physicians, ED staff, ICU staff, etc.);
3. All Medical Dispatchers;
4. Content should include the following: Trauma-related scene management, utilization of resources, evaluation of trauma patients, determination of appropriate destination using the Trauma Triage and Destination Guideline policy (#4613), trauma resuscitation, trauma team response, and all other system policies and operational changes associated with the Trauma System Plan.

B. Trauma-related classes or certifications for nurses or physicians, as specified in the Trauma System Plan, are required and considered part of the contractual agreement for designation.

C. The responsibility for assuring training of all appropriate personnel is the responsibility of the employing agency.

D. Facilities and agencies contracted/designated to provide trauma services will provide training to employees and other trauma personnel as directed by the contractual agreement.

GENERAL SYSTEM OPERATIONS POLICY

I. PURPOSE

To define general system operational issues common to all providers within the system.

II. POLICY

A. Fire Department personnel will be dispatched as first response agencies on all levels of medical response.

B. The ALS unit of the zone provider will be dispatched according to EMD.

C. The first on-scene paramedic will assume responsibility for care of the patient(s) and may relinquish care to another paramedic with mutual agreement.

D. Following an appropriate examination, the paramedic may determine that ALS intervention is not indicated and release the patient to BLS level of care. ALS personnel will remain in attendance until BLS transport personnel assume direct care. If another D or E response occurs, patient may be left in the care of nontransport BLS/EMT personnel.

E. All persons requesting medical attention will be evaluated and treated according to Marin County BLS or ALS Treatment Guidelines. Following an appropriate examination, the paramedic may determine that ALS intervention is not indicated and request BLS transport (based on provider agency policies). ALS personnel will remain in attendance with the patient until BLS transport personnel assume the responsibility for patient care. If there is a Code 3 incident dispatched and the attending ALS unit is the nearest responder, the patient may be left with the non-transport BLS personnel.

F. All persons receiving ALS interventions will be transported to a receiving facility determined according to Marin County policy unless otherwise addressed by policy (for example, Trauma Triage and Destination Guidelines, Refusal of Care, Release at Scene, Determination of Death, Specialty Patient).

G. Transport units will proceed to the receiving hospital in the manner (Code 2 or 3) deemed appropriate by the attendant.

DESCRIPTION AND FUNCTION OF BASIC, ADVANCED LIFE SUPPORT, AND CRITICAL CARE TRANSPORT UNITS

I. PURPOSE

A. To define basic, advanced life support, and critical care transport units, their staffing and functions within the Marin County EMS system.

II. DEFINITIONS

A. **Emergency Medical Technician (EMT)** refers to an individual currently certified to the EMT level in the state of California

Paramedic -refers to an individual currently licensed as a paramedic in the state of California and accredited to practice in Marin County

B. **ALS indicated** refers to patients for whom ALS treatment is appropriate due to complaint and/or symptoms present.

III. MINIMUM STAFFING

A. **Basic Life Support (BLS)** units will be staffed by two EMTs and will be referred to as an "Ambulance" or "A" unit followed by a number indicating the agency.

B. **Advanced Life Support (ALS)** units will be staffed by a minimum of one EMT and one paramedic.

1. Fire department owned units will be referred to as “Medic” or “M” units followed by a number indicating the agency.
2. Privately owned units will be referred to as "Paramedic" or "P" units followed by a number indicating the agency.

C. **Critical Care transport** units will be staffed by a minimum of one EMT, one EMT or Paramedic**,** and an R.N. and will be referred to as a “CCT” unit followed by a number indicating the agency.

IV. POLICY STATEMENT

A. It is intended that all residents and visitors of Marin County have access to advanced life support services.

B. It is intended that this care be rendered by advanced life support units as defined in this policy.

V. PROVISION OF SERVICES

A. Pre-hospital ALS response

1. Will be provided by units having a primary zone provider contract or subcontract according to the Marin County EMS Plan
2. If the above unit(s) is unavailable for dispatch, an alternate ALS unit will be dispatched by the usual dispatching agency when provided for by contract/agreement with the primary zone provider.
3. If the primary zone provider and alternate provider are unavailable, the nearest ambulance will be dispatched by the usual dispatching agency and will function according to Marin County Policies and Procedures.

B. Situations involving units not under primary zone provider contract

1. If a unit not under primary zone provider contract witnesses an incident that results in a patient needing ALS intervention, that unit shall do the following:
   a) Immediately access zone provider medical dispatch
   b) Request EM/AO number and dispatch of contract provider
   c) If time to hospital is less than ETA of contract ALS unit, treat and transport.
   d) If time to hospital is greater than ETA of contract ALS unit, begin treatment, wait for contract provider.

2. If a unit is not staffed or equipped to provide the level of care needed by a patient, that unit shall do the following:
   a) Access zone provider medical dispatch
   b) Request EM/AO number and dispatch of contract provider
   c) If time to hospital is less than ETA of contract ALS unit, treat and transport.
   d) If time to hospital is greater than ETA of contract ALS unit, treat as able, wait for contract provider
   e) If incident is a scheduled transport, contact patient's physician.

3. Critical Care Transport units will be used to provide an enhanced level of care during transfers. They are not routinely utilized in the pre-hospital setting.
4. Transfers from one care facility to another are addressed in the "Interfacility Transfer GPC 05.

ALS FIRST RESPONDER

I. PURPOSE

To define the role and function of the ALS First Responder within the Marin County EMS system.

II. DEFINITION

A. The ALS First Responder is a licensed paramedic, accredited in Marin County and working for an ALS provider. This policy is applicable only when the paramedic is not staffing an ALS transport unit and is assigned to a first response vehicle.

B. First Response vehicle refers to a fire department vehicle dispatched by an official dispatching agency in response to a request for medical assistance.

III. ROLE

To augment the currently operating ALS system by initiating defined ALS skills prior to the arrival of the ALS transport unit.

IV. POLICY

A. The ALS First Responder will carry the ALS equipment as listed in Policy 5010 (ALS First Responder level).

B. The ALS First Responder will comply with all Marin County ALS Treatment Guidelines and all pertinent EMS policies and procedures. If ALS skills are initiated prior to arrival of the ALS transport unit, the name of the ALS First Responder will be documented on the PCR as defined in the Prehospital Patient Care Record policy #7006.

FIRELINE PERSONNEL

PURPOSE

To establish policy for EMTs and paramedics to function as fireline personnel when requested through the statewide Fire and Rescue Mutual Aid System to respond to and provide Basic Life Support (BLS) and Advanced Life Support (ALS) care on the fireline at wildland fires.

DEFINITION

Fireline Emergency Personnel – An EMT or Paramedic who meets all pre-requisites established by FIRESCOPE and is authorized by their department to provide treatment on the fireline.

POLICY

A. Under the authority of State regulations, EMTs or paramedics may render care during mutual aid operations as long as the following conditions are met:

1. They are in possession of a valid California Paramedic License or EMT certificate.
2. They are accredited by a local EMS agency
3. They are affiliated with a Marin provider approved by the local EMS Agency.
4. They may utilize the scope of practice for which s/he is trained and accredited according to the policies and procedures established by his/her accrediting local EMS agency.

B. When requested for an out of county assignment, personnel may utilize the scope of practice for which they are trained and accredited according to the policies and procedures established by the Marin EMS Agency.

C. This policy is not intended to replace existing EMS or circumvent the established response of EMS within any jurisdiction.

OPERATIONS

A. Marin County personnel are authorized to provide pre-hospital care within the scope of practice allowed by the State of California and the Marin EMS Agency.

B. Marin County personnel will be equipped with the items on the EMT or paramedic inventory list as well as any required firefighting equipment.

C. It is recognized that the Fireline personnel cannot carry the same amount of equipment and supplies as would normally be stocked on a BLS/ALS vehicle. The inventory is based on the anticipated needs while considering the size and weight of the equipment and supplies.

D. Marin County personnel shall comply with all Marin County EMS Agency policies, procedures when functioning as a fireline EMT or paramedic.

E. The personnel shall present their credentials (paramedic license or EMT certificate, accreditation card and department identification) to the Medical Unit Leader who will forward that information to the local EMS Agency having responsibility for the area being affected by the incident.

F. The Fireline personnel are expected to check in and obtain a briefing from the Logistics Section Chief, or the Medical Unit Leader if established at the Incident.

G. Documentation of patient care will be in accordance with Marin County EMS Policy 7006. Fireline personnel should utilize the Marin "Field Transfer Form" for all patients encountered at the incident. The original copy will be retained by the Fireline personnel employing agency, one copy will accompany the patient (if transported) and one copy will go to the Medical Unit Leader.

H. All Field Transfer Forms completed at the incident will be reviewed through the home agency CQI process.

I. Controlled substances shall be stored and handled in accordance with Marin EMS and local agency policies.

QUALIFICATIONS, CERTIFICATION AND TRAINING

Designation by a BLS or ALS Provider Agency as Fireline personnel must include verification that the Fireline personnel have completed the requirements outlined in the FIRESCOPE Position Manual for FEMT and FEMP.

RELATED POLICIES

Provider Equipment List, 5010

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
AIRWAY EQUIPMENT					
Airways:					
· Oropharyngeal (Sizes 0 – 6)	2 each	1 each	1 each	1 each	2 each
· Nasopharyngeal, soft rubber (sizes 14Fr., 18Fr., 22Fr., 26Fr., 28Fr., 30Fr., 32Fr., 34Fr., 36Fr.)	2 each	1 each	1 each	1 each	2 each
Atomizer for intranasal medication administration (MAD device)	0	0	1	1	3
Bite Stick	2	0	1	1	2
King Airway					
· Size 3	0	0	1	1	2
· Size 4	0	1	1	1	2
· Size 5	0	0	1	1	2
Continuous Positive Airway Pressure Device	0	0	(optional)	(optional)	1
Intubation Equipment					
· Laryngoscope handle (battery powered)	0	1	1	1	1
· Additional batteries	0	0	2	2	2
· Blades (curved 1 - 4)	0	1 x #4	1 each	1 each	1 each
· Blades (straight 0 – 4)	0	1 x #4	1 each	1 each	1 each
· Bulbs (extra or disposable)	0	0	1	1	1
· Magill forceps (adult and pediatric)	0	0	1	1 each	1 each
· Endotracheal tubes					
sizes 2.5-6.0 mm: cuffed and/or uncuffed	0	Size 6 = 1	1 each	1 each	2 each
sizes 6.0-8.0 mm: cuffed	0	Size 7.5 = 1	1 each	1 each	2 each
· Disposable stylets (adult and pediatric)	0	1	1	1 each	2 each
· End-Tidal CO2 Detectors					
Adult – Colormetric	0	1	1	1	2
Pediatric – Colormetric	0	0	1	1	2
OR					
Capnograph or digital (optional)	0	0	1	1	1
· Esophageal Detector Device (optional if Capnometer is utilized)	0	1	1	1	1
· Endotracheal Tube Introducer (ETTI)	0	1	1	1	2
· ET Tube Holder (adult and pediatric)	0	0	1	1 each	2 each
· Meconium Aspirator	0	0	1	1	1
Nebulizer					
· Hand-held OR Patient activated	0	0	1	1	2
· In-line nebulizer equipment with T-piece	0	0	1	1	2

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
Oxygen Equipment and Supplies					
· Fixed tank in vehicle with regulator; M-tank or H-tank	1	0	0	0	1
· Regulator	1	0	1	1	1
· Portable tank (minimum D tank)	1	0	1	1	2
· Adult face masks: transparent, non-rebreathing; Child/infant: simple or non-rebreathing	2 each	0	1 each	1 each	4 each 2,2
· Nasal cannulas (adult, child, infant)	4 each	0	1 each	1 each	4 each 2,2
· Portable Pulse Oximetry	Optional	optional	Optional	1	1
Pleural Decompression kit: ≥14g needle, ≥2 ¼ inches long; Heimlich valve; occlusive dressing;10 ml syringe	0	1	1	1	1
Resuscitation bag-valve-mask (BVM) Adult, pediatric, infant	1 each	1 adult	1 each	1 each	2,1,1
Suction Equipment and Supplies					
· Suction apparatus – battery powered	1	1 portable self contained unit	1 portable self contained unit	1 portable self contained	1
· Suction apparatus – portable	1	0	0	0	1 x 1 fixed
· Pharyngeal tonsil tip (rigid)	2	0	0	0	2
· Suction catheters: 6 Fr, 8 Fr, 10 Fr, 14 Fr, 16 Fr, 18 Fr	2 each	0	0	0	2 each
· Suction canister (spares)	2	0	0	0	2
· Suction tubing	2	0	0	0	2
DRESSING MATERIALS					
Bandages					
· Bulk non-sterile	1 box / pkg	0	0	0	1 box
· 4 x 4" sterile gauze pads	12	6	12	12	12
· 10 x 30" universal dressings	2	0	2	2	2
· ABD Pads	6	0	0	0	6
· 40" triangular bandage with safety pins	4	2	2	4	4
· Elastic bandage 3" (Ace)	2	2	2	2	2
· Occlusive dressing	4	2	2	4	4
· Roller bandages (2", 3", 4", or 6")	6	2	3	6	6
Band-Aids (Assorted)	1 box	0	1 box	1 box	1 box
Burn Sheets (sterile) or commercial burn kit	2	2	2	2	2
Cold Packs / Hot Packs	2 each	2 each	2 each	2 each	4 cold/4 hot
Tape (1" and 2")	2 each	1" = 2 rolls	1 each	1 each	2 each
Trauma shears	1	1	1	1	1

