SAN JOAQUIN COUNTY

EMERGENCY MEDICAL SERVICES AGENCY

Jared Bagwell, *Director*
Jessica K. Willett MD, *EMS Medical Director*

Thursday, November 12, 2026
0900 – 1100
Robert Cabral Agriculture Center
2101 E. Earhart Ave, Stockton CA 95206
Assembly Room 2

SJC EMS ADVISORY COMMITTEE

AGENDA

I. CALL TO ORDER/INTRODUCTIONS

II. APPROVAL OF PAST EMS ADVISORY COMMITTEE MEETING MINUTES:

a. Review and approval of August 13 2026, EMS Advisory Committee meeting minutes

III. OLD BUSINESS:

a. Paramedic Training Program — Update
b. CENCAL and Dispatch — Update
c. 2026-2027 EMS Projects — Update
    i. First Pass and CCU Integration
    ii. Transport to Alternative Destinations (TAD)
    iii. Mobile Crisis Response Integration
    iv. Learning Management System (LMS)
    v. Nurse Navigation System (NN)

IV. NEW BUSINESS:

a. New Medical Director — Info
b. Policies out for Stakeholder Comment — Discussion
    i. January 1
        1. Policy No. 2540, Paramedic Accreditation
        2. Policy No. 2320, Emergency Medical Technician Accreditation
        3. Policy No. 5103, Determination of Death in the Field
    ii. July 1
        1. Policy No. 1500, EMCC Bylaws and Transfer to Alternate Destinations
        2. Policy No. 2200, Public Safety First Aid (PSFA) Scope of Practice
        3. Policy No. 2360, EMT Scope of Practice
        4. Policy No. 2557, Adult Supraglottic Airway Device Performance Criteria
        5. Policy No. 3101, Emergency Ambulance Dispatch Requirements

6. Policy No. 3202, MPDS Use and Assignments
7. Policy No. 4101, EMS Response Vehicle Medication and Equipment
8. Policy No. 4448, Aircraft Utilization
9. Policy No. 4990, Nurse Navigation
10. Policy No. 5107, Restraint of Patients
11. Policy No. 5115, Selective Spinal Motion Restriction (SMR)
12. Policy No. 5502, BLS Scope of Practice Summary
13. Policy No. 5511, BLS Cardiac Arrest
14. Policy No. 5520, BLS Respiratory Distress
15. Policy No. 5543, BLS Nausea and Vomiting
16. Policy No. 5551, BLS Allergic Reaction
17. Policy No. 5552, BLS Bites and Stings
18. Policy No. 5586, BLS Pain Management
19. Policy No. 5700, ALS Protocols Version 2.0
    a. AGEN-05, Agitation/Behavioral Emergency
20. Policy No. 6302, EMS Patient Care Record Data Access and Submission

V. EMS SYSTEM PROGRAMS / REPORTS:

a. Ambulance Patient Offload Times (APOT) None
b. Specialty Care Systems Reports None
c. CQI None

VI. ANNOUNCEMENTS/GOOD OF THE ORDER:

a. Recognition letters for anniversary of November 29th, 2025 incident.

VII. NEXT MEETING:

a. The next regularly scheduled EMS Advisory Committee meeting is scheduled for February 11, 2027.

VIII. ADJOURNMENT

Attachments:

EMS Advisory Committee Meeting minutes – August 12, 2026 – Draft
Policies Open for Stakeholder Comment from October 30, 2026 to December 14, 2026 - Memo

