

## ABBREVIATION LIST

ALOC	Altered Level of Consciousness
ABC's	Airway, Breathing, Circulation
ACLS	Advanced Cardiac Life Support
AED	Automatic External Defibrillator
AICD	Automatic Implantable Cardiac Defibrillator
ALS	Advanced Life Support
AMI	Acute Myocardial Infarction
AMS	Altered Mental Status
AMR	American Medical Response
ASA	Aspirin
AV	Atrial Ventricular
BHPC	Base Hospital Physician Contact
BLS	Basic Life Support
BP	Blood Pressure
bpm	Beats Per Minute
BSI	Body Substance Isolation
BVM	Bag Valve Mask
CaCl	Calcium Chloride
CC	Chief Complaint
C-spine	Cervical Spine
CHF	Congestive Heart Failure
COPD	Chronic Obstructive Pulmonary Edema
CPR	Cardiopulmonary Resuscitation
CVA	Cerebral Vascular Accident
D <sub>12.5%</sub> W	Dextrose 12.5% in water
D <sub>50%</sub> W	Dextrose 50% in water
DKA	Diabetic Ketoacidosis
DM	Diabetes Mellitus
DNR	Do Not Resuscitate
ED	Emergency Department
EKG	Electrocardiogram
EMS	Emergency Medical Services
Epi	Epinephrine
ET	Endotracheal Tube
ETT	Endotracheal Tube
gm	Gram
GCS	Glasgow Coma Scale
HazMat	Hazardous Materials
HEENT	Head, Eyes, Ears, Nose, Throat
HTN	Hypertension
IO	Interosseous
IM	Intramuscular
ITLS	International Trauma Life Support
IV	Intravenous
IVP	Intravenous Push (IV push prefed)
kg	Kilogram

J	Joule
LOC	Loss of Consciousness
Max	Maximum
mcg	Microgram
meds	Medication
mEq	Milliequivalent
min	Minute
mg	Milligram
MI	Myocardial Infarction
mL	Milliliter
MVC	Motor Vehicle Collision
NPA	Nasopharyngeal Airway
NPO	Nothing Per Mouth
NS	Normal Saline
NT	Nasal Tube
NTG	Nitroglycerine
NS	Normal Saline
O2	Oxygen
OB	Obstetrical
OD	Overdose
OPA	Oropharyngeal Airway
OPQRST	Onset, Provoked, Quality, Region and Radiation, Severity, Time
OTC	Over the Counter
PAC	Premature Atrial Contraction
PALS	Pediatric Advanced Life Support
PEA	Pulseless Electrical Activity
PHTLS	Prehospital Trauma Life Support
PID	Pelvic Inflammatory Disease
PO	By Mouth
Pt.	Patient
prn	As needed
PVC	Premature Ventricular Contraction
q	Every
QRS	Ventricular Conduction Complex
RMC	Routine Medical Care
R/O	Rule Out
RIVP	Rapid Intravenous Push (rapid IV push preferred)
SAD	Semi-Automatic Defibrillator
SBP	Systolic Blood Pressure
SL	Sublingual
SOB	Shortness of Breath
SIVP	Slow Intravenous Push
STEMI	ST Elevation Myocardial Infarction
SVT	Supraventricular Tachycardia
TIA	Transient Ischemic Attack
TBSA	Total Body Surface Area
TCA	Tricyclic Antidepressant
TCP	Transcutaneous Pacing

V-Fib	Ventricular Fibrillation
V-Tach	Ventricular Tachycardia
w/o	Without

**BIBLIOGRAPHY OF STANDARD TEXTS  
(Updated January 2009)**

Brady Paramedic Care : Principles and Practice, Volume 1-5: Introduction to Advanced Prehospital Care (2nd Edition) Prentice Hall; 2nd edition (March 7, 2005).

Advanced Cardiac Life Support (ACLS) Manual, American Heart Association, 2005

2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation, 2005; Vol 112, Number 24.

PHTLS: Basic and Advanced Prehospital Trauma Life Support Revised. Fourth Edition, 2003, Mosby, St. Louis.