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
EQUIPMENT AND SUPPLIES					
Alcohol swabs	12	6	12	12	12
Bedpan OR Fracture Pan/Covered Urinal	2	0	0	0	1
Betadine swabs or solution	0	4	4	4	8
Blanket - disposable	2	2	1	1	2
Blood Pressure Cuffs (adult, large arm, thigh, pediatric, infant)	1 each	1 adult	1 x adult, thigh, pedi	1 x adult, thigh, pedi	1 each
Bulb Syringe	1	0	1	1	1
Drinking Water (one gallon)	1	0	0	0	1
Emesis basin/ disposable bag/ Covered waste container	2	0	1	1	2
EMS Field Manual Patient Care (8000) Series	1		1	1	1
Glucometer	0	1	1	1	1
Irrigation Equipment					
· Saline (sterile) 1000 ml	2	0	1	1	2
· Tubing for irrigation	2	0	1	1	2
Length based color-coded resuscitation tape (most current)	0	0	1	1	1
Lubricant, water soluable	4	0	4 packs	4 packs	4 packs
Monitor/defibrillator equipment					
· Cardiac monitor – (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child / adult. May be biphasic or monophasic (biphasic preferred)	0	0	12-lead optional (pacing	1	1
· ECG electrodes	0	0	0	1 box	1 box
· 12-lead ECG capability	0	0	0	1 set	1 set
· A.E.D.	1	1	1	0	0
OB Delivery					
· Separate and sterile kit includes: Towels, 4” x 4” dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves, and blanket	1	0	1	1	1
· Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1	0	1	1	1
· Appropriate heat source for ambulance compartment	1	0	0	0	1
Pen Light	1	1	1	1	1
Sharps container	1	1	1	1	2
Sheet, pillow case, blanket, towel	4 each	0	0	0	4 each
Pillow	2	0	0	0	2 or equivalent
Stethoscope	1	1	1	1	1
Thermometer	Optional	0	0	0	1
Triage tags	20	6	20	20	20
Biohazard bags (large and small)	4 each	2 small	2 each	2 each	4 each
PPE kit (gloves, gown, booties, face shield, cap)	2 per person	0	1per person	1 per person	2 per person
Disposable gloves S/M/L	Box	6 pair	Box	Box	Box

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
Face protection mask – N95 or P100	2 pp	0	1 pp	1 pp	2 pp
Stair chair or equivalent	1	0	0	0	optional
Scoop stretcher or breakaway flat	Optional	0	0	0	Optional
Road Flares or Equivalent (30 min)	6	0	0	0	6
Flashlight	1	0	0	0	1
Marin County Map	1	0	Optional	Optional	1
Vehicle Emergency Lights	Set	0	Optional	Optional	Set
MERA Radio	1	Optional	Optional	Optional	1
Company Radio	1	Optional	Optional	Optional	0
Spare Tire	1	0	Optional	Optional	1
Fire Extinguisher	1	0	Optional	Optional	1
IMMOBILIZATION and RESTRAINT DEVICES					
Cervical collars – adjustable Sizes to fit all patients over 1 yr old (adult/pedi)	4, 2	1	2, 1	2, 1	4, 2
Head immobilization device	4	0	2	2	4
Spinal immobilization (radiolucent) backboard	2	0	1	1	2
· Strap system, adult	2	0	1	1	2
· K.E.D. or equivalent	1	0	0	0	1
Splints (vacuum/cardboard/equivalent)					
· Short, medium, long	2 each	1 moldable	1 each	1 each	2 each
Traction splint, adult / pediatric	1 each	0	0	0	1 each
Quick release synthetic soft restraints (or padded leather)	1	0	0	0	1
IV EQUIPMENT / SYRINGES / NEEDLES					
Arm board (Short)	0	0	1	1	2
Catheters – 1" long 14g, 16g, 18g, 20g, 22g, 24g	0	2 each	2 each	2 each	4 each
Intraosseous Equipment – adult and pedi					
· IO needles and/or mechanical device	0	0	optional	optional	1
· Extra batteries if needed by model	0	0	0	0	1
Intravenous Solutions - 0.9% NL Saline					
· 100 cc bag	0	1000 cc total	1	1	2
· 1000 cc bag	0	0	2	2	6
Glucose Paste, 15 gm/ tube	1	1 tube	1 tube	1 tube	2 tubes
Pressure Infusion Bags	0	0	0	0	1
Saline Lock	0	0	2	2	4
Syringes					
· 1 cc TB with removable needle	0	2	2	2	4
· 3 cc with 25 g x 5/8/" needle	0	0	0	0	4
· 10 cc without needle	0	2	1	1	2
· filter needle	0	2	2	2	2
· 30 cc without needle	0	0	0	0	2

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
Extension set (saline lock)	0	0	2	2	4
Constriction band	0	2	2	2	2
Three way stop cock	0	0	1	1	2
Tubing – with adjustable flow					
· macro drip (10gtt/cc – 15gtt/cc- adjustable)	0	2	2 each	2 each	4 each
· micro drip (60 micro gtts/cc)	0	0	1	1	2
MEDICATIONS AND SOLUTIONS					
Activated Charcoal, 25 gms	0	0	1 bottle	1 bottle	2 bottles
Adenosine, 6 mg in 2 ml NS	0	0	18 mg	18 mg	36 mg
Albuterol Unit Dose	0	1 MDI w/Spacer	3	3	9
Amiodarone, 150 mg in 3 cc NS	0	3	3	3	6
ASA (chewable), 81 mg	0	1	1 bottle	1 bottle	1 bottle
Atropine, 1 mg in 10 ml	0	2	3	3	10
Calcium Chloride 10%, 1 gm in 10 ml	0	0	1	1	2
Dextrose 10%	0	0	1	1	2
Dextrose 25%	0	0	1	1	2
Dextrose 50%, 25 gms/50 ml	0	1	1	1	2
Diphenhydramine, 50 mg/1ml	0	4	2	2	4
Dopamine (pre-mix), 400 mg/ 250 ml	0	0	1	1	1
Duo-Dote (Nerve Gas Auto-injector)	See County policy				
Epinephrine 1:1000, 1 mg/1 ml (multidose)	0	4	1	1	2
Epinephrine 1:10,000, 1 mg/10 ml	0	4	3	3	9
Glucagon, 1 mg	0	1 mg	1 mg	1 mg	2 mg
Ipratroprium (Atrovent), Unit Dose	0	0	1	1	4
Lidocaine 2% (20mg/ml)	0	0	0	0	2
Midazolam, 2 mg/2 ml	0	3	optional	3	5
Midazolam, 5 mg/1 ml	0	0	optional	optional	optional
Morphine Sulfate, 10 mg/1 ml	0	6	optional	2	4
Naloxone (Narcan), 2 mg/ 5 ml	0	2	3	3	6
Nitroglycerine, 0.4mg /tablet or spray	0	1 container	1 container	1 container	1 container
Ondansetron (Zofran) 4mg PO tablet	0	6	4	4	8
Ondansetron (Zofran) 4mg/2ml	0	0	1	1	4
Sodium Bicarbonate, 50 mEq/ 50 ml	0	0	1	1	2

CRITICAL CARE TRANSPORT DRUG, SOLUTION, AND EQUIPMENT LIST

IN ADDITION TO ITEMS LISTED IN POLICY 5010 (ALS TRANSPORT), units staffed to perform critical care transports must include the following:

1. A minimum of two personnel, appropriate to individual patient care needs (refer to Interfacility Transfer policy # 8107) must be available to attend the patient.

2. All transports must occur in accordance with federal and local laws, including the Consolidated Omnibus Budget Reconciliation Act (COBRA) and its amendments (OBRA).

3. Communication equipment must be present that will allow contact between the transporting vehicle and the transferring and receiving hospitals.

4. The following equipment is recommended by the Guidelines Committee of the American College of Critical Care Medicine; the Society of Critical Care Medicine and American Association of Critical Care Nurses Transfer Guidelines Task Force and is hereby required for use in Marin County (equipment included in the BLS or ALS equipment lists is not re-listed here).

Airway equipment 50 ml flex tube with patient adapter Infant med. concentration mask with tubing Booted hemostat Heimlich valve Scalpel with blade for cricothyrotomy Positive end-expiratory pressure valve Pressure gauge with airway adapter tubing and test lung
Armboards
Arterial line tubing and monitoring equipment
Butterfly needles, pediatric sizes
Irrigating syringes
Infant, pediatric electrodes
Infusion pumps
IV Administration sets 3-way stopcocks with extensions Pedi-drip sets Blood tubing
IV catheters up to 24 guage
IV solutions 1000 Lactated Ringers solution 250 cc D5/W
Kelly clamp

Pulse oximeter
Salem sumps (asst. sizes)
If appropriate for patient external pacer neonatal isolette transport ventilator

5. The following medications are recommended by the Guidelines Committee of the American College of Critical Care Medicine; the Society of Critical Care Medicine and American Association of Critical Care Nurses Transfer Guidelines Task Force (medications included in the ALS medication list are not re-listed here).

Dexamethasone		Nitroglycerin for IV use
Digoxin		Nitroprusside
Heparin		Phenytoin
Lopressor		Procainamide
Mannitol		Solumedrol
Magnesium		Verapamil
Midazolam		

6. Equipment and medications shall be additionally tailored to meet all anticipated needs of the individual patient being transported.

*On a case by case basis, upon written request from a provider medical director, an exception may be made to a requirement, by the EMS Agency Medical Director.

Critical Care Transport Drug, Solution and Equipment List

The following items are required in addition to the BLS/ALS equipment. On a case by case basis, upon written request from a provider medical director, an exception may be made to a requirement by the EMS Agency Medical Director.

Description of Item	On Unit
Airway equipment :	
50 ml flex tube with patient adapter	
Infant med. Concentration mask with tubing	
Booted hemostat	
Heimlich valve	
Scalpel with blade for cricothyrotomy	
Positive end-expiratory pressure valve (PEEP)	
Pressure gauge with airway adapter tubing and test lung	
IV Administration sets:	
3-way stopcocks with extensions	
Pedi-drip sets	
Blood tubing	
IV catheters up to 24 gauge	
Butterfly needles or IV Catheters, pediatric sizes	
Irrigating syringes	
Infusion pumps	
Arterial line tubing and monitoring equipment	
IV Solutions:	
1000 Lactated Ringers solution	
250 cc D5/W	
Kelly clamp	
Equipment:	
Arm boards	
Pulse Oximiter	
Salem sump nasogastric tubes, assorted sizes	
External pacing	
Infant, pediatric electrodes	
Transport ventilator	
Neonatal isolette	
Medications:	
Dexamethasone	
Diazepam	
Digoxin	
Heparin	
Lopressor	
Mannitol	
Magnesium	
Nitroglycerin for IV use	
Nitroprusside	
Phenytoin	
Procainamide	
Solumedrol	
Verapamil	

EMS AIRCRAFT

I. PURPOSE

To provide policy for integrating dispatch and utilization of aircraft into the Marin County EMS system as a specialized resource for prehospital response, transport, and care of patients.

II. RELATED POLICIES

A. Emergency Medical Dispatch Policy, #4200
B. Trauma Triage and Destination Guideline Policy, #4613
C. Prehospital/Hospital Contact Policy, # 7001

III. PHILOSOPHY

Aircraft utilization provides a valuable adjunct to the Marin County EMS System by minimizing the time to definitive care in prescribed circumstances. The time to definitive care for critically ill or injured patients can be a critical factor in optimizing their outcome.

IV. AUTHORITY

California Administrative Code, Title 22, Divisions 2.5 and 9.

V. APPLICABILITY

All aircraft providing prehospital patient transport within the Marin County EMS System must be authorized by the EMS agency in their county of origin or by the EMS Authority or by a United States Government agency.

VI. POLICY

A. The patient's condition, available ground resources, incident location in relation to receiving facility and call circumstances will be evaluated by caregivers in the field to determine if air transport is appropriate.

B. The type of aircraft to be requested will be determined by the Incident Commander and/or the County Communications Center based on provider availability, response time criteria and nature of the service needed. See Appendix A.

VII. PROCEDURE FOR AIRCRAFT DISPATCH

A. Aircraft will be dispatched simultaneously with ground units for specific circumstances as follows:
   1. Area of the call is inaccessible to ground unit(s) or ground access is compromised;
   2. Air assistance may be needed with rescue activities; or

3. Ground transport time to the hospital is > 30 minutes and the applicable Emergency Medical Dispatch Protocol (policy #4200, Appendix A) recommends simultaneous dispatch.
4. Level III Trauma Center is on trauma diversion status.

B. Aircraft Dispatch may also occur in the following manner:
1. Upon request of the responding unit while en route to the scene.
2. Upon request of onscene personnel following patient assessment.

VIII. PROCEDURE FOR AIRCRAFT USE

A. For trauma patients:
1. The patient meets Trauma Triage Tool anatomic or physiologic criteria and the time closest facility is the Level II Trauma Center; or
2. Ground transport or delay to definitive care could worsen the patient's injury.

B. For medical patients: Ground transport or delay to definitive care could worsen the patient's illness.

C. Procedural Considerations
1. EMS aircraft should not transport patients in continued cardiac arrest. Aircraft personnel discretion to transport patients receiving CPR may be warranted in certain situations (refractory VF, unsafe scene conditions, hypothermia, etc.).
2. Marin County Communications Center will notify law enforcement and fire agencies with jurisdiction over the landing zone.
3. The EMS aircraft may be canceled by the onscene Incident Commander after consultation with the senior medical person on-scene.