EMS Advisory Committee

Thursday, August 13, 2026, at 0900

MINUTES

Members	Membership Representing	Present	Absent
Jared Bagwell (Co-Chair)	SJCEMSA	X	
Dr. Katherine Shafer (Co-Chair)	SJCEMSA	X	
Charla Barney	ED RN – Base Hospital - SJGH	X	
Cheryl Heaney-Ordez	ED RN – Receiving Hospital – St. Joseph's Medical Center	X	
Erica Lowry	ED RN – Receiving Hospital – Sutter Tracy Community Hospital	X	
Daniel Iniguez	EOA emergency ambulance provider – American Medical Response		X
Vanessa Herrero	EOA emergency ambulance provider – Escalon Community Ambulance	X	
John Andrews	EOA emergency ambulance provider – Manteca District Ambulance	X	
Pat Burns	EOA emergency ambulance provider – Ripon Fire Ambulance	X	
Lenard Gutierrez	Representative of an ALS fire dept./district – Stockton Fire Department	X	
Todd Rausser	Representative of a BLS fire dept./district – Liberty Fire	X	

Vince Stroup	Paramedic Non Fire-based ALS emergency ambulance providers – Manteca District Ambulance		**X**
Lucas Mejia	EMT Non Fire-based ALS emergency ambulance providers – Manteca District Ambulance		**X**
Eric DeHart	Fire-based emergency ambulance provider – Ripon Fire	**X**	
Rich Silva	Emergency Medical Dispatcher - VRECC		**X**
Leo Conn	Law Enforcement – San Joaquin County Sheriff		**X**
Michael Denu	Emergency Air Ambulance Provider - REACH	**x**	
Cassandra Lacondeguy	ED RN – Receiving Hospital- Dameron Hospital	**x**	
Alternate Members			
Raeann Pfann	San Joaquin General Hospital		**X**
Rebecca Luz	VRECC	**X**	
Kyle Naes	American Medical Response	**X**	
George McKelvie	Manteca District Ambulance		**X**
Jeremy Abundiz	Ripon Fire Department		**X**
Jennifer Flowers	Sutter Tracy Community Hosp.		**X**
Ryan Fauchner	Stockton Fire Department	**X**	
EMS Agency Staff	**Title**	**Present**	**Absent**
Christine Tualla	EMS Analyst	**X**	
Matthew Esposito	EMS Coordinator	**X**	
Paul Harper	Pre Hospital Care Coordinator		**X**
Nasir Khan	Specialty Care Coordinator	**X**	

Jeff Costa	Specialty Care Coordinator	X	
Leon Brown	EMS Analyst	X	
Sophany Bodine	EMS Analyst	X	
Anita Tenscher	Office Technician Coordinator		X
Guests			
Anna Trindade	Emergency Medical Dispatcher – SFD ECD	X	

Meeting called to order at 0905 by Co-Chair EMS Director Jared Bagwell.

I. CALL TO ORDER/ INTRODUCTIONS:

a. Committee member introductions

II. APPROVAL OF PAST EMS ADVISORY COMMITTEE MEETING MINUTES:

a. J. Bagwell asked committee to review minutes from November EMS Advisory Committee meeting. Chief Dehart moved to approve minutes from the last advisory committee meeting, J. Andrews seconded. No objections from Committee.

III. OLD BUSINESS:

a. Paramedic Training Program: Committee members were updated on progress of the SJCEMSA / Delta College paramedic training program partnership. SJCEMSA working on MOU and accreditations with Delta and will have the first cohort of 18 beginning Fall of 2027.
b. Emergency Ambulance and Dispatch Services: May 1st was Go-Live. Anna Trindade with brief update, operations are improving. IFT open market feedback requested by Jared. Cheryl Heaney stated there have been opportunities for improvement. Delays with few cases of pediatric transfers. Erica Lowry stated, “No issues since contracting with NorCal.”
c. 2026 EMS Projects
    i. First Pass Integration – Paul Harper with First Pass Update and Presentation.
        1. Power point presentation on the “Bundles of Care”, “Working on Hurdles with First Pass”, and “Not Recognizing RACE score documentation”. Jared added that more data is needed. Navigation dashboard presented. Flagged calls within First Pass explained by Paul Harper along with reporting dashboard.
    ii. Transport to Alternative Destination (TAD)
        1. Jared updated the committee that we are working on a policy. Be-Well Campus and sobering centers will play a vital role. State will need to

approve. Kyle Naes asked if alternative providers will be utilized, Jared stated only 911 system for now. Leonard Gutierrez asked if would be joined with Nurse Navigation

iii. Mobile Crisis Response Integration – update from Jared
iv. Learning Management System – early stages per Jared
v. Nurse Navigation System