Mosby's Paramedic Textbook (Revised Reprint) Second Edition, 2001, Mosby, St. Louis.

EMT Prehospital Care, 2004, Mosby, St. Louis.

Pediatric Advanced Life Support Manual (PALS): American Heart Association, 2005

Pediatric Education for Prehospital Professionals (PEPP), Second Edition (Paperback) American Academy of Pediatrics. Jones and Bartlett Publishers, Inc.; 2nd edition (June 1, 2005).

## HOW TO USE THESE PROTOCOLS

### Introduction

The use or possession of the protocol book does not exempt field personnel from the responsibility to know the information in the San Mateo Policy and Procedures Manual. This Protocol Book does not replace the Policy and Procedures Manual and is provided as a tool for their reference.

### Basic Life Support

Each Treatment Protocol section begins with Basic Life Support techniques and then proceeds to Advanced Life Support techniques. This is done to facilitate continuity of care between BLS and ALS personnel responding to the same patient. Start by instituting BLS measures, then proceed to ALS measures as dictated by your skill level and your patient assessment. Utilize good judgment and consider additional resources as needed.

### Routine Medical Care

A group of standard assessments and treatments, including but not limited to airway, breathing and circulation, and the use of routine monitoring devices. Routine Medical Care (RMC) is described in the Primary and Secondary Survey Sections. RMC is provided to every patient as guided by your assessment of the scene and the patient's condition.

### Care Outside of Protocol Guidelines

No set of protocols can cover all patient problems. When dealing with a situation not addressed by a Standard Treatment Protocol, utilize other pre-existing standard life support guidelines, including PHTLS, ACLS, PALS, and good medical judgment. We encourage the use of Base Physician contact in such events.

### Universal Precautions

Disease agents may be present in any body substance or fluid, and the presence of disease agents may or may not be known. Clinically healthy individuals may carry and be capable of transmitting these agents. Precautions with all patients shall include routine use of appropriate barrier precautions to prevent skin and mucous-membrane exposure when contact with blood or other body fluids is anticipated.

Prehospital personnel who are exposed to potentially infectious materials should immediately follow the reporting procedures set up by their agency. Notification should not routinely be made to the EMS Agency or to the San Mateo Department of Public Health.

Hospital emergency departments have specific requirements for managing exposure to body substances experienced by prehospital care personnel. Emergency departments are expected to actively assist prehospital personnel in

evaluating risk and recommending and/or providing appropriate prophylactic care when needed. Emergency responders are expected to identify the source patient to the hospital, and to comply with emergency department procedures (e.g. Royce log) when reporting potential exposure to infectious materials.

Prophylactic care recommendations for health care workers are found in the CDC September 30<sup>th</sup>, 2005 MMWR "Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposure to HIV and Recommendations for Postexposure Prophylaxis". Emergency departments are expected to follow these guidelines when managing prehospital exposure to potentially infectious substances.

**SAN MATEO COUNTY  
EMS AGENCY  
MISSION STATEMENT**

Emergency Medical Services (EMS) provides an integrated and coordinated system of services to ensure appropriate, timely, and respectful emergency medical care to meet the needs of patients and their families in San Mateo County.

## Pediatric Definitions

The definition of a pediatric patient for the purposes of San Mateo County EMS protocols is age less than 15 years or a length-based weight (per Broselow Tape) of 36 kg or less. Patients who are known to be less than 15 years of age but whose weight exceeds 36 kg may still be considered pediatric patients given their chronological age; however weights will then need to be estimated and adult dosages should be used.

The following are age classifications of pediatric patients that may assist prehospital personnel in their assessment and management of pediatric patients.

- Neonate: newborn up to first 28 days of life
- Infant: comprises neonatal period up to 12 months
- Toddler: 1-3 years
- Pre-school: 3-5 years
- School-age: 6-10 years
- Adolescent: 11-14 years

Children with Special Health Care Needs (CSHCN) are children who have any type of condition that may affect normal growth and development. This may include physical disability, developmental or learning disability, technologic dependency, and chronic illness. CSHCN may be any age. It is important to consider developmental age, rather than chronological age when working with this population.

### General Approach to Caring for the Pediatric Patients

- Allow the parent/caregiver to remain with the patient whenever possible.
- Adolescents may want to be examined without parent/caregiver. Honor their request if possible and provide them with privacy.
- Obtain history from both older children and adolescents and their parents/caregivers.
- Approach child slowly and calmly. Observe level of consciousness, activity level and respiratory rate/effort before touching.
- Compare assessment findings with parents'/caregivers' description of normal behavior.
- Be honest with the child and parent/caregiver. Explain all procedures to older children and adolescents directly.
- Allow child to hold a familiar security object. Use distraction techniques to assist in gaining cooperation.
- Acknowledge positive behaviors, no matter how small.
- Perform the most distressing components of the assessment last on infants and younger children.



## **Pediatric Age and or Weight Restrictions for Procedures and Protocols**

### **CPR**

- Neonatal resuscitation refers to the resuscitation of an infant *immediately after birth*
- “Infant” CPR techniques should be utilized for pediatric patients under 1 year of age
- “Child” CPR techniques should be utilized for pediatric patients ages 1-8 years

### **Endotracheal Intubation**

- Contraindicated in pediatric patients unless the following conditions exist:
- Unable to maintain a patent airway
- Unable to provide adequate oxygenation with BVM

### **Nasotracheal Intubation**

- Contraindicated in ages less than 12 years

### **Pediatric Intraosseous Infusion**

- Relatively contraindicated in ages 6 years or more unless patient is in cardiac arrest or decompensated shock and IV access cannot be rapidly established.

### **Needle Cricothyrotomy**

- Contraindicated in ages less than 3 years. For pediatric patients less than 36 kg, use a regulator with 20 PSI (if available) or use Bag valve mask ventilation.

### **Charcoal**

- Contraindicated in ages 2 years or less

### **Naloxone (Narcan)**

- Contraindicated in neonates of known or suspected narcotic-addicted mothers as it can induce withdrawal reactions

### **Multi-lumen airway device (Combitube)**

- Contraindicated in pediatric patients under 5 feet tall. The entire length of the Broselow Tape is 5 feet

**SAN MATEO COUNTY  
PRE-HOSPITAL CARE VALUES AND ETHICS STATEMENT**

*Developed by the Quality Leadership Council*

Our Emergency Medical Services community consists of a team of health care professionals representing many professions including EMT-1's, paramedics, firefighters, nurses, physicians, dispatchers, educators and administrators. This team is composed of all who care for our patients directly or indirectly through the continuum of the patients' pre-hospital emergency care. This Statement defines our vision, code of conduct, and ethical responsibilities and is beneficial in guiding our practice.

We affirm that:

- Our purpose is to provide the highest quality of pre-hospital emergency medical care, including transportation, for the residents and visitors of San Mateo County.
- Skilled pre-hospital medical care must be provided with compassion, respect, and regard for the human dignity to all persons, regardless of nationality, race, creed, gender, economic status, sexual orientation, age, nature of illness, or responsiveness to our care.
- We, as professionals, are accountable and responsible for providing pre-hospital medical care to the best of our ability and for accurately documenting such care.
- Patients who are competent have the right to determine the level of service and treatment that they shall receive, to either accept or refuse medical care; and to know the risks and the responsibility resulting from their decision.
- We respect the confidential nature of our work and respect the privacy of our patients and co-workers.
- We are committed to honesty, integrity, and truthfulness in our professional relationships with our patients and our colleagues in all matters pertaining to patient care.
- We uphold the highest standards of professional conduct when providing medical care and when interacting with other members of the pre-hospital community. These standards include maintenance of personal competence, confidentiality, and mutual respect.

- We are responsible for upholding the standards of our profession, including participating in activities that strengthen the EMS system as well as benefiting our community.
- We respect and obey the law and regulations of our profession and do not participate in any unethical activities. We do not let personal considerations such as economic gain or convenience influence our level of patient care.
- We refrain from conduct and activities that may impair our professional judgment and our ability to act competently.
- When differences of opinion or conflicts of interest occur our professional judgment should always be guided by the ultimate objective, which is providing the best possible care for our patient.
- We treat all members of the pre-hospital team with respect. Constructive comments are welcomed and encouraged. Gossip and other activities that are potentially destructive to the individual or the team are discouraged.

We affirm the elements of this statement as a measure of our commitment to excellence in fulfilling our professional obligations to those we serve.

**PATIENT ASSESSMENT  
ROUTINE MEDICAL CARE  
PRIMARY AND SECONDARY SURVEY**

APPROVED:            Gregory Gilbert,        EMS Medical Director  
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                         Barbara Pletz,         EMS Administrator

DATE: January 2009

The purpose of the primary survey (see page 3 for Secondary Format) is to identify and immediately correct life-threatening problems.

**Scene Size-Up/Global Assessment**

- Recognize hazards, ensure safety of scene, and secure a safe area for treatment
- Apply appropriate universal body substance isolation precautions
- Recognize hazards to patient and yourself and protect from further injury
- Identify number of patients and resources needed
  - Call for EMS, fire and police backup
  - Initiate Multicasualty Incident Protocol as needed
- Observe position of patient
- Determine mechanism of injury
- Plan strategy to protect evidence at potential crime scene

**General Impression:**

- Remain global and check for life threatening conditions
- Determine chief complaint or mechanism of injury
- Determine mental status; orientation to person, place, time, and event

**Airway:**

- Ensure open airway. (see Respiratory Distress Protocol as needed)
- Protect spine from unnecessary movement in patients at risk for spinal injury
- Look for evidence of other upper airway problems and potential obstructions
  - Vomitus
  - Bleeding
  - Loose or missing teeth
  - Dentures
  - Facial trauma
- Utilize any appropriate adjuncts (OPA or NPA) as indicated to maintain airway

**Breathing:**

- Look, listen and feel; assess ventilation and oxygenation
- Expose chest and observe chest wall movement if necessary

- Determine approximate rate and depth; assess character and quality
- Reassess mental status
- Interventions for inadequate ventilation and/or oxygenation:
  - Supplementary oxygen
  - Bag-Valve Mask
  - Intubation (endotracheal or nasal with confirmation of correct placement) after initial ventilation, if indicated
  - Note: Defibrillation should not be delayed for advanced airway procedures
- Assess for other life-threatening respiratory problems and treat as needed

**Circulation:**

- Check for pulse and begin CPR if necessary
- Note: CPR should be performed until ready for defibrillation
- Control life threatening hemorrhage with direct pressure
- Palpate radial pulse if appropriate
  - Determine absence or presence
  - Assess general quality (strong/weak)
  - Identify rate (slow, normal, or fast)
  - Regularity
- Assess skin for signs of hypoperfusion or hypoxia (capillary refill)
- Reassess mental status for signs of hypoperfusion
- Treat hypoperfusion if appropriate

**Level of Consciousness and Disabilities:**

- Determine need for c-spine stabilization
- Determine Glasgow Coma Scale without delay

**Expose, Examine, Evaluate:**

- In a situation with suspected life-threatening trauma mechanism, a Rapid Trauma Assessment should be performed
  - Expose and examine head, neck, and extremities
  - Treat any newly discovered life-threatening wounds as appropriate and begin transport in the potentially unstable or critical patient

## Secondary Survey

The secondary survey is the systematic assessment and complaint-focused, relevant physical examination of the patient. The secondary survey may be done concurrently with the patient history and should be performed after:

- The primary survey and initial treatment and stabilization of life-threatening airway, breathing and circulation difficulties
- Spinal immobilization as needed
- Beginning transport in the potentially unstable or critical patient
- A Rapid Trauma Assessment in the case of significant trauma
- Investigation of the chief complaint and associated complaints, signs or symptoms
- An initial set of vital signs
  - Pulse
  - Blood pressure
  - Respiration
  - Lung sounds
  - Cardiac rhythm (if indicated)
  - Consider orthostatic vital signs to assess volume status
  - Pulse oximetry when indicated
  - Assess for pain or discomfort. Use a 0-10 scale to rate and document the pain

Give initial treatment including oxygen, ventilate if indicated, control hemorrhage if needed, institute basic wound/fracture care, and establish IV access if indicated/capable.

The above set of assessment/treatments is referred to in these protocols as “Routine Medical Care”. This care should be provided to all patients regardless of presenting complaint. The purpose of the secondary survey is to identify problems that may not be immediately life or limb threatening but could increase patient morbidity and mortality. Exposure of the patient for examination may be reduced or modified as indicated due to environmental factors.

### History:

Optimally should be obtained directly from the patient: if language, culture, age-related, disability barriers or patient condition interferes, consult family members, significant others, scene bystanders or first responders. Check for advanced directives, medical alert bracelets and prescription bottles as appropriate. Be aware of the patient’s environment and issues such as domestic violence, child or elder abuse or neglect. If you are concerned, bring this to the attention of the receiving physician or nurse and file the appropriate report.

- Obtain chief complaint
- Allergies

- Medications
- Past medical history
- Ascertain recent medical history, admission to hospitals, reasons given, etc.
- Mechanism of injury
- See “Information Needed” section of each protocol for history relevant to specific patient complaints

#### **Head and Face:**

- Observe and palpate skull (anterior and posterior) for signs of trauma (contusions, abrasions, deformity, crepitus, or lacerations)
- Check eyes for: equality and responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses, prosthetic eyes
- Check nose and ears for foreign bodies, fluid, or blood
- Recheck mouth for potential airway obstructions (swelling, dentures, loose or avulsed teeth, vomitus, malocclusion, absent gag reflex) and odors, altered voice or speech patterns, and evidence of dehydration

#### **Neck:**

- Observe and palpate for signs of trauma, jugular venous distention, use of neck muscles for respiration, tracheal shift or deviation, cervical spine tenderness, stoma, and medical information medallions

#### **Chest:**

- Observe and palpate for signs of trauma, implanted devices (AICD or pacemaker), medication patches, chest wall movement, asymmetry, retractions and accessory muscle use
- Have a patient take a deep breath if possible and observe and palpate for signs of discomfort, asymmetry, and air leak from any wounds
- Auscultate breath sounds bilaterally

#### **Abdomen:**

- Observe and palpate for signs of trauma, scars, diaphragmatic breathing and distention
- Palpation should occur in all four quadrants taking special note of tenderness, masses and rigidity

#### **Pelvis/Genito-urinary:**

- Observe and palpate for signs of trauma or asymmetry, incontinence, priapism, blood at urinary meatus, or presence of any other abnormalities
- Gently palpate lateral pelvic rims and symphysis pubis for tenderness, crepitus, or instability
- Palpate bilateral femoral pulses when necessary

#### **Shoulders and Upper Extremities:**

- Observe and palpate for signs of trauma, asymmetry, skin color, capillary refill, edema, medical information bracelets, track marks, and equality of distal pulses
- Assess sensory and motor function as indicated

**Lower Extremities:**

- Observe and palpate for signs of trauma, asymmetry, skin color, capillary refill, track marks, edema, and equality of distal pulses
- Assess sensory and motor function as indicated

**Back:**

- Observe and palpate for trauma, asymmetry, spinal tenderness, and sacral edema

**Precautions and Comments:**

- Observation and palpation can be done while gathering patient's history
- A systematic approach will enable the rescuer to be rapid and thorough and not miss subtle findings that may become life-threatening
- Minimize scene time for critical trauma or medical patients; conduct secondary survey en route to the hospital.
- The Secondary Survey should ONLY be interrupted if the patient experiences airway, breathing, or circulatory deterioration requiring immediate intervention. Complete the examination before treating the other identified problems
- Reassessment of vital signs and other observations may be necessary, particularly in critical or rapidly changing patients. Changes and trends observed in the field are essential data to be documented and communicated to the receiving facility staff
- Prehospital medical personnel (paramedics and EMTs) can assist patient with self-administration of own medication if appropriate