D. Medical control
1. Medical control is vested in the most medically qualified health care professional at the scene (ref. Chapter 5 1798.6).
2. Treatment decisions will be made according to medical control policies and procedures governing the provider agency having responsibility for care.
3. Destinations may be requested by Marin County personnel related to the level of care desired (i.e., pediatric trauma center, burn center, Level II Trauma Center, etc.), rather than the specific hospital.

C. GENERAL AND RELATED PROCEDURES

1. Marin County personnel may accompany a patient in an EMS aircraft during transport if all of the following conditions are met:

a. Personnel have been providing care for the patient prior to arrival of the aircraft;
b. Aircraft pilot and crew request that personnel accompany the patient during transport to assist with care

2. Patient care records will be kept as follows:

a) Marin County personnel will complete the Marin County Patient Care Record as per policy/procedure and fax it to the receiving hospital.

b) EMS aircraft crew will complete a patient care record as required by policy/procedure within their county of origin.

3. The following times, when available, will be relayed to and recorded by Marin County Communications Center:

a) ETA at time of original dispatch request
b) When airborne, en route to scene
c) Arrival at scene
d) Departure from scene
e) Destination hospital
f) Arrival at receiving hospital

4. As part of the Quality Improvement Program, a peer review committee will review all aircraft dispatches.

5. Aircraft may be utilized by acute care hospitals for interfacility transfers.

a) Hospitals will contact EMS aircraft providers directly.
b) The hospital requesting an EMS aircraft will notify the Marin County Communications Center of aircraft activity so fire and law enforcement agencies can be notified of the probable aircraft landing site.
c) Hospitals shall notify the Marin County EMS Office of interfacility transfers. This may be done following each transfer or on a yearly basis.

APPENDIX A

PROVIDER LIST and CLASSIFICATION DEFINITIONS

Provider Name	Classification	Function	Staffing	Location
Stanford University Hospital Helicopter **(LIFEFLIGHT)**	Air Ambulance	Medical	Pilot Flight Nurses (2)	Palo Alto
California Shock/Trauma Air Rescue **(CALSTAR)**	Air Ambulance	Medical	Pilot Critical Care Nurses (2)	Concord
Redwood Empire Air care Helicopter **(REACH)**	Air Ambulance	Medical	Pilot Critical Care Nurse/EMT-P	Santa Rosa and Concord
Sonoma County Sheriff's Department helicopter **(Henry 1)**	ALS Rescue	Law, Medical, Long-line rescue	Pilot Paramedic EMT-I	Santa Rosa
California Highway Patrol Helicopter **(H-30)**	ALS Rescue	Law, Medical	Pilot Paramedic	Napa
U.S. Coast Guard Helicopter	Auxiliary	Water rescue, Long-line rescue	2 Pilots Crew includes 1 EMT-I rescue swimmer	San Francisco Airport

CLASSIFICATION DEFINITIONS

- "Air Ambulance" means any aircraft specifically constructed, modified, or equipped and used for the primary purpose of responding to emergency calls and transporting critically ill or injured patients whose medical flight crew has at a minimum two attendants certified or licensed in advanced life support.
- "Rescue Craft" means an aircraft whose usual function is not prehospital emergency medical transport but which may be utilized for prehospital emergency patient transport when use of an air or ground ambulance is inappropriate or unavailable.
- "ALS Rescue Aircraft" means a rescue aircraft that is equipped to provide ALS service, staffed with a minimum of one ALS medical flight crew member.
- "Air Rescue Service" means an air service used for emergencies including search and rescue.
- "BLS Rescue Service" means a rescue aircraft whose medical crew has, at a minimum, one attendant certified as an EMT-1.
- "Auxiliary Aircraft" is a rescue aircraft which does not have a medical flight crew or whose flight crew does not meet the minimum requirements of a BLS Rescue Aircraft.

PREHOSPITAL/HOSPITAL CONTACT

I. PURPOSE

To provide guidelines for contact between prehospital care personnel and receiving facilties

II. RELATED POLICIES

A. Trauma Triage and Destination Guidelines, #4613
B. Communication Failure, #7002
C. EMS Communication System, #7004
D. BLS Treatment Guidelines
E. Multiple Patient Management Plan
F. STEMI C9
G. CVA/Stroke N4
H. Sepsis M6

III. DEFINITIONS

A. Report Only - a notification to the receiving facility that a patient is enroute
B. Early Notification – a communication meant to provide an early alert to hospital staff that a specialty care patient is enroute. Early Notifications include:
   1. Early Trauma Notification
   2. Early Stroke Notification
   3. Early STEMI Notification
   4. Early Sepsis Notification

C. Physician Consult - a consultative discussion between field personnel and an ED physician.

IV. POLICY

A. Report Only

   1. Shall occur anytime a prehospital unit transports a patient.
   2. May be performed by any prehospital personnel.
   3. Reports shall include the following:

      a. Transport unit identification
      b. Level of care being provided (ALS or BLS)
      c. Estimated time of arrival to receiving facility
      d. Level of transport (code 2 or 3)
      e. General category of patient (type of illness or injury) or treatment guideline being used for an ALS patient.
      f. Condition of patient (stable, improving or worsening)

B. Early Notification (Trauma/Stroke/STEMI/Sepsis)

1. Shall be performed at the earliest possible time, prior to leaving the scene when feasible.
2. Is required when patient meets criteria.
3. May be performed by paramedic, Incident Commander, or other delegated personnel
4. Early Notification shall include the following:
   a. Age/Gender
   b. Incident type (Trauma, Stroke, STEMI, Sepsis)
   c. Injury and/or complaint (Trauma); last known normal (Stroke), presence or absence of chest pain and 12-lead findings (STEMI)
   d. Trauma Triage Tool Category:
      1. Anatomic or Physiologic = “Full Trauma”
      2. Mechanism or Additional Factors = “Limited Trauma”
   e. ETA
5. As soon as practical after the Early Notification has been given, a more thorough report should be provided to the intended receiving facility, including vital signs.

C. Physician Consult

1. Shall occur when specified in an ALS or BLS Treatment Guidelines.
2. Trauma Center consultation is recommended for questions about the destinations for injured patients. Consult shall be made with Marin General Hospital.
3. Physician Consult communication shall include the following:
   a. The need for physician consultation
   b. Patient assessment information as appropriate.
   c. Policy or procedure being followed which mandates physician consult or order

D. If a paramedic attempts contact for any of the reasons above and is unable to contact the intended receiving facility, personnel may contact another in-county hospital. If no facility can be contacted**,** the following should occur:

1. Treatment should be administered according to the appropriate ALS or BLS treatment guideline.
2. Medications or treatments listed as “physician consult required**”** may not be administered or performed
3. Documentation of the communications failure should be completed as detailed in policy #7002, Communication Failure.

E. In the event of a declared multiple patient incident, paramedics may operate according to the MPMP omitting contact or hospital consultation.

PATIENT CARE RECORD (PCR)

I. PURPOSE

To establish requirements for completion, reporting, and submission of Marin County approved Patient Care Records.

II. RELATED POLICIES

ALS to BLS Transfer of Care, ATG 4
Against Medical Advise (AMA), GPC 2
Release at Scene (RAS), GPC 3

III. DEFINITIONS

A. Patient – someone who meets any one of the following criteria:
   1. Has a chief complaint or has made a request for medical assistance
   2. Has obvious symptoms or signs of injury or illness
   3. Has been involved in an event when mechanism of injury would cause the responder to reasonably believe that an injury may be present
   4. Appears to be disoriented or to have impaired psychiatric function
   5. Has evidence of suicidal intent
   6. Is dead

B. Emergency Medical (EM)/Authorization Order (AO) – a number assigned by a Marin County Communication's Center to identify each 9-1-1 call dispatched for medical assistance.

C. Electronic Patient Care Record (ePCR) - the permanent record of prehospital patient evaluation, care, and treatment.

D. Field Transfer Form (FTF) – a temporary, paper record of patient care

E. Triage Tag – a paper record for multi-casualty incidents involving 6 or more patients

IV. POLICY

A. An ePCR shall be completed for every call for which an EM/AO is issued except for those incidents which were cancelled either enroute or after being on scene no more than five minutes.

B. For all patients transported, the ePCR will be completed by the personnel assigned to the transport unit.

C. For non-transported patients (e.g. AMA, RAS, Dead on Scene), the ePCR will be completed by the paramedic or EMT most involved in patient care and responsible for the patient's disposition.

D. For calls where there is no medical merit, the ePCR will be completed according to provider agency's policy.

E. The ePCR is the permanent PCR and will be filled out in a clear, concise, accurate, and complete manner and will include all care provided in the prehospital setting. When possible, it shall include all 12 lead ECGs and any ECG other than normal sinus rhythm.

F. The completed PCR includes all care rendered by the transporting providers as well as any care given prior to arrival of the transporting unit by bystanders and/or first responders. Documentation of care provided by first responders (of a different agency than the transport unit) may be required by their department policy.

G. When a patient is transported to a receiving facility, one copy of the PCR shall be left with the receiving facility upon transfer of care.

1. In the event that personnel are unable to leave a completed PCR at the facility, a FTF will be completed in full and left in lieu of the ePCR. However, ALL critical patients (e.g., cardiac arrest, Early Notification patients) MUST have a completed PCR left at the hospital upon transfer of care. If a FTF was utilized, an ePCR will be completed and received by the facility as soon as possible and no later than 3 hours of transfer of care.

H. For ground transportations to an out-of-county facility, a FTF will be given to the receiving provider and a completed ePCR shall be produced and sent to that facility within 3 hours of transfer of care.

I. For air ambulance transportations, a FTF will be given to the air ambulance personnel, and an ePCR will be created within 3 hours of transfer of care and sent to the receiving facility via ePCR program or FAX.

J. Personnel assigned outside of the county to provide medical-mutual aid (e.g. fire-line EMT/Paramedic), shall complete a FTF for each patient contact. The FTF will be created on site and a copy submitted to the provider agency as soon as possible after returning to the county.

K. Willful omission, misuse, tampering, or falsification of documentation of patient care records is cause for formal investigative action under Section 1978.200 of the California Health and Safety Code.

V. GENERAL INSTRUCTIONS

A. The patient care record is part of the patient's permanent medical record and is used for, but not limited to, the following purposes:
   1. Transfer of information to other healthcare providers
   2. Medical legal documentation
   3. Billing for services
   4. Development of aggregate data reports for Continuous Quality Improvement (CQI), including specific quality indicators and identification of educational needs
   5. EMS Agency case investigation

B. Reference to a Marin County EMS Notification Form or similar record should not be included on the patient care record.

C. If ALS to BLS transfer of care is determined to be appropriate, documentation of assessments and all care rendered must be completed by both the ALS and the BLS units according to policy ATG 4.

D. Provider agencies are responsible for training their employees in the initiation, completion, distribution of patient care records, HIPAA and any accompanying forms based on the EMS Agency's currently approved training curriculum.

APPROVED MEDICAL ABBREVIATIONS

PURPOSE

To identify the abbreviations and symbols which an Emergency Medical Technician (EMT) or Paramedic may use for documentation purposes in Marin County.

ABBREVIATIONS

Abbreviation / Symbol	Description
♀	female
♂	male
⊕	positive
⊖	negative
°C	degrees Celsius
°F	degrees Fahrenheit
Ⓛ	left
Ⓡ	right
1°	primary
2°	secondary
<	less than
>	greater than
@	at
Δ	change
↓	decrease(d)
↑	increase(d)
≈	approximately
x	times
ā	before
A/O	alert and oriented
A/S	at scene / arrived at scene
abd	abdomen
AC	antecubical
AFIB	atrial fibrillation
AICD	Automatic Internal Cardiac Defibrillator
AKA	above the knee amputation
ALOC	altered level of consciousness
ALS	Advanced Life Support
AM	morning
AMA	against medical advice
AMI	acute myocardial infarction
AOS	arrived on scene
approx	approximately
ASA	acetylsalicylic acid, aspirin
ASAP	as soon as possible
ATF	arrived to find
B/C	because
BBB	bundle branch block
BG	blood glucose
BGL	blood glucose level

Bilat	bilateral
BKA	below the knee amputation
BLS	Basic Life Support
BM	bowel movement
BP	blood pressure
bpm	beats per minute
BS	blood sugar
BSA	burn surface area
BVM	bag valve mask
c̄	with
C/C	chief complaint
C/O	complain of
C2	code two
C3	code three
CA	cancer
CAD	coronary artery disease
CHF	congestive heart failure
CHP	California Highway Patrol
CMPA	Central Marin Police Authority
CO	complain of / carbon monoxide
COPD	chronic obstructive pulmonary disease
CP	chest pain
CPAP	continuous positive airway pressure
CPR	cardio pulmonary resuscitation
CPSS	Cincinnati prehospital stroke scale
CSM	circulation, sensation, movement
CVA	cerebral vascular accident
DDM	designated decision maker
DKA	diabetic ketoacidosis
DM	Diabetes mellitus
DNR	do not resuscitate
DVT	deep vein thrombosis
dx	diagnosis
ECG	electrocardiogram
ED	emergency department
EKG	electrocardiogram
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
EMT-P	Paramedic
ENRT	enroute
ER	Emergency Room
ESO	electronic PCR software
ET	endotracheal
ETA	estimated time of arrival
$ETCO_2$	end-tidal carbon dioxide
ETI	endotracheal intubation
ETOH	alcohol
ETT	endotracheal tube
F	female
FTF	Field transfer form

fx	fracture
G	Gram
G	gauge
GCS	Glasgow Coma Scale
GI	gastrointestinal
gm	gram
GSW	gunshot wound
gtt(s)	drop(s)
GU	genitourinary
h	hour
H/N/B	head, neck, back
H_2O	water
HA	headache
HHN	hand-held nebulizer
HOB	Head of bed
HR	heart rate
HTN	hypertension
Hwy	highway
hx	history
ICD	Internal Cardiac Defibrillator
ICU	intensive care unit
IM	intramuscular
IN	intranasal
IO	intraosseous
IV	intravenous
IVP	intravenous push
JVD	jugular venous distension
KED	Kendrick Extrication Device
kg	kilograms
KSR	Kaiser San Rafael
KTL	Kaiser Terra Linda
L	liter
L	left
lac	laceration
LL	left lateral
LLQ	left lower quadrant
LOC	loss of consciousness / level of consciousness
LS	lung sounds
Lt	left
LUQ	left upper quadrant
m	min
M	male
m/o	Month old
mA	Milliamp
MAD	mucosal atomization device
MCSO	Marin County Sheriff's Office (deputy)
MD	medical doctor
mEq	milliequilvalent
mg	milligram
mg/Dl	milligrams per deciliter
MGH	Marin General Hospital

MI	myocardial infraction
MICU	mobile intensive care unit
MIN	minimum / minute
ml	milliliter
MOI	mechanism of injury
MPH	miles per hour
MS	morphine sulfate / multiple sclerosis
MSo4	morphine
MVA	motor vehicle accident
MVC	motor vehicle crash
MVPD	Mill Valley Police Department
N&V or N/V or NV	nausea and vomiting
NaCL	Sodium Chloride
NAD	no apparent distress
NC	nasal cannula
NCH	Novato Community Hospital
NEG	negative
Neuro	neurological
NITRO	nitroglycerin
NKDA	no known drug allergies
NPA	nasopharyngeal airway
NPD	Novato Police Departmet
NRB	non-rebreather mask
NS	normal saline
NSR	normal sinus rhythm
NTG	nitroglycerine
NVD	nausea, vomiting, diarrhea
O_2	oxygen
O_2 sat	peripheral capillary oxygen saturation
OD	overdose
ODT	orally disintegrating tablet
OPA	oropharyngeal airway
$\overline{p}$	after
P/W/D	pink warm dry
PAC	premature atrial contraction
PALP	palpitation
PARA	parity, e.g. gravid 2, para 1 means the patient has been pregnant twice and given birth once; also written G2P1
PCN	penicillin
PE	pulmonary edema / pedal edema / patient exam
PEA	pulseless electrical activity
PERL	pupils equal reactive to light
PERRL	Pupils equal, round, reactive to light
PJC	premature junctional contraction
PM	evening
PMD	primary/personal/private medical doctor
PO	by mouth
POC	position of comfort
POLST	Physician Orders for Life Sustaining Treatment
PRN	as needed
PSYCH	psychiatric

PT	patient
PTA	prior to arrival
PTS	patients
PTSD	post traumatic stress disorder
Pulse Ox	peripheral capillary oxygen saturation
PVC	premature ventricular contraction
PVH	Petaluma Valley Hospital
PVT	private
PX	pain
q	every
R	right
RA	room air
RAS	released at scene
RLQ	right lower quadrant
RMC	routine medical care
RN	registered nurse
ROM	range of motion
ROSC	return of spontaneous circulation
RP	reporting party
RPM	respirations per minute
RR	respiratory rate
Rt	right
Rx	prescription
$\bar{s}$	without
S. Brady	sinus brady
S. Tach	sinus tachycardia
S/NT/ND	Soft, non-tender, no distention
S/P	status post
S/S	signs and symptoms
SBP	systolic blood pressure
SC, SQ	subcutaneous
SL	sublingual
SM	small
SMR	spinal motion restriction
SNF	skilled nursing facility
SOB	shortness of breath
SPO_2	peripheral capillary oxygen saturation
SRPD	San Rafael PD
STEMI	ST Segment Elevation Myocardial Infarction
SVT	supraventricular tachycardia
TACH	tachycardia
TB	tuberculosis
TEMP	temperature
TIA	transient ischemic attack
TKO	to keep open
TOC	transfer of care
TRANS	transport / transfer
TTT	Trauma Triage Tool
TX	treatment
UCSF	University California San Francisco
UOA	upon our arrival

USGC	United States Coast Guard
UTI	urinary tract infection
UTL	unable to locate
UTO	unable to obtain
V	victim
V/S or VS	vital sign
VA	Veteran's Administration
VF	ventricular fibrillation
VT	ventricular tachycardia
W/	with
w/c	wheelchair
w/o	wide open
WBC	white blood count
WNL	within normal limits
Y/O or YO	Year(s) old

EXTERNAL CARDIAC PACING PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Symptomatic bradycardia which may include: HR < 50 with decreasing perfusion, chest pain, shortness of breath, decreased LOC, pulmonary congestion or congestive heart failure

☎ PHYSICIAN CONSULT

- Concomitant administration of **Morphine Sulfate** and **Midazolam**

CRITICAL INFORMATION

- If patient is unstable, do not delay pacing for IV access

EQUIPMENT

- Cardiac monitor/ defibrillator/ external pacemaker
- Pacing capable electrode pads

PROCEDURE

- ALS RMC
- Administer **NS** 250 ml bolus IV/IO
- If patient is conscious, administer **Midazolam** 1 mg slow IV/IO. May repeat 1 mg every 3 minutes to desired degree of sedation. Maximum dose = 0.05 mg/kg.
- ☎**Morphine Sulfate** IV/IO/IM for pain management as needed; maximum dose of 5 mg.
- If tolerated, position patient supine, applying pacing electrodes to bare chest according to manufacturers recommendations (anterior/ posterior or sternal/ apex).
- Confirm and record ECG.
- Set pacing rate at 80, turn on pacing module, and confirm pacer activity on monitor.
- Increase output control until capture occurs or maximum output is reached.
- Once capture is confirmed, increase output by 10%
- Confirm pulses with paced rhythm.
- Monitor vital signs and need for further sedatives or pain control.

DOCUMENTATION

- MiliAmps needed for capture
- Time pacing started/ discontinued

RELATED POLICIES/ PROCEDURES

- Bradydysrhythmia C 4
- Adult Pain Management ATG 2

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients > 8 years of age in severe respiratory distress and signs of CHF, COPD, and asthma.
- Near drowning

CONTRAINDICATION

- Absolute
  - Age < 8
  - Respiratory or Cardiac Arrest
  - Agonal respirations
  - Severely depressed level of consciousness
  - Signs and symptoms of pneumothorax
  - Inability to maintain airway patency
  - Major trauma (especially head trauma with signs of ICP or significant chest trauma)
  - Facial anomalies or trauma (e.g., burns, fractures)
  - Vomiting
- Relative Contraindications
  - Systolic BP <100
  - History of Pulmonary Fibrosis or history of barotrauma
  - Decreased LOC
  - Claustrophobia or inability to tolerate mask (after 1-2 minutes trial)

EQUIPMENT

- CPAP equipment
- In-line nebulizer

PROCEDURE

- ALS RMC
- Place patient in a seated position with legs dependant
- Follow manufacturer directions for CPAP device set up
- Explain device to patient
- Apply device to patient; set flow rate in excess of the patients inspiratory flow rate & monitor every 5 minutes including continuous SAO2
- If albuterol and/or ipratropium appropriate, may administer with CPAP in-line nebulizer.
- Reassess V/S q 5 minutes after CPAP applied
- Increase oxygen percentage if patient does not demonstrate improvement after 5 minutes of application; repeat as needed to obtain improvement
- Remove the CPAP device and assist ventilations with BVM and/or intubation if patient condition worsens

SPECIAL CONSIDERATION

- Consider using sedation to alleviate possible anxiety associated with the CPAP device

RELATED POLICIES/ PROCEDURES

- Adult Sedation ATG 3
- Bronchospasm/Asthma/COPD R4

ADULT PAIN MANAGEMENT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient exhibits or is determined to have measurable or anticipated pain or discomfort

☎ PHYSICIAN CONSULT

- Patients with SBP < 100
- Patients with head trauma; multi-system trauma that includes abdominal/thoracic trauma; decreased respirations; ALOC (GCS < 15); or women in labor
- > 20 mg **Morphine Sulfate** is needed for pain management
- Concomitant administration of **Morphine Sulfate** and **Midazolam**

CRITICAL INFORMATION

- Origin of pain (examples: isolated extremity trauma, chronic medical condition, burns, abdominal pain, multi-system trauma)
- Mechanism of injury
- Approximate time of onset
- Complaints or obvious signs of discomfort
- Use Visual Analog Scale (0-10) or Wong/Baker Faces Pain Rating Scale if non-English speaking adult. Express results as a fraction (i.e. 2/10 or 7/10)
- Vital signs
- Presence of special infusion apparatus for narcotic or oncology agents may help to determine dosing

TREATMENT

- **Morphine Sulfate** IV/IO: 5 mg slowly; MR q 5 minutes, max. dose 20 mg.
  - If unable to establish IV/IO, administer Morphine Sulfate IM 5-10 mg; MR in 20 minutes, max. dose 20 mg
- ☎If significant pain persists after Morphine Sulfate 10 mg IV/IO, may consider **Midazolam** 1mg IV/IO with physician consult; MR in 3 minutes to maximum dose 2 mg.
- If patient unable to take Morphine Sulfate, refer to Sedation Policy, ATG3.
- Maintain O2 saturation ≥ 94%

DOCUMENTATION- ESSENTIAL ELEMENTS

- Initial and post treatment pain score, expressed in a measurable form (i.e. 7/10)
- Interventions used for pain management (i.e. ice pack, splint, Morphine Sulfate, Midazolam)
- Reassessment after interventions
- Initial and post treatment vital signs: BP, HR, RR, O2 Saturation, ETCO2 (and GCS in patients with ALOC)
- Physician consult if required

ADULT SEDATION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Agitation / combativeness interfering with critical ALS interventions and airway control or that endangers patient or caregiver
- Cardioversion / Cardiac Pacing
- Patients unable to tolerate Morphine Sulfate for pain management

☎ PHYSICIAN CONSULT

- Head injury (airway is stable)
- Multiple system trauma (airway is stable)
- Concomitant administration of **Morphine Sulfate** and **Midazolam**

CRITICAL INFORMATION

- Relative contraindications:
  - Nausea / vomiting
  - ALOC
  - Hypotension (SBP < 100)
  - Suspected drug / alcohol intoxication

TREATMENT

- ALS RMC, including ETCO2
- Cardioversion / cardiac pacing-
  - If patient is conscious, administer **Midazolam** 1 mg slow IV/IO. May repeat 1 mg every 3 minutes to desired degree of sedation. Maximum dose = 0.05 mg/kg.
  - ☎**Morphine Sulfate** IV/IO/IM for pain management as needed; maximum dose of 5 mg.
- Agitation / combativeness- **Midazolam**
  - IV/IO: 1 mg slowly; MR q 3 minutes to maximum dose 0.05 mg/kg.
  - IN: 5 mg (2.5 mg in each nostril)
  - IM: 0.1 mg/kg; MR x 1 in 10 minutes
- Patients receiving sedation for airway management who have long transport times may receive sedation maintenance doses of **Midazolam** 1 mg IV/IO every 15 minutes

Midazolam for Sedation Weight Based Chart - MAXIMUM DOSE for IV/IO/IM only

Kg	Lb	Dose (0.05 mg/kg)
40	88	2 mg
45	99	2.25 mg
50	110	2.5 mg
55	121	2.75 mg
60	132	3 mg
65	143	3.25 mg
70	154	3.5 mg
75	165	3.75 mg
80	176	4 mg
85	187	4.25 mg
90	198	4.5 mg
95	209	4.75 mg
>100	>220	5 mg

SPECIAL CONSIDERATION

- Sedation for airway management does not mandate intubation, but may require airway/ventilation support
- Patients receiving **Midazolam** may experience hypotension

RELATED POLICIES

- Patient Restraint GPC11
- Continuous Positive Airway Pressure (CPAP) Procedure ALS PR 13
- External Cardiac Pacing Procedure ALS PR 11

ADULT MEDICATIONS
AUTHORIZED/ STANDARD DOSE

DRUG	CONCENTRATION	STANDARD DOSE
Activated Charcoal	**25 gm/ bottle or 50 gm/ bottle**	**1 gm/ kg PO (not to exceed 50 gm)**
Adenosine (Adenocard)	**6 mg/ 2 ml**	**6 mg 1st dose, 12 mg 2nd dose (rapid IV/IO push) followed by 20 ml saline flush after each dose**
Albuterol	**2.5 mg/ 3ml NS**	**5 mg/ 6 ml NS; (MDI: Fireline only)**
Amiodarone	**150 mg/ 3ml**	***VFib or Pulseless VTach:*** **300 mg IV/ IO push followed by one 150MG push in 3-5 min.** ***Perfusing/Recurrent VTach*****–150 mg IV/ IO over 10 min. (15 mg/ min); MR q 10 min. as needed**
Aspirin (chewable)	**Variable**	**162-325 mg PO**
Atropine	**1 mg/ 10 ml**	***Bradycardia:*** **0.5 mg IV/ IO, MR q 3-5 min. to max of 3 mg.** ***Organophosphate Poisoning:*** **2.0 mg slowly IV/ IO; MR 2-5 min. until drying of secretions**
Calcium chloride 10%	**1 GM/ 10 ml**	***Crush syndrome:*** **1gm IV/ IO slowly over 5 min. for suspected hyperkalemia (flush line with NS before & after administration)**
Dextrose 50%	**25 GM/ 50 ml**	**25 GM IV/ IO**
Diphenhydramine (Benadryl)	**50 mg/ 1ml**	***Allergic reaction:*** **50 mg IV/ IO/ IM; max 50 mg** ***Phenothiazine reaction*****: 1 mg/ kg slowly IV/ IO; max 50 mg.** ***Motion sickness****:* **1 mg/kg IM/IV to maximum dose of 50 mg; maximum IV rate is 25 mg/minute**
Dopamine	**400 mg/ 250 ml Pre-mix**	**See specific policy dosing chart**
Epinephrine 1:1000	**1 mg/ 1ml** **EpiPen® (0.3mg) auto-injector**	***Allergic Reaction/ Anaphylaxis:*** **0.01 mg/ kg IM to max 0.5 mg or EpiPen®; MR x 1 in 5 minutes)** ***Bronchospasm/ Asthma/ COPD:*** **0.01 mg/kg IM; max. dose 0.5 mg. MR once in 5 minutes or EpiPen®**

Epinephrine 1: 10,000	**1 mg/ 10 ml**	***Anaphylaxis:*** **If unresponsive, no palpable BP, no palpable pulse - give 0.01 mg/kg to max of 0.5 mg/ 0.5 ml IV/ IO** ***Cardiac Arrest:*** **1mg (10 ml) IV/ IO followed by 20 ml NS flush q 3-5 min. during resuscitation**
Glucose Paste	**15 GM / tube**	**30 GM PO**
Glucagon		**1 mg IM**
Ipratropium (Atrovent)	**500 mcg per unit dose (2.5 ml)**	**500 mcg**
Lidocaine 2% (preservative free)	**20 mg / 1 ml**	**IO insertion: infuse 20-40 mg IO over 30-60 seconds**
Nerve gas Auto-Injector Kit contains: **Atropine** **Pralidoxime Chloride (2 PAM)**	**2 mg (0.7 ml)** **600 mg (2 ml)**	***Small Exposure to vapors/ liquids:*** **1 dose of both medications (Atropine & 2-PAM), MR X1 in 10 minutes.** ***Larger exposure to liquids/ vapors:*** **3 doses initially (both medications)**
Midazolam (Versed)	**2 mg/2 ml (IV/IO/IM)** **5 mg/1 ml (IN)**	***Cardioversion/ Pacing:*** **1 mg slow IV/ IO; MR 1 mg q 3 min.; Max dose = 0.05 mg/kg** ***Seizure:*** **1 mg IV slowly; MR in 3 min. to maximum dose 0.05 mg/kg. For IN: 5 mg (2.5 mg in each nostril). For IM: 0.1 mg/kg; MR x 1 in 10 minutes.** ***Sedation:*** **see specific policy**
Morphine Sulfate	**10 mg/ 1ml**	***Chest Pain:*** **2-5 mg slow IV/IO; MR q 2-3 min. to max of 10 mg** ***Pain Management/ Trauma Patient:*** **5 mg slow IV/ IO, MR q 5 min if SBP >100; max dose 20 mg** ***Pulmonary Edema:*** **2-5 mg slow IV/ IO. Physician Consult required**
Naloxone (Narcan)	**2 mg/ 5 ml**	**0.4- 2.0mg IV/IO/IM/SL/IN; MR in 5 min**
Nitroglycerine	**0.4 mg/ tablet or spray**	**1 SL; MR q 5 min. if SBP > 100**
Ondansetron (Zofran)	**4 mg**	**4 mg ODT/IM or slow IV over 30 sec; MR x 1 in 10 minutes**
Sodium Bicarbonate	**50 mEq/ 50 ml**	**1 mEq/ kg IV/ IO**

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.

ROUTINE MEDICAL CARE (RMC)
BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To define Routine Medical Care (RMC) in the pre-hospital setting

TREATMENT

- Assess Airway, Breathing and Circulation (ABC)
- Apneic and/ or pulseless:
  - Begin CPR in accordance with the standards established by the American Heart Association, including Early Defibrillation
- Patient breathing with pulse present:
  - Administer oxygen per the Airway/Oxygen protocol; using airway adjuncts indicated for signs and symptoms
  - Control significant external bleeding
- Check vital signs – repeat q 5 min. for emergent patients and q 15 min. for non-emergent patients.
- Obtain pulse oximetry, if available
- Obtain:
  - Chief complaint
  - History of current event
  - Past medical history
  - Medications
  - Allergies
- Perform full secondary patient exam.
- If indicated, apply spinal motion restriction.
- Place patient in position of comfort or in other positions as needed to maintain adequate breathing and/ or circulation.

OXYGEN THERAPY PROCEDURE
BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Signs or symptoms of hypoxia, e.g., SpO2 < 94%, respiratory distress, ALOC
- Significant trauma or blood loss

EQUIPMENT

- Airway adjuncts
- Pulse Oximetry
- Nasal cannula
- Non-Rebreather mask
- Bag Valve Mask (BVM)
- Suction

PROCEDURE

- Apply appropriate oxygen delivery device
- If pulse oximetry available, titrate SpO2 between 94 - 99%
- Consider the need for assisted ventilation for inadequate breathing

RELATED POLICIES & PROCEDURES

- BLS 1 Routine Medical Care

NERVE GAS AUTO-INJECTOR PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Exposure to nerve/ chemical agents (Sarin, Suman, Tabun, Vx) exhibiting signs and symptoms that may include the following:
- **S.L.U.D.G.E.M.**
  - **S**alivation
  - **L**acrimination
  - **U**rination
  - **D**efecation
  - **G**astrointestinal pain and gas
  - **E**mesis
  - **M**iosis

Mild Symptoms	Severe Symptoms
Blurred vision, miosis	Strange or confused behavior
Excessive, unexplained teary eyes	Severe difficulty breathing or copious airway secretions
Excessive, unexplained runny nose	Severe muscular twitching and general weakness
Increased salivation, drooling	Involuntary urination and defecation
Chest tightness / difficulty breathing	Convulsions
Tremors / muscular twitching	Unconsciousness
Nausea / vomiting	
Unexplained wheezing / cough	
Acute onset of stomach cramps	
Tachycardia or bradycardia	

CONTRAINDICATION

- Not to be administered as a prophylactic to nerve agents

EQUIPMENT

- Duodote or Mark I

PROCEDURE

- For MILD symptoms of exposure:
  - Administer one (1) injection into the mid-lateral thigh if patient experiences two or more MILD symptoms of exposure. Wait 10-15 minutes for medication to take effect.
  - If after 10-15 minutes the patient does not develop any of the SEVERE symptoms listed above, no additional injections are recommended.
  - If at any time after the first dose, the patient develops any of the SEVERE symptoms, administer two (2) additional injections in rapid succession.
  - Transport
- For SEVERE symptoms of exposure:
  - Immediately administer three (3) injections into the mid-lateral thigh in rapid succession.
  - Transport

SPECIAL CONSIDERATION

- Medical Directors shall coordinate all training activities for those providers opting to carry Auto-Injector kits
- Training shall include following of the manufacturer's instructions as well as:
  - Indications for self / public administration
  - Demonstration of skills competency every two years after initial training according to Title 22, Div. 9, Chapter 2.

BRADYDYSRHYTHMIAS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- HR < 50 with adequate or inadequate perfusion

TREATMENT

- Adequate perfusion
  - ALS RMC
- Inadequate perfusion (acute altered mental status, ongoing chest pain, hypotension or other signs of shock)
  - ALS RMC
  - **Atropine** 0.5 mg IV/IO Repeat q 3-5 min. to total of 3 mg. (Atropine should not delay pacing for patients with inadequate perfusion).
  - Transcutaneous pacing for high-degree blocks (type II second-degree or third-degree)
  - Fluid bolus of 250-500 ml NS if hypotensive and lungs clear. Repeat as needed. If inadequate response, **Dopamine** 400 mg/250 ml pre-mixed solution. Start 2-10ug/kg/min. Titrate to SBP 100.

DOPAMINE

400 mg in 250 ml D5W (pre-mixed) 60 drops/min = 60 ml/hr

Weight (kg)	gtts/min to = 2-10 ug/kg/min	Weight (kg)	gtts/min to = 2-10 ug/kg/min
35-44	3 -15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATIONS

- Consider and treat possible contributing factors:

▪ Hypovolemia	▪ Toxins (overdoses)
▪ Hypoxemia	▪ Tamponade, cardiac
▪ Hydrogen ion (acidosis)	▪ Tension pneumothorax
▪ Hypo/Hyperkalemia	▪ Thrombosis (coronary / pulmonary)
▪ Hypoglycemia	▪ Trauma
▪ Hypothermia	

DOCUMENTATION / ESSENTIAL ELEMENTS

- Time pacing started/ stopped

RELATED POLICIES/ PROCEDURES

- Adult Sedation Policy ATG 3
- External Cardiac Pacing Procedure ALS PR 11

ST ELEVATION MYOCARDIAL INFARCTION (STEMI)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients with acute ST Elevation Myocardial Infarction (STEMI) as identified by machine read.

☎ PHYSICIAN CONSULT

- If patient is symptomatic for STEMI, but computer interpretation is not in agreement, transmit ECG and consult the STEMI Receiving Center (SRC) receiving physician.
- If above findings occur, but transmission is not available, activate SRC with Early STEMI Notification.

TREATMENT/ PROCEDURE

- ALS RMC
- Treat patient under appropriate protocol
- Determine if patient is stable or unstable, and transport to appropriate facility
- Provide Early STEMI Notification
  - If elevation in leads II, III, and AVF, suspect RVI and perform right-sided ECG.
- Transmit all STEMI ECGs to SRC if possible
  - To determine if patient is stable or unstable:

Stable	Unstable
▪ Stable VS and no indication of shock	▪ SBP< 90 (prior to **NTG** and **Morphine Sulfate** administration) ▪ Signs of acute pulmonary edema ▪ Ventricular tachyarrhythmia requiring defibrillation or antiarrhythmic therapy ▪ Patient's condition, based on paramedic judgment, requires immediate hospital intervention

  - Stable patient:
    - May go to preferred SRC if the estimated transport time is not more than 15 minutes longer than the nearest SRC
    - Preferred SRC defined:
      - Patient preference
      - SRC used by treating cardiologist.
  - Unstable patient:
    - Transport to the closest SRC

SPECIAL CONSIDERATION

- Early notification report to include: age, gender, symptoms (including presence or absence of chest pain), 12-lead findings

DOCUMENTATION- ESSENTIAL ELEMENTS

- 12-lead findings
- How preferred SRC is determined

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- 12-lead ECG Procedure ALS PR 12
- Chest Pain / ACS C8

RETURN OF SPONTANEOUS CIRCULATION (ROSC)
ALS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- The presence of a palpable pulse and/or blood pressure for at least 30 seconds after cardiac arrest

TREATMENT

- ALS RMC
  - Maintain oxygen saturation 94%-99%
  - $ETCO_2$ if available
  - Avoid excessive ventilation. Start at 10-12 breaths/min and titrate to target $ETCO_2$ 35-40 mm Hg
- 12-lead ECG / Early notification if STEMI
- Elevate head 30° if patient is conscious
- Transport to nearest available STEMI Receiving Center
- For BP < 90 mm Hg:
  - NS 1-2 liter bolus; if no improvement:
  - **Dopamine** 2-10 mcg/kg/min. Titrate to SBP 100

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed) 60 drops/min = 60 ml/hr			
Weight (kg)	**gtts/min to = 2-10 ug/kg/min**	**Weight (kg)**	**gtts/min to = 2-10 ug/kg/min**
35-44	3-15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATION

- Consider and treat possible contributing factors:

▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia	▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma

DOCUMENTATION- ESSENTIAL ELEMENTS

- Cardiac rhythm documentation
- 12-lead findings

RELATED POLICIES/ PROCEDURES

- 12-lead Electrocardiogram ALS PR 12
- Destination Guidelines GPC 4

SPINAL MOTION RESTRICTION (SMR)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

Any patient identified by Marin County's Spinal Injury Assessment [GPC 13A] to warrant full or modified SMR. The spinal injury assessment should be performed prior to application of SMR. SMR describes the procedure used to care for patients with possible unstable spinal injuries.

CONSIDERATIONS

- Full SMR is not benign; it can lead to pain, respiratory compromise, skin breakdown (decubiti) and contribute to cerebral hypo-perfusion in patients with stroke or head injury
- **Routine use of SMR should be avoided**. Its use should be reserved for patients with confirmatory physical findings or high clinical suspicion of unstable spinal fracture
- **SMR is not indicated in patients with isolated penetrating trauma [GPC 13A]**
- Use SMR with caution with patients presenting with **dyspnea** and position appropriately
- If patient experiences negative effects of SMR methods used, alternative measures should be implemented as soon as possible.
- **Pregnant patients** (>20 Weeks) should be positioned on the left side, immobilized as appropriate, supporting fetus
- **Combative patients:** Avoid methods that provoke increased spinal movement and/or combativeness
- **Pediatric patients**
  - Consider the use of SpO2 and EtCO2 to monitor respiratory function
  - Consider use of padded pediatric motion restricting board
  - Avoid methods that provoke increased spinal movement
  - If choosing to apply SMR to patient in car seat, ensure that proper assessment of patient posterior is performed
  - Car seats:
    - Infants or children restrained in a front or rear-facing car seat (excludes booster seats) may be immobilized and extricated in the car seat. The infant or child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).
    - Children restrained in a booster seat (with or without a back) need to be extricated and immobilized following standard SMR procedures.

PROCEDURE

Full SMR (Cervical Collar with full length-vacuum splint or rigid device with lateral immobilization and straps)

- Indications
  - Patients with obvious acute neurologic deficit (paralysis or weakness)
  - Priapism or suspected spinal shock
- Procedure
  - **Assess motor/sensory function before SMR and regularly reassess and document** motor/sensory function (include finger abduction, wrist/finger extension, plantar/dorsal flexion and sharp/dull exam if possible) following application of SMR
  - **Apply soft or rigid cervical collar**
    - Cervical collar may be omitted for patients with isolated lumbar and/or lower thoracic spine tenderness.

- If needed, **extricate patient** limiting movement of the spine
- **Apply adequate padding** on backboards or use vacuum mattress to prevent tissue ischemia and increase comfort.
- Secure patient to device.
- **Consider the use of SpO2 and EtCO2** to monitor respiratory function

Modified SMR (may include any of the following: soft or rigid cervical collar alone; self limiting motion; padding to limit movement; KED; or ½ length vacuum splint)

- Indications
  - Patients who do not meet criteria above but who are at high risk due to blunt trauma mechanism
  - Ambulatory/self-extricated patients who have mid-line neck pain and/or tenderness.
- Procedure
  - **Use the least invasive methods/tools** available which minimize patient discomfort and respiratory compromise. Least invasive examples: Lateral, semi-fowler's or fowler's position with cervical collar only; soft collars; pillows; vacuum splint or gurney mattress; children's car seats.
  - **Hard backboards should only be used when absolutely necessary** (e.g. patient transfer). Consider pull sheets, other flexible devices (e.g. flat stretchers), or scoops and scoop-like devices.
  - **Provide manual stabilization** restricting gross motion. **Alert and cooperative patients** may be allowed to self-limit motion if appropriate with or without cervical collar
  - **self-extrication** is allowable for patients meeting criteria for Modified SMR

RELATED POLICIES/ PROCEDURES

Spinal Injury Assessment GPC13A

SPINAL INJURY ASSESSMENT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients with potential for unstable spinal injury. Any patient with a mechanism of injury should be evaluated for application of spinal motion restriction (SMR)

CRITICAL INFORMATION

- Omit SMR if all assessment criteria are assessed AND normal.
- 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.
- Penetrating trauma victims benefit most from rapid assessment and transportation to a trauma center without SMR.
- Penetrating trauma victims (stabbings, gunshots) 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
- Consider SMR in high-risk patients (see algorithm)

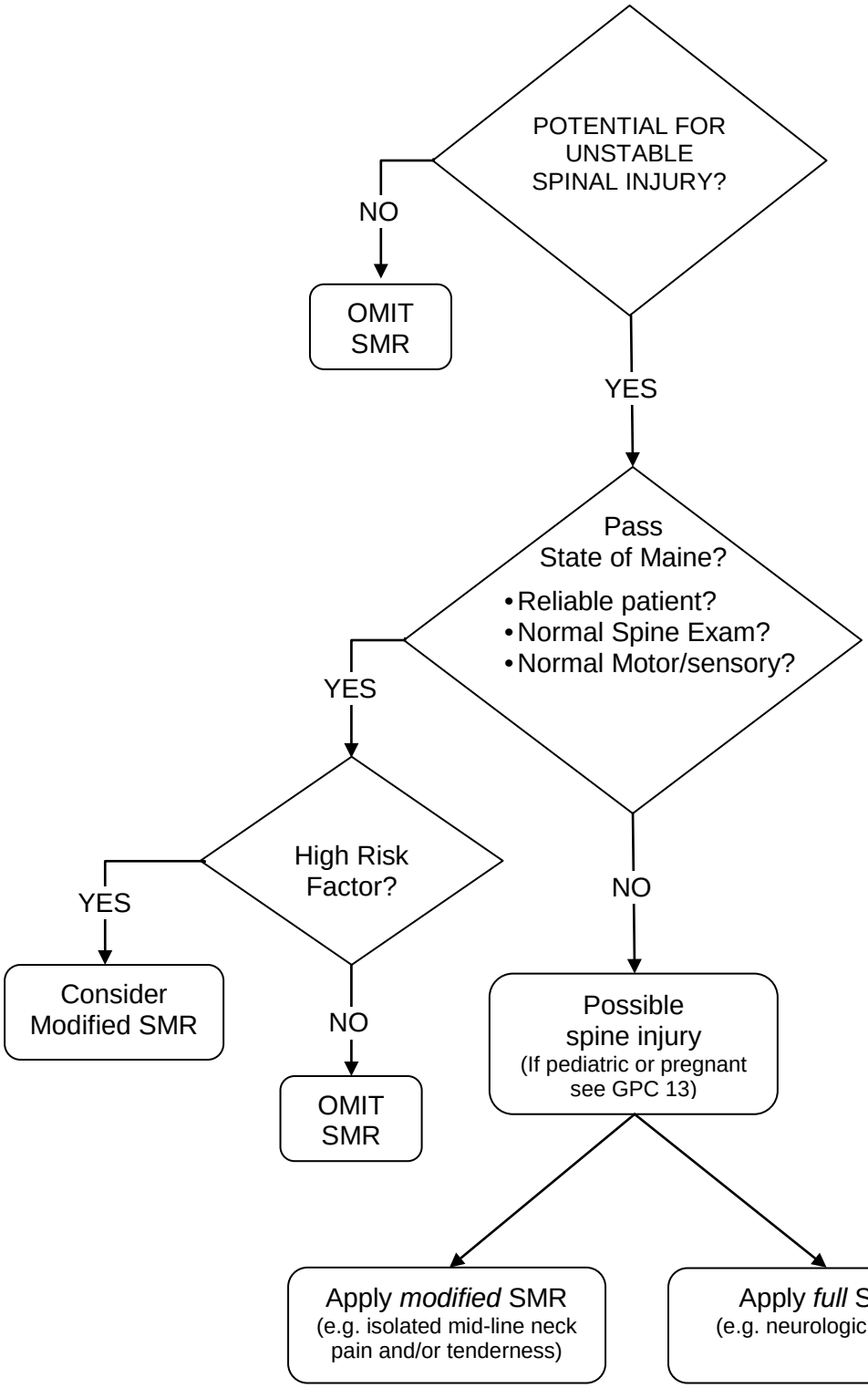
DOCUMENTATION- ESSENTIAL ELEMENTS

- Sensation and motor function of all extremities prior and subsequent to application of SMR
- Neurological, motor, sensory, other examination findings & situational circumstances which qualifies patient for omission of SMR

RELATED POLICIES/ PROCEDURES

- Spinal Motion Restriction GPC 13

PROCEDURE



High-Risk Factors:

- Age ≥ 65
- Meets Trauma Patient Criteria for Mechanism of Injury
- Axial load to the head (e.g. diving injury)
- Numbness or tingling in extremities

If any one of the high-risk factors above is present, consider SMR

A Reliable Patient is cooperative, alert and oriented, without signs of drug or alcohol impairment, distracting injuries or a language barrier.

Spine Exam

- Palpate vertebral column thoroughly

Motor/Sensory Exam

- Wrist or finger extension (both hands)
- Plantarflexion (both feet)
- Dorsiflexion (both feet)
- Check gross sensation in all extremities
- Check for abnormal sensations to extremities(e.g. parathesias)

BARIATRIC PATIENT TRANSPORTS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

To be used when the weight of the patient exceeds the weight limitations of the ambulance equipment.

CRITICAL INFORMATION

- The emergent need to transport a patient shall supersede the application of this policy.
- At all times, the dignity of the patient will be preserved and considered a high priority for all personnel.
- Ambulance cots shall be clearly labeled with weight capacity information.
- Additional personnel shall be utilized when moving bariatric patients to prevent injury to rescue personnel and the patient.
- The additional time to move the patient shall be considered when evaluating the decision to wait for a bariatric transport unit.

EQUIPMENT

- Bariatric Ambulance

PROCEDURE

- When ambulance crews are faced with a patient that exceeds the weight limitations of the standard ambulance equipment, personnel shall request a 'bariatric ambulance' from their dispatcher. Crews will provide the estimated weight of the patient.
- The dispatcher shall contact the local private ambulance providers to determine if they have a bariatric unit available. The private ambulance provider will provide an ETA to the incident scene.
- Dispatchers will relay this information to the personnel at the incident who will then confirm their need for the specialized equipment.
- If the patient's condition is such that a delay in transport (caused by the use of a bariatric equipped ambulance) will potentially cause additional harm to the patient, ambulance personnel should consider transporting the patient on the floor of the standard ambulance. In those cases, floor and wall cot hardware shall be removed (if possible) so as not to compromise patient safety.
- Bariatric patients shall only be transported in an ambulance.
- As early as possible, field personnel will relay to the destination hospital that they are inbound with a bariatric patient. The communication will include the approximate weight of the patient.
- Field personnel shall notify their agency CQI coordinator and immediate supervisor of any incident involving the management and transport of a bariatric patient. Management personnel will review all cases for appropriate care.

SPECIALTY PATIENT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

I. DEFINITION

A Specialty Patient is a patient with unique medical or behavioral prehospital needs which fall outside current county protocols.

II. PURPOSE

Medical technology and increased home health capabilities have created a special population of patients that may interface with the EMS system. The purpose of this policy is to provide specifically approved care and EMS services to those who are identified as Specialty Patients. The Agency will work with that patient (and/or DDM) and his or her primary care physician in order to develop and approve a Specialty Patient Protocol (SPP) which will provide guidance to EMS should the need arise.

III. PROCEDURE

A. Active and Current SPP in place
   1. COMM center will notify first responders of SPP enroute to call
   2. Responding EMS units are to follow current SPP for that particular patient which has been approved by the Marin County Medical Director and which will be located in the lock box of all ALS units and with the inventory checklist of all BLS units.
   3. Unless specified in the SPP, transport the patient according to Destination Guidelines GPC 4. In some cases, if the patient is stable, transport may involve bypassing the closest facility for a more distant yet medically appropriate destination.
   4. If the patient or DDM requests changes to their current protocol, the transporting unit will contact the intended receiving facility for physician consult. Personnel shall not exceed their established scope of practice.

B. No SPP in place
   1. When an EMS provider identifies the possible need for an SPP, the provider shall contact their immediate supervisor and the provider's Medical Director (i.e., a fire department may be notified by a patient's physician that the patient is in need of an SPP).
   2. If the possible need is identified during the course of rendering care to a patient, the provider shall treat the patient according to existing protocols. At the conclusion of the call, the provider shall contact their immediate Supervisor and the provider's Medical Director.

C. All established and approved SPPs will be written on official Marin County letterhead and signed by the current Marin County EMS Agency Medical Director. Issue date and expiration date will be included.

D. Current SPPs will be reviewed annually as part of Policy and Procedure updates.

POISONS/DRUGS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Ingestion and/or exposure to one or more toxic substances

CRITICAL INFORMATION

- Identify substance/drug if possible and amount ingested
- Time of ingestion and length of exposure
- Risk of exposure to field providers

TREATMENT

- ALS RMC
- **Hydrocarbons or Petroleum distillates** (kerosene, gasoline, lighter fluid, furniture polish):
  - Do not induce vomiting.
  - Transport immediately.
- **Caustic/ Corrosives** (Ingestion of substances causing intra-oral burns, painful swallowing or inability to handle secretions):
  - Do not induce vomiting.
  - Consider dilution with no more than 1-2 glasses of water or milk if no respiratory compromise or change in mental status.
- **Insecticides** (organophosphates, carbonates; cause cholinergic crisis characterized by bradycardia, increased salivation, lacramation, sweating, muscle fasciculation, abdominal cramping, pinpoint pupils, incoherence or coma:
  - If skin exposure, decontaminate patient, remove clothing, wash skin, avoid contamination of prehospital personnel
  - **Atropine** 2 mg IV slowly. Repeat 2-5 minutes until drying of secretions, reversal of bronchospasm and reversal of bradycardia. Maximum dose 10 mg.
  - If seizures, **Midazolam (Versed)** 1 mg IV slowly; MR in 3 minutes to maximum dose 0.05 mg/kg
    - For IN: 5 mg (2.5mg in each nostril)
    - For IM: 0.1mg/kg; MR x 1 in 10 minutes
- **Cyclic Antidepressants** (frequently associated with respiratory depression, almost always tachycardic, widened QRS and ventricular arrhythmias generally indicate life-threatening ingestions):
  - In the presence of life-threatening dysrhythmias (hemodynamically significant supraventricular rhythms, ventricular dysrhythmias or QRS > 0.10):
    - Hyperventilate if assisting ventilations or if intubated.
    - **Sodium bicarbonate** 1 mEq/kg IVP
  - If seizures, **Midazolam (Versed)** 1 mg IV slowly; MR in 3 minutes to maximum dose 0.05 mg/kg
    - For IN: 5 mg (2.5 mg in each nostril)
    - For IM: 0.1mg/kg; MR x 1 in 10 minutes
- **Phenothiazine reactions** (restlessness, muscle spasms of the neck, jaw, and back; oculogyric crisis, history of ingestion of phenothiazine, or unknown medication):
  - **Benadryl** 1mg/ kg slow IVP to max of 50 mg

- **Other non-caustic drugs** (patient awake and alert):
  - If within 1 hour of ingestion, consider **Activated charcoal** 1 GM/kg PO, not to exceed 50 GM
  - If level of consciousness diminishes, protect airway, suggest lateral position with head down.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Obtain history of ingestion, substance, amount and time of ingestion, bring sample to hospital if possible
- Vomiting prior to ED arrival

RELATED POLICIES/ PROCEDURES

- Seizures N2

SEPSIS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Documented or suspected source of infection AND at least TWO of the following:
  - HR > 90
  - RR > 20
  - SBP < 90
  - Temperature >100.4 or <96

CRITICAL INFORMATION

- If rales present, see Acute Pulmonary Edema R5 and continue to treat as below.