IV. NEW BUSINESS:

a. New Membership and purpose of EMS Advisory: Jared elaborating on the purpose of EMS Advisory moving forward and the new memberships. Dr. Bains asked if other members from hospitals could attend, Jared responded that approval needed but should not be a problem.
b. EMS Annual Report: Booklets available – Jared asked if anyone has had a chance to review. Cheryl Heaney stated, "It's nice and appreciates the work."
c. New MD Recruitment: Jared provided update and hopes to have an announcement out to the system soon.
d. Maddy Fund Requests: Two requests were submitted per Jared, but did not meet requirements. John Andrews asked if an item needed to be on the agenda to be part of the requests. John Andrews requested the one-time fee for transition to SFD by JRUG could be covered by Maddy Funds. Ness Herrero asked to be reimbursed for radios and would like to know the process. Katrina Garcia asked if "Hand Heavy" can be considered. Paul Harper stated that there are limitations to "Hand Heavy".
e. Establish EOA Contract Compliance subcommittee: Stakeholders to review the compliance. Can be a subcommittee to EMS Advisory. Jared elaborated on purpose of committee – stakeholders and public involved in the decision making. John Mendoza asked if it would only be for Zone X and Zone Y.

V. EMS SYSTEM PROGRAM/REPORTS:

a. Ambulance Patient Offload Times (APOT): APOT Data presented for the 7 hospitals in San Joaquin County. Erica Lowry updated STCH's APOD lowering initiatives. Leon Brown explained the difference between etimes12 and eother19 times. Eother19 being hospital times.
b. Specialty Care Systems Update: Jeff presented the Stroke, STEMI, and CARES data. Nasir and Jeff presented trauma data. Discussions took place as Dr. Willett highlighted the effectiveness of the trauma system.
c. CQI

VI. ANNOUNCEMENTS/GOOD OF THE ORDER:

a. Ryan Fachner SFD, working on operations and improving dispatch.
b. Tiffany Cacho (OES) – September 12 Block Party. Planning for Active Shooter Exercise, Hazmat planning.
c. Cheryl Heaney, busy with ongoing construction

d. CenCal/AMR, Kyle Naes updated that new vents were purchased. CCT Full-time staffing is being worked out.
e. Erica Lowry, STCH internal expansion of their ED. MRI project to allow closer access. Disaster exercise with Lawrence Livermore Laboratories.
f. Liberty Fire Chief, requested EMS look into Narcan doses and LMAs for EMTs
g. Chief Gutierrez, staffing updates
h. John Mendoza, SSJCFA – new training center is open.
i. Anthony Nguyen Norcal, partnering with San Joaquin County General.
j. Dr. Herrero stated that St. Joseph's Medical Center does not currently have a hyperbolic chamber.

VII. NEXT MEETING:
VIII.

a. The next regularly scheduled meeting is scheduled for November 12, 2026

VIII. **ADJOURNMENT**:

Meeting adjourned 1045.

SAN JOAQUIN COUNTY

EMERGENCY MEDICAL SERVICES AGENCY

Jared Bagwell, *Director*
Jessica K. Willett, MD, *EMS Medical Director*

Memorandum

DATE: October 30, 2026

TO: All Prehospital Personnel and Providers
Base Hospital Personnel

FROM: Jessica K. Willett, M.D., EMS Medical Director
Jared Bagwell, EMS Director

SUBJ.: **Policies Open for Stakeholder Comment from October 30, 2026 to December 14, 2026**

The purpose of this memorandum is to advise system participants that the below policies will be open for stakeholder comment beginning on October 30, 2026 and ending on December 14, 2026.

I. SJCEMSA Policy No. 1500, EMCC Bylaws and Transfer to Alternate Destination:
   A. New policy for the creation of a Transfer to Alternate Destination program.
II. SJCEMSA Policy No. 2220, Public Safety-First Aid (PSFA) Scope of Practice:
   A. New policy outlining the scope of practice for PSFA providers.
III. SJCEMSA Policy No. 2320, Emergency Medical Technician Accreditation:
   A. New policy outlining EMT accreditation process so that EMT's can utilize i-gel airways.
IV. SJCEMSA Policy No. 2360, Emergency Medical Technician Scope of Practice:
   A. Removed section related to "EMT Enhanced Skills."
   B. Added i-gel Supraglottic airway.
   C. Added acetaminophen liquid PO, diphenhydramine liquid PO, ibuprofen liquid PO.
V. SJCEMSA Policy No. 2540, Paramedic Accreditation:
   A. Removed requirement to attend Policy Skills Review Course every two years and replaced it with annual mandatory update training.
   B. Added section II (7) with language regarding transfer of affiliation for accreditation.
VI. SJCEMSA Policy No. 2557, Adult Supraglottic Airway Device Performance Criteria:
   A. Added EMT to Performance Criteria section.

VII. SJCEMSA Policy No. 3101, Emergency Ambulance Dispatch Requirements:
   A. Added clarifying language to several sections.
   B. Added requirement to monitor advisory statuses and have the ability to notify field crews of system wide messages.

VIII. SJCEMSA Policy No 3202, MPDS Use and Assignments:
   A. Added clarifying language to several sections.
   B. Added language regarding calls initiating from the California Hospital Correctional facility.

IX. SJCEMSA Policy No. 4101, EMS Response Vehicle Medication and Equipment:
   A. Added “C-Collar” as an approved cervical spine stabilization device.
   B. Added acetaminophen liquid PO, diphenhydramine liquid PO, ibuprofen liquid PO.
   C. Added i-gels to BLS equipment list.

X. SJCEMSA Policy No. 4448, Aircraft Utilization:
   A. Added language that if two aircraft are available to dispatch, the geographically closer air ambulance will be dispatched.

XI. SJCEMSA Policy No. 4990, Nurse Navigation:
   A. New policy outlining new Nurse Navigation program.

XII. SJCEMSA Policy No. 5103, Determination of Death in the Field:
   A. Changed minimum time of 30 minutes to 20 minutes in medical cardiac arrest.
   B. Changed “May” to “shall in section III (B) so that base hospital contact must be made to determine death.
   C. Changed “May” to “Shall” in section IV (A) so that EMT must contact the base hospital to terminate resuscitative efforts.

XIII. SJCEMSA Policy No. 5107, Physical Restraint of Patients:
   A. New policy that replaces previous SJCEMSA Policy No. 5107, Physical Restraint of Patients.

XIV. SJCEMSA Policy No 5115, Spinal Motion Restriction:
   A. New policy that replaces previous SJCEMSA Policy No. 5115, Cervical Spine Stabilization.

XV. SJCEMSA Policy No. 5502, BLS Scope of Practice Summary:
   A. Removed reference to “Enhanced Skills EMTs”
   B. Added: Acetaminophen liquid PO, Diphenhydramine liquid PO, Ibuprofen liquid PO to EMT.
   C. Added i-Gels to EMT.

XVI. SJCEMSA Policy No. 5511, BLS Cardiac Arrest:
   A. Added insertion of i-gel after 8 minutes of MICR.

XVII. SJCEMSA Policy No. 5520, BLS Respiratory Distress:
   A. Added insertion of i-gel in patients with no gag reflex.

XVIII. SJCEMSA Policy No. 5543, BLS Nausea and Vomiting:
- A. Changed age contraindication from 18 to 13 years old.
- B. Removed pregnancy as a contraindication.

XIX. SJCEMSA Policy No. 5551, BLS Allergic Reaction – Anaphylaxis:
- A. Added diphenhydramine PO for mild and moderate reactions.

XX. SJCEMSA Policy No. 5552, BLS Bites and Stings:
- A. Added diphenhydramine PO for mild and moderate reactions.

XXI. SJCEMSA Policy No. 5586, BLS Pain Management:
- A. New policy allowing EMTs to treat pain with acetaminophen and ibuprofen.

XXII. SJCEMSA Policy No. 5700, Advanced Life Support Treatment Protocols V.2.0:
- A. AAIR-01 add language to not remove i-gel if inserted prior to ALS arrival.
- B. ACAR-03, Chest Pain of Suspected Cardiac Origin.
  1. Updated list of STEMI messages to include:
     - a. LP 15 - (***MEETS ST ELEVATION MI CRITERIA***).
     - b. LP 35 - (***ACUTE STEMI***), (***POSSIBLE ACUTE STEMI***), (**ACUTE MI/ISCHEMIA***).
     - c. Phillips Tempus - (***MEETS ST ELEVATION MI CRITERIA***), (***Consider Acute STEMI***), (***Acute MI/ Ischemia***).
     - d. Zoll X - (*** STEMI ***), (*** Acute ST Elevation Infarct***), (***Probable Acute ST Elevation Infarct***), (***Acute Infarct***).
- C. ACAR-04, Medical Cardiac Arrest.
  1. Changed Termination of Resuscitative (TOR) Efforts: From 30 minutes to 20 minutes.
- D. AGEN-05, Agitation/Behavioral Emergency.
  1. New protocol:
     - a. Mild to moderate agitation.
       - i. 5 mg Olanzapine PO.
     - b. Severe agitation.
       - i. 2.5 mg midazolam.
- E. Diluted epinephrine in all pediatric protocols has been removed and is now a base hospital order at 1mcg/kg.

XXIII. SJCEMSA Policy No. 6302, EMS Patient Care Record Data Access and Submission:
- A. Removed requirement to complete ePCR within 45 minutes.
- B. Added reference to being NEMSIS and CEMSIS compliant.
- C. Added language to include SJCEMSA required data points.

Please contact Matthew Esposito at mesposito@sjgov.org or at (209) 468-6818 for any questions or concerns.

TITLE: **PARAMEDIC ACCREDITATION** EMS Policy No. **2540**

PURPOSE:

The purpose of this policy is to establish procedures for issuing and maintaining Paramedic Accreditation by the San Joaquin County Emergency Medical Services Agency (SJCEMSA).

AUTHORITY:

Health and Safety Code, Division 2.5, Section 1797.220 & 1798 et seq.; CCR, Title 22, Div. 9, Ch. 3.3, §100090.08, §100091.02, and §100094.02.

DEFINITIONS: See EMS Policy No. 1100, POLICY DEFINITIONS.

POLICY:

I. Initial Accreditation:

A. To be accredited as a Paramedic in San Joaquin County, the applicant shall:
1. Be currently licensed as a paramedic in California.
2. Submit a completed paramedic accreditation application packet which includes but is not limited to:
   a) Verification of employment with an approved San Joaquin County ALS provider agency.
   b) Copies of the following:
      i. Valid state identification card (i.e., driver's license), valid federal identification (i.e., Military identification), valid U.S passport card.
      ii. Valid California paramedic license.
      iii. Current certification in cardiopulmonary resuscitation (CPR) for the Professional Rescuer or Healthcare Provider, from the American Heart Association, American Red Cross, or programs approved by SJCEMSA.
3. Submit a copy of their stipulation settlement agreement with the application if the applicant is on probation with the California EMS Authority or a local EMS Agency (LEMSA).
4. The applicant must disclose if he/she has been placed on a Performance or Personal Improