
GENERAL INSTRUCTIONS FOR TREATMENT PROTOCOLS

The Treatment Protocols were developed by combining the Base Hospital Treatment Guidelines (BHTG) and the Standing Field Treatment Protocols (SFTP). The foundations for the revised guidelines are the paramedic scope of practice, medical research, and community standards in medical practice. A sign/symptom orientation to treating the prehospital care patient has been retained.

GENERAL INFORMATION

1. Patients with the same disease may have differing complaints and presentations, and conversely, patients with similar signs and symptoms may have very different diagnoses.
2. The Treatment Protocols guide treatment of "classic" presentations based on evidence-based practice. Base hospital physicians, mobile intensive care nurses (MICNs) and paramedics must utilize their medical knowledge, expertise and critical thinking to determine appropriate treatments for each patient.
3. The protocols were not developed with the intent that all therapies be done on scene. Transport of patients with treatment en route is left to the discretion of the base hospital and the field unit.

PROTOCOL FORMAT

1. Pharmacologic agents are in **bold** typeface.
2. Pediatric treatments are preceded by the Los Angeles County Emergency Department Approved for Pediatrics (EDAP) teddy bear symbol. 
3. Paramedics must measure all pediatric patients using a pediatric resuscitation tape and report the identified color code. The color is documented on the EMS Report Form in the patient weight section. Medication dosages are then determined by correlating the pediatric resuscitation tape color with the appropriate range on the Color Code Drug Doses/L.A. County Kids chart or the pediatric doses in the Drug Administration section.
4. The **Special Considerations** section has additional helpful information specific to the chief complaint and/or specific patient population.

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APPROVED: _____


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USING THE TREATMENT PROTOCOLS

Determine the patient's chief complaint or problem and then identify the protocol that best meets their needs.

1. Follow each treatment protocol in sequence as written.
2. If more than one treatment protocol applies, begin by using the one most closely associated with the patient's primary complaint. Utilize Reference No. 806.1, Procedures Prior to Base Contact, as indicated and refer to other treatment protocols as needed.
3. If the patient's status changes, a different treatment protocol might be needed. Select the new treatment protocol by taking into account the treatments already performed.
4. Not all the treatment protocols have an SFTP component. Some have only procedures that can be done under Ref. No. 806.1 and then base contact is required. Report the treatment protocol number or name when making base contact such as, "we have a crush injury and are utilizing Ref. No. 1277" or "we are using the crush injury treatment protocol".
5. All treatment protocols will be located in Section 1200 of the Prehospital Care Manual; therefore, each protocol will be identified by a four-digit number starting with "12". The 4-digit protocol number should be documented if the Base Hospital Report Form or EMS Report Form has adequate space. If the form does not allow for four digits, document the last three digits of the protocol.
6. The treatment protocols replace the former SFTPs; therefore, all protocols that have designations with an alpha character and a number (M4, T2, P1, etc.) have been deleted.
7. The SFTP portion of the treatment protocols can only be used by approved SFTP provider agencies.

CONTACT THE BASE HOSPITAL WHEN:

1. Indicated by the protocol
2. ALS intervention is performed and the provider agency is not an authorized SFTP provider
3. Additional or unlisted treatments are required
4. Consultation with the base hospital would be helpful
5. ST Elevation Myocardial Infarction (STEMI) notification and destination are required
6. Stroke notification, last known well date and time, and destination are required

Once base contact is made for medical control, all subsequent treatments listed in the protocol require a base hospital order.

Airway/Pulse Oximetry/Oxygen Therapy

Providing oxygen to emergency medical services (EMS) patients may be a lifesaving procedure. In particular, patients in acute respiratory distress should receive aggressive oxygenation, including patients who have a history of chronic lung disease.

Oxygen should be treated like any other drug and administered only when indicated for signs and/or symptoms of hypoxia such as: oxygen saturation (SpO₂) less than 94% with respiratory distress, altered mental status or changes in skin signs.

Basic airway maneuvers: establishing and maintaining an open airway with positioning, obstructed airway maneuvers, airway adjuncts and suctioning should be performed prior to advanced airway maneuvers: direct laryngoscopy for foreign body removal, endotracheal intubation or King LTs-D (Disposable Supraglottic Airway device).

1. If pulse oximetry is not available (BLS Unit) and the patient is in mild or moderate respiratory distress, provide oxygen (O₂) with nasal cannula at 2-6 liters per minute.
2. When available, use pulse oximetry and document reading to guide oxygen therapy. The desired oxygen saturation (SpO₂) for most non-critical patients is 94 – 98%.
3. Initiate oxygen O₂ therapy and titrate as follows:
 - a. Stable patients with mild hypoxia (SpO₂ less than 94%) – start O₂ with nasal cannula at 2-6 liters per minute or basic mask at 8-10 liters per minute
 - b. Patients unable to tolerate nasal cannula or basic mask – use blow-by technique using the following:
 - Adult – 10-15 liters per minute
 - Infant/Child – 6-10 liters per minute
 - Newborn – 5 liters per minute
 - c. Critical patients (those with impending or actual respiratory or cardiopulmonary arrest) – **O₂ should not be withheld in any critical patient**, start O₂ using the appropriate O₂ delivery system based on the patient's condition:
 - Non-rebreather mask – 12-15 liters per minute
 - BVM with reservoir – 15 liters per minute
 - Endotracheal tube – 15 liters per minute
 - King LTS-D airway – 15 liters per minute
 - CPAP – Refer to Ref. No. 1312



- d. Special Considerations:
- Chronic Obstructive Pulmonary Disease (COPD) – goal SpO₂ is 88 – 92%
 - Carbon Monoxide Poisoning – goal SpO₂ is 100%
 -  Newborn in need of positive-pressure ventilation – ventilate for 90 seconds with room air, if heart rate remains less than 100 beats per minute, start O₂ at 15 liters per minute
 - Traumatic Brain Injury - goal SpO₂ is 100%
4. Continue oxygen therapy until transfer of patient care.
5. Monitor and document the SpO₂, oxygen delivery system used and the liters per minute administered.
6. If suctioning is required, pre-oxygenate prior to suctioning. Maintain sterile procedures and do not suction longer than 10 seconds per occurrence.
7. Considerations for oropharyngeal airway:
- Unconscious
 - Absent gag reflex
8. Considerations for nasopharyngeal airway:
- Oropharyngeal airway cannot be inserted
 - Spontaneously breathing patients who require assistance in maintaining a patent airway
9. Considerations for bag-valve-mask (BVM) ventilation:
- Apnea or agonal respirations
 - Compromised ventilatory effort
10. Considerations for endotracheal intubation
Adults or Pediatrics 12 years of age or older **or** height greater than the length of the pediatric resuscitation tape with:
- Ineffective ventilation with BVM
 - Prolonged transport time
 - Unprotected airway
11. Considerations for rescue airway (King LTS-D)
- Unsuccessful attempts (maximum three attempts) at endotracheal intubation
 - Suspected difficult airway based on assessment and anatomical features
- Small adult: Size 3 for 12yrs of age or older **and** height between 4'-5'
Adult: Size 4 for 12yrs of age or older **and** height between 5'-6'
Large adult: Size 5 for 12yrs of age or older **and** height greater or equal to 6'
12. Verify endotracheal tube or rescue airway placement. Document the methods used for placement verification which should include a combination of:
- Capnography
 - End-tidal CO₂ detector
 - Bilateral lung sounds
 - Bilateral chest rise

- Absent gastric sounds
 - Esophageal detector device (EDD)
13. Continuously assess ventilation status and monitor waveform capnography of all patients requiring bag-valve-mask ventilation or advanced airway placement. Report capnography reading to the base hospital and document capnography reading as follows:
- Every five minutes during transport
 - After any patient movement
 - Upon transfer of care
 - Change in patient condition

Perfusion Status

Perfusion status is determined by a **combination** of parameters that includes heart rate, blood pressure, tissue color and mentation.

1. **Adequate Perfusion:** adequate circulation of blood through organs and tissues, manifested by normal pulse, tissue color, level of consciousness and blood pressure.
2. **Poor Perfusion:** Bradycardia, tachycardia, and/or altered mental status (includes anxiety, restlessness, lethargy, altered level of consciousness) associated with other symptoms of poor perfusion (hypotension, shortness of breath, chest pain and/or poor tissue color).
3. Base hospital contact should be initiated on hypotensive patients or if perfusion status is poor.

GUIDELINES FOR DETERMINATION OF POOR PERFUSION:

Adults:

1. Systolic blood pressure (SBP) less than 100mmHg, many medications are not administered if the SBP is less than 100mmHg.
2. Bradycardia, tachycardia, and/or altered mental status (includes anxiety, restlessness, lethargy, altered level of consciousness) associated with other symptoms of poor perfusion (hypotension, shortness of breath, chest pain and/or poor tissue color).
3. Poor pulse quality (weak/thready)
4. Increased respiratory effort and/or rate greater than 24 per minute in conjunction with other parameters
5. Delayed capillary refill time (greater than 2 seconds)
6. History of current chief complaint with potential for rapid deterioration



Pediatrics:

1. SBP less than 60mmHg in conjunction with other parameters
2. Heart rate less than 60bpm or greater than 180bpm in conjunction with other parameters
3. Labored respirations (retractions, grunting, nasal flaring) in conjunction with other parameters
4. Tissue color (i.e., pallor, cyanosis, mottling) is considered a sign of poor perfusion
5. Altered mental status (includes anxiety, restlessness, lethargy, or altered level of consciousness)
6. Delayed capillary refill time (greater than 2 seconds) in conjunction with other parameters
7. History of current chief complaint with potential for rapid deterioration

Venous Access

Venous access is a catheter inserted into a vein and attached to either an intravenous (IV) line of normal saline or a saline lock.

1. Saline lock: intermittent IV device used for patients with stable vital signs or patients who do not require volume replacement but may need limited IV medications
2. To keep open (TKO): slowest drip rate (approx. 30gtts/min); used for patients who might need fluid replacement or multiple intravenous medications
3. Fluid challenge: 10ml/kg rapid IV fluid administration with reassessment at 250ml increments



Pediatrics: 20ml/kg, reassess after initial fluid challenge

4. Fluid resuscitate: wide open intravenous fluid administration through large lumen tubing, preferably using two sites



Pediatrics: 20ml/kg, may repeat two times, reassess after each fluid challenge

5. Pre-existing vascular access device: paramedics may access external venous access devices for patients who are in extremis or if directed by the base hospital

ECG Documentation

Complete and accurate ECG documentation is essential for patient care and quality improvement purposes.

1. Document the ECG interpretation on the front of the EMS Report Form in the ECG Section. If a dysrhythmia is identified, a six-second strip must accompany the following:
 - a. Receiving Hospital copy for continuation of patient care.
 - b. Provider Agency copy as the official medical record.
2. The patient's name and/or sequence number should be written on the ECG strip. If only one segment of the ECG is available (i.e., run of V-tach), attach to the Receiving Hospital copy and, if possible, photocopy and attach to the Provider Agency copy.
2. 12-Lead ECG documentation: document the computer ECG interpretation of STEMI on the EMS Report Form with the time noted. Write the sequence number on the 12-lead tracing and distribute the copies as follows:
 - a. Hand the original directly to the nursing staff at the ST Elevation Myocardial Infarction Receiving Center (SRC).
 - b. Retain a copy per the provider agency's departmental policy.



Pediatric Patients

Separate pediatric guidelines were not developed for every sign and symptom. For guidelines not developed expressly for pediatrics, treatments specific to pediatrics are referenced under Drug Administration and/or Special Considerations and are preceded by a teddy bear symbol for easy identification.

Medication Orders and Administration

Base hospitals must provide complete medication orders to include:

1. Name of the medication
2. Dose
3. Route of administration
 - a. Intravenous (IV)
 - b. Intravenous Piggy-Back (IVPB)

- c. Intramuscular (IM)
 - d. Intranasal (IN)
 - e. Intraosseous (IO)
 - f. Per Os (PO)
 - g. Sublingual (SL)
4. Frequency of administration, if applicable

Paramedics are to repeat complete orders back to the base hospital.

***Standing Field Treatment Protocol (SFTP) Providers**

Additional treatments that can be performed by an approved SFTP provider prior to base contact are identified by “**Continue SFTP or Base Contact**”. All subsequent treatments may be performed until the paramedic reaches the notation “**Establish Base Contact**”. Once “**Establish Base Contact All**” appears, all ensuing treatments require an order from the base hospital.

The following dysrhythmias require establishing base hospital contact:

- Symptomatic Bradycardia
- Supraventricular Tachycardia (SVT)
- Ventricular Tachycardia (contact not required if utilizing Cardiac Arrest protocol and no pulse is present)
- Ventricular Fibrillation
- Second and Third Degree Heart Blocks
- Symptomatic Atrial Fibrillation/Atrial Flutter

If base hospital contact is made to obtain patient care orders, a full patient report will be given. If the patient meets trauma guidelines but is being transported to a non-trauma hospital, a full patient report must be given.

It is the expectation when providing receiving hospital report for patient notification only, the following minimal patient information will be provided:

All Patients

Provider Code/Unit #

Sequence Number

Location (if 9-1-1 transfer)

Chief complaint

Age and units

Gender

Level of distress

Name of the protocol (number optional)

Glasgow Coma Scale (GCS), if altered

Airway adjuncts utilized, if applicable

Destination/ETA

Additional information if:

Trauma Complaint

Mechanism of injury

Location of injuries/pertinent information (flail segment, rigid abdomen, evisceration, etc.)

Complete vital signs and GCS

Pediatric

Pediatric Weight (in kg from weight-based tape) and Color Code (if applicable)

STEMI

12-Lead ECG rhythm/interpretation if the 12-lead ECG indicates STEMI, to include quality of tracing

If mLAPSS (modified Los Angeles Stroke Screen) performed:

If positive/met

Last known well date and time

Blood glucose