TREATMENT

- ALS RMC
- Two large bore IVs or IOs (only one may be in antecubital fossa)
- Initiate 20cc/kg fluid bolus. May give up to two liters fluid.
- Early Sepsis Notification
- If SBP < 90 consider:
  - IV / IO infusion of **Dopamine** 400 mg/250 ml D5W (pre-mixed). Begin at 2-10ug/kg/min.
  - Monitor blood pressure every five minutes. Aim for SBP≥ 100.

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed) 60 drops/min = 60 ml/hr			
Weight (kg)	**gtts/min to = 2-10 ug/kg/min**	**Weight (kg)**	**gtts/min to = 2-10 ug/kg/min**
35-44	3-15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATION

- Consider other causes of shock and treat as per specific protocols

DOCUMENTATION- ESSENTIAL ELEMENTS

- Suspected source of infection
- History of progression of illness

RELATED POLICIES/ PROCEDURES

- Destination Guideline GPC 4
- Acute Pulmonary Edema R5

SEIZURES
ALS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Recurring or continuous generalized seizures with ALOC

TREATMENT

- ALS RMC
- If blood glucose <70 mg/ dl, give **Dextrose** 50% (D50W) 50 ml IVP or **Glucagon** 1 mg IM
- **Narcan** 2 mg IV/ IM/ SL/ IN if opiate overdose is suspected and the patient is in respiratory failure or shock
- **Midazolam (Versed)**
  - IV/IO: 1 mg slowly; MR q 3 minutes until seizure stops or maximum dose 0.05 mg/kg.
  - IN: 5 mg (2.5 mg in each nostril)
  - IM: 0.1 mg/kg; MR x 1 in 10 minutes if still seizing.

SPECIAL CONSIDERATION

- Consider treatable etiologies (hypoglycemia, hypoxia, narcotic overdose, unusual odor of alcohol, signs of trauma, medic alert tag) prior to administering anti-seizure medications.
- Expect and manage excessive oral secretions, vomiting, and inadequate tidal volume.
- Treatment should be based on the severity and length of the seizure activity.
- Focal seizures without mental status changes may not require pre-hospital pharmacological intervention.
- Never administer **Midazolam (Versed)** rapid IVP/IO since cardiac and/or respiratory arrest may occur.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Blood glucose level
- Number, description, duration of seizures
- Dosage of medications, times administered

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam (Versed) & Narcan ALS PR 7

CEREBROVASCULAR ACCIDENT (STROKE)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Positive finding per the Cincinnati Pre-hospital Stroke Scale (CPSS)

CRITICAL INFORMATION

- Criteria for Early Stroke Notification:
  - Evidence of hemispheric stroke per the CPSS (see below)
  - Last known normal less than 4 hours
  - Blood glucose between 70 and 400 mg/dl
  - If patient presents with sudden, witnessed onset of coma or rapidly deteriorating GCS with high likelihood of intracranial bleed, transport to Marin General Hospital

TREATMENT

- ALS RMC
- If patient meets criteria listed above, rapid transport to patient's preferred Primary Stroke Center (PSC), as long as the estimated transport time is not more than 15 minutes longer than the nearest PSC.
  - Preferred PSC: patient's preference or PSC with patient's medical records
  - No preferred PSC: transport to the closest PSC
- Early Stroke Notification

DOCUMENTATION- ESSENTIAL ELEMENTS

- Criteria for Early Stroke Notification
- Documentation of CPSS results
- Last known normal (document in military time)
- Blood glucose level
- GCS
- History of intracranial hemorrhage
- Serious head injury within 2 months
- Seizure within 6 hours of last known normal
- Taking anticoagulant medications (e.g. Warfarin/ Coumadin, Pradaxa, Xarelto, Eliquis)
- Improving neurological deficit

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Prehospital / Hospital Contact Policy 7001
- Ambulance Diversion Policy 5400

Cincinnati Pre-Hospital Stroke Scale (CPSS)

Facial Droop (the patient shows teeth or smiles)
___Normal: both sides of the face move equally
___Abnormal: Right side of the face does not move as well as the left
___Abnormal: Left side of the face does not move as well as the right

Arm Drift (the patient closes their eyes and extends both arms straight out for 10 seconds)
___Normal: both arms move the same, or both arms do not move at all
___Abnormal: Right arm either does not move, or drifts down compared to the left
___Abnormal: Left arm either does not move, or drifts down compared to the right

Speech (the patient repeats “The sky is blue in Cincinnati.” or other sentence)
___Normal: the patient says the correct words with no slurring of words
___Abnormal: the patient slurs words, says the wrong words, or is unable to speak

SEVERE PRE-ECLAMPSIA/ ECLAMPSIA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Third trimester pregnancy with the following signs and symptoms:
  - Hypertension (SBP systolic >160, DBP >110)
  - Mental status changes
  - Visual disturbances
  - Peripheral edema (pre-eclampsia)
  - Seizures and/or coma (eclampsia)

☎ PHYSICIAN CONSULT

- Administration of **NTG**

TREATMENT

- Position on left side
- ALS RMC
- Transport quickly with a quiet environment (no siren)
- IV NS TKO started enroute
- Seizures: **Midazolam (Versed)**
  - IV: 1 mg slowly; MR in 3 minutes to maximum dose 0.05 mg/kg.
  - IN: 5 mg (2.5 mg in each nostril)
  - IM: 0.1 mg/kg; MR x 1 in 10 minutes if still seizing.
- If DBP>110:
  - ☎ **NTG** 0.4 mg spray/SL; MR in 10 minutes

RELATED POLICIES/ PROCEDURES

- Seizures N 2
- Destination Guidelines GPC 4

PEDIATRIC RESPIRATORY DISTRESS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient exhibits any of the following:
  - Wheezing
  - Stridor
  - Grunting
  - Nasal flaring
  - Apnea

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years

TREATMENT

- ALS RMC
- Position of comfort to maintain airway
- Allow parent to administer oxygen if possible
- Upper Airway/ Stridor:
  - Mild to moderate respiratory distress: 3ml NS via HHN
  - Moderate to severe respiratory distress: **Epinephrine** 1:1,000 5 mg in 5 ml via nebulizer
- Lower Airway Obstruction/ Wheezing:
  - **Albuterol** 2.5 mg in 3 ml NS via HHN, mask, or bag-valve-mask; MR x 1 and
  - **Ipratropium** 500 mcg in 3ml NS via HHN or bag-valve-mask
  - If response inadequate, **Epinephrine** 1:1,000 (0.01 mg/kg) IM, max. single dose 0.3 mg
- Foreign Body Obstruction:
  - Attempt to clear airway:
  - < 1 year: 5 back blows and 5 chest thrusts
  - > 1 year: 5 abdominal thrusts
  - Visualize larynx and remove foreign body with Magill forceps
- Respiratory failure/ apnea/ complete obstruction.
  - Attempt positive pressure ventilation via bag-valve-mask, if unable to ventilate, attempt intubation

SPECIAL CONSIDERATIONS

- Assess key history factors: recent hospitalizations, asthma, allergies, croup, and medication usage

PEDIATRIC BRADYCARDIA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- HR< 60 causing cardio-respiratory compromise

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years
- History of exposure to substances or medications

TREATMENT

- ALS RMC
- 12-lead ECG
- Obtain IV/IO access
- If responsive and no signs of shock
  - Monitor and transport
- If shock present:
  - Chest compressions if HR < 60 and patient is < 8 years with poor perfusion:
  - **Epinephrine** 1:10,000 IV/IO: 0.01 mg/kg (0.1 ml/kg); MR q 3-5 min.
  - If first degree block or Mobitz type I**, Atropine** 0.02 mg/kg IV/IO (max single dose: 1 mg; minimum single dose: 0.1 mg); MR x 1
  - Consider endotracheal intubation
- Consider cardiac pacing if no response to above treatment.

SPECIAL CONSIDERATIONS

- Consider and treat possible contributing factors:

▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia	▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma

RELATED POLICIES/ PROCEDURES

- External Cardiac Pacing Procedure ALS PR 11

PEDIATRIC TACHYCARDIA
POOR PERFUSION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Rapid heart rate (HR> 220 infant: HR> 180 child) with pulse and poor perfusion

☎ PHYSICIAN CONSULT

- **Amiodarone**

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years
- Monophasic and biphasic doses are the same

TREATMENT

- ALS RMC
- 12-lead EKG
- If normal QRS ≤ 0.09 seconds; Probable Sinus Tachycardia or Supraventricular Tachycardia:
  - Consider vagal maneuvers, but do not delay other treatments
  - If vascular access readily available, **Adenosine** 0.1mg/kg IV/ IO; max first dose 6 mg. MR X 1; (double the dose), maximum dose 12 mg. Follow each dose with rapid 10 ml flush.
  - Premedicate with **Midazolam** 0.05 mg/kg IV/IO (maximum 1 mg per dose).
  - Do not delay cardioversion if patient unstable.
  - Cardiovert: 0.5-1J/kg; if not effective, increase to 2 J/kg
- Wide QRS ≥ 0.09 seconds; Probable Ventricular Tachycardia:
  - Cardiovert (see above)
  - ☎ **Amiodarone** if no response to cardioversion: 5 mg/kg IV over 20-60 minutes

SPECIAL CONSIDERATION

- Consider and treat possible contributing factors:

▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia	▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Pain ▪ Trauma

PEDIATRIC SEIZURES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Recurring or continuous generalized seizures with ALOC

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years
- Evaluate for and treat hypoglycemia, hypoxia, narcotic overdose, trauma, fever, etc. prior to administering anti-seizure medications

TREATMENT

- ALS RMC
- Vascular access for prolonged seizures
- Check blood glucose and treat if <60 mg/dl (<40 mg/dl neonate):
  - Neonate = **D10W** 2 ml/kg IV/IO
  - < 2 years = **D25W** 2 ml/kg IV/IO or D10W 4 ml/kg IV/IO
  - ≥ 2 years = **D50W** 1 ml/kg IV/IO
  - If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- **Midazolam (Versed)**
  - IV/IO: 0.05 mg/kg (max. 2 mg per dose). May repeat every 5 minutes until seizure stops and/or total dose of 5 mg is reached.
  - IN/IM: 0.2 mg/kg (for IN, split dose in each nostril); May repeat every 5 minutes until seizure stops and/or maximum dose of 5 mg is reached.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Number, description, and duration of seizures

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam(Versed) & Narcan ALS PR 7

PEDIATRIC SEIZURES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Recurring or continuous generalized seizures with ALOC

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years
- Evaluate for and treat hypoglycemia, hypoxia, narcotic overdose, trauma, fever, etc. prior to administering anti-seizure medications

TREATMENT

- ALS RMC
- Vascular access for prolonged seizures
- Check blood glucose and treat if <60 mg/dl (<40 mg/dl neonate):
  - Neonate = **D10W** 2 ml/kg IV/IO
  - < 2 years = **D25W** 2 ml/kg IV/IO or D10W 4 ml/kg IV/IO
  - ≥ 2 years = **D50W** 1 ml/kg IV/IO
  - If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- **Midazolam (Versed)**
  - IV/IO: 0.05 mg/kg (maximum 1 mg per dose). MR q 3 minutes until seizure stops and/or total dose of 5 mg is reached.
  - IN: 0.2 mg/kg (split dose equally per nostril); Maximum dose = 5 mg
  - IM: 0.1 mg/kg; MR x 1 in 10 minutes if still seizing.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Number, description, and duration of seizures

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam(Versed) & Narcan ALS PR 7

PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Abnormal neurologic state where child is less alert and interactive than is age appropriate

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years
- **Narcan** is contraindicated with neonatal resuscitation

TREATMENT

- ALS RMC
- Check blood glucose and treat if < 60 mg/dl (neonate < 40 mg/dl):
  - Neonate = **D10W** 2 ml/kg IV/IO
  - < 2 years = **D25W** 2 ml/kg IV/IO or D10W 4ml/kg IV/IO
  - >2 years = **D50W** 1 ml/kg IV/IO
- If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- **Narcan** 0.1 mg/kg IM/ IV/ IO/ IN. MR Q 5 minutes up to 2 mg if no improvement in ALOC and strong suspicion of opiate exposure

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam (Versed) and Narcan ALS PR 7

PEDIATRIC TOXIC EXPOSURES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Probable ingestion and/or exposure to one or more toxic substances, including alcohol and medications

☎ PHYSICIAN CONSULT

- **Calcium Channel Blocker, Beta-Blockers, and Tricyclic overdoses**

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;** adolescent = >14 years
- Bring identifying substance containers to hospital when possible / appropriate

TREATMENT

- ALS RMC
- Fluid bolus **NS** 20 ml/kg IV/IO as indicated
- If suspected opiate overdose in patient > four weeks, administer **Narcan** 0.1 mg/kg IV/IO/IM/IN prior to advanced airway
  - **Hydrocarbons or Petroleum Distillates**
    - Do not induce vomiting
    - Transport immediately
  - **Calcium Channel Blockers / Tricyclics / Beta-Blockers**
    - Transport immediately
    - If within one hour of ingestion Administer **Activated Charcoal** 1 gm/kg PO, max. of 50 gms, if airway is protected
    - ☎ Physician consultation for additional treatments (i.e., Calcium Chloride, Sodium Bicarb)
  - **Caustics/Corrosives**
    - Do not induce vomiting
    - Consider dilution with no more than 1-2 glasses of water or milk if NO respiratory compromise or change in mental status
  - **Insecticides** (organophosphates, carbonates; cause cholinergic crisis characterized by bradycardia, increased salivation, lacramation, sweating, muscle fasciculation, abdominal cramping, pinpoint pupils, incoherence or coma):
    - Decontaminate patient
    - **Atropine** 0.05 mg/kg IV/IO slowly every 5-10 min. to max. of 4 mg or relief of symptoms
    - If seizures, **Midazolam (Versed):**
      - IV / IO: 0.05 mg/kg (maximum 1 mg per dose). May repeat every 3 minutes until seizure stops and/or total dose of 5 mg is reached.
      - IM: 0.1 mg/kg; May repeat x 1 in 10 minutes if still seizing.
      - IN: 0.2 mg/kg (split dose in half for each nostril). Maximum dose = 5 mg
  - **Phenothiazine Reactions**
    - **Benadryl** 1 mg/kg IM/IV/IO to max. of 50 mg
    - **Other Non-Caustic Drugs,** awake and alert
    - If within one hour of ingestion**: Activated Charcoal** 1 gm/kg PO, max. of 50 gms

SPECIAL CONSIDERATION

- Early contact with Poison Control Center

DOCUMENTATION- ESSENTIAL ELEMENTS

- Toxic substance identification
- Approximate time of exposure / ingestion

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam(Versed) and Narcan ALS PR 7
- Pediatric Seizures P 9

PEDIATRIC APPARENT LIFE-THREATENING EVENT (ALTE)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- A frightening episode to the observer characterized by some combination of:
  - Apnea (central or obstructive)
  - Color change (cyanosis, pallor, erythema)
  - Marked change in muscle tone
  - Unexplained choking or gagging

☎ PHYSICIAN CONSULT

- Parent/Designated Decision Maker (DDM) refuses medical care and/or transport

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years**;**
- adolescent = >14 years
- Although ALTE usually occurs in patients < 12 months, any patient under 24 months who experiences any of the above indications should be considered
- Medical history: cardiac arrhythmias/anomalies, child abuse, meningitis, near SIDS, seizures, sepsis, toxic exposure, trauma

TREATMENT

- ALS RMC
- Check blood glucose and treat if < 60 mg/dl (< 40 mg/dl if neonate):
  - Neonate = **D10W** 2 ml/kg IV/IO
  - < 2 years = **D25W** 2 ml/kg IV/IO or D10W 4 ml/kg IV/IO
  - ≥ 2 years = **D50W** 1 ml/kg IV/IO
  - If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals

SPECIAL CONSIDERATION

- Most ALTE patients have a normal physical exam
- Assume parental history is real. Encourage transport no matter how well the patient might appear.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Severity, nature and duration of the episode
- General appearance of the patient, skin color, extent of interaction with the environment
- Evidence of trauma

RELATED POLICIES/ PROCEDURES

- Suspected Child/Dependent Adult/ Elder Abuse GPC 9

PEDIATRIC MEDICATIONS
AUTHORIZED/ STANDARD INITIAL DOSE

DRUG	CONCENTRATION	STANDARD DOSE
Activated Charcoal	**25 GM/ bottle**	**1 gm/ kg PO; not to exceed 50 gm.**
Adenosine (Adenocard)	**6 mg/ 2 ml**	***Tachycardia Poor Perfusion:*** **0.1mg/kg; max. first dose 6mg. MR x 1 (double the dose); max. dose 12mg. (Rapid IV/IO push, each dose followed by 5 ml NS flush).** ***☎ Tachycardia Adequate Perfusion:*** **Dose as above after physician consult**
Albuterol	**2.5 mg/ 3 ml NS**	**2.5 mg/ 3ml NS**
Amiodarone	**150 mg/ 3 ml**	***Pulseless Arrest:*** **5 mg/ kg IV/ IO followed by or diluted in 20-30 ml NS. Maximum single dose 300 mg.** ***☎ Tachycardia with poor perfusion:*** **5mg/kg IV/IO over 20-60 min.**
Atropine	**1 mg/ 10 ml**	***Bradycardia:*** **0.02 mg/kg IV/ IO (minimum dose 0.1 mg.; single max. dose 1mg). MR X 1.** ***Organophosphate Poisoning:*** **0.5 mg/kg IV/IO; MR q 5-10 min. max. dose 4mg or until relief of symptoms**
Dextrose 10%	**D10%**	***ALOC (Neonate)*****: 2 ml/ kg IV/IO** ***ALOC (<2 years):*** **4ml/ kg IV/IO**
Dextrose 25%	**2.5 GM/ 10 ml**	***ALOC (< 2 years)*****: 2 ml/ kg IV/IO**
Dextrose 50%	**25 GM/ 50 ml**	***ALOC (> 2 years)*****: 1 ml/ kg IV/IO**
Diphenhydramine (Benadryl)	**50 mg/ 1 ml "or" 50 mg/ 10 ml**	**1 mg/ kg IV/IO/IM IV/ IO max. dose 25 mg/ min. IM max. dose, 50 mg.**

Epinephrine 1:1000	**1 mg/ 1ml** **EpiPen Jr.® 0.15mg**	***Allergic Reaction moderate/ severe/ anaphylaxis:*** **0.01 mg/ kg IM (0.01ml/ kg). Max. dose of 0.3 mg (0.3 ml). EpiPen Jr®.; repeat as needed in 5 min.** ***Upper Airway/ Stridor:*** **5mg in 5ml via nebulizer**
Epinephrine 1:10, 000	**1 mg/ 10 ml**	***Anaphylaxis:*** **If no response to Epi 1:1000, give 0.01mg/ kg (0.1ml/kg) of 1:10,000 IV/ IO.** ***Bradycardia:*** **0.01mg/ kg (0.1ml/ kg) IV/ IO.** ***Cardiac Arrest:*** **0.01 mg/kg *(*0.1ml/ kg) IV/ IO**
Glucagon	**1 mg/ 1 ml**	**0.03 mg/kg IM (max. dose 1 mg)**
Ipratropium (Atrovent)	**500 mcg per unit dose (2.5 ml)**	**Unit dose**
Midazolam (Versed)	**2 mg/ 2ml** **IN: 5 mg/1 ml**	***Cardioversion:*** **0.05 mg/ kg slow IV/IO/IM. Max.initial dose 1mg** ***Seizure:*** **IV/ IO 0.1mg/ kg or IN/IM: 0.2mg/kg); Max initial dose 2mg. MR every 5 min. until seizures stop and/or max. dose of 5 mg is reached**
Morphine Sulfate	**10 mg/ 10 ml** **10 mg/ 1 ml**	***Pain Management*****: 0.1mg/ kg (0.1ml/ kg) slow IV/ IO/ IM. MR X 1 in 15 min. if IV/ IO or 30 min if IM.** ***Burns:*** **0.1 mg/kg IV/IO/IM in incremental doses up to 0.3mg/kg**
Naloxone (Narcan)	**2 mg/ 5 ml** **2mg/2ml**	***Suspected OD in non-neonate:*** **0.1 mg/ kg (0.25 ml/ kg) IV/ IO/ IM**
Ondansetron (Zofran)	**4 mg**	***Patients ≥ 4 yrs*****: 4 mg ODT/IM or slow IV over 30 seconds**
Sodium Bicarbonate	**50 mEq/ 50 ml**	***Tricyclic Antidepressant OD with significant dysrhythmias:*** **1mEq/ kg IV/ IO**

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.

PEDIATRIC MEDICATIONS
AUTHORIZED/ STANDARD INITIAL DOSE

DRUG	CONCENTRATION	STANDARD DOSE
Activated Charcoal	**25 GM/ bottle**	**1 gm/ kg PO; not to exceed 50 gm.**
Adenosine (Adenocard)	**6 mg/ 2 ml**	***Tachycardia Poor Perfusion:*** **0.1mg/kg; max. first dose 6mg. MR x 1 (double the dose); max. dose 12mg. (Rapid IV/IO push, each dose followed by 5 ml NS flush).** ***☎ Tachycardia Adequate Perfusion:*** **Dose as above after physician consult**
Albuterol	**2.5 mg/ 3 ml NS**	**2.5 mg/ 3ml NS**
Amiodarone	**150 mg/ 3 ml**	***Pulseless Arrest:*** **5 mg/ kg IV/ IO followed by or diluted in 20-30 ml NS. Maximum single dose 300 mg.** ***☎ Tachycardia with poor perfusion:*** **5mg/kg IV/IO over 20-60 min.**
Atropine	**1 mg/ 10 ml**	***Bradycardia:*** **0.02 mg/kg IV/ IO (minimum dose 0.1 mg.; single max. dose 1mg). MR X 1.** ***Organophosphate Poisoning:*** **0.5 mg/kg IV/IO; MR q 5-10 min. max. dose 4mg or until relief of symptoms**
Dextrose 10%	**D10%**	***ALOC (Neonate)*****: 2 ml/ kg IV/IO** ***ALOC (<2 years):*** **4ml/ kg IV/IO**
Dextrose 25%	**2.5 GM/ 10 ml**	***ALOC (< 2 years)*****: 2 ml/ kg IV/IO**
Dextrose 50%	**25 GM/ 50 ml**	***ALOC (> 2 years)*****: 1 ml/ kg IV/IO**
Diphenhydramine (Benadryl)	**50 mg/ 1 ml "or" 50 mg/ 10 ml**	**1 mg/ kg IV/IO/IM IV/ IO max. dose 25 mg/ min. IM max. dose, 50 mg.**

Epinephrine 1:1000	**1 mg/ 1ml** **EpiPen Jr.® 0.15mg**	***Allergic Reaction moderate/ severe/ anaphylaxis:*** **0.01 mg/ kg IM (0.01ml/ kg). Max. dose of 0.3 mg (0.3 ml). EpiPen Jr®.; repeat as needed in 5 min.** ***Upper Airway/ Stridor:*** **5mg in 5ml via nebulizer**
Epinephrine 1:10, 000	**1 mg/ 10 ml**	***Anaphylaxis:*** **If no response to Epi 1:1000, give 0.01mg/ kg (0.1ml/kg) of 1:10,000 IV/ IO.** ***Bradycardia:*** **0.01mg/ kg (0.1ml/kg) IV/ IO.** ***Cardiac Arrest:*** **0.01 mg/kg *(*0.1ml/kg) IV/ IO**
Glucagon	**1 mg/ 1 ml**	**0.03 mg/kg IM (max. dose 1 mg)**
Ipratropium (Atrovent)	**500 mcg per unit dose (2.5 ml)**	**Unit dose**
Midazolam (Versed)	**2 mg/ 2ml** **IN: 5 mg/1 ml**	***Cardioversion:*** **0.05 mg/kg slow IV/IO. Max.initial dose 1mg** ***Seizure (see policy for specifics):*** **IV/IO=0.05 mg/kg; MR q 3' (Max=5mg) IM=0.1mg/kg; MR in 10 minutes x1 IN= 0.2mg/kg; Max.= 5 mg.**
Morphine Sulfate	**10 mg/ 10 ml** **10 mg/ 1 ml**	***Pain Management*****: 0.1mg/ kg (0.1ml/ kg) slow IV/ IO/ IM. MR X 1 in 15 min. if IV/ IO or 30 min if IM.** ***Burns:*** **0.1 mg/kg IV/IO/IM in incremental doses up to 0.3mg/kg**
Naloxone (Narcan)	**2 mg/ 5 ml** **2mg/2ml**	***Suspected OD in non-neonate:*** **0.1 mg/ kg (0.25 ml/ kg) IV/ IO/ IM**
Ondansetron (Zofran)	**4 mg**	***Patients ≥ 4 yrs*****: 4 mg ODT/IM or slow IV over 30 seconds**
Sodium Bicarbonate	**50 mEq/ 50 ml**	***Tricyclic Antidepressant OD with significant dysrhythmias:*** **1mEq/ kg IV/ IO**

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.

ACUTE PULMONARY EDEMA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Acute onset of respiratory difficulty; associated with the following signs or symptoms:
  - Rales
  - Hypertension
  - Tachypnea
  - Diaphoresis
  - Chest discomfort
  - History of cardiac disease
  - Occasional wheezes
  - Near drowning

☎ **PHYSICIAN CONSULT**

- **Morphine Sulfate**

TREATMENT

- ALS RMC
- If tolerated, position patient in a sitting position, with legs dependent.
- 12-lead ECG if available
- If SBP > 100:
  - Apply CPAP
  - **Nitroglycerin** 0.4 mg SL; MR q 5 if SBP > 100
  - ☎ If no response, consider physician consult for **Morphine Sulfate** 2-5 mg IV
- If SBP < 100:
  - Consider **NS** 250-500 ml IV fluid challenge
  - Consider **Dopamine** 400 mg/250 NS (premix), begin infusion at 5 mcg/kg/min and increase to 10 mcg/kg/min, if BP <100. Monitor BP q 3-5 min

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed)		**60 drops/min = 60 ml/hr**	
Weight (kg)	**gtts/min to = 10 ug/kg/min**	**Weight (kg)**	**gtts/min to = 10 ug/kg/min**
35-44	3-15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATION

- Do not give **NTG** if patient has taken erectile dysfunction medication (ED) within the previous 24 hours for Levitra/Viagra or 36 hours for Cialis.

DOCUMENTATION- ESSENTIAL ELEMENTS

- SpO2

RELATED POLICIES/ PROCEDURES

- CPAP Procedure PR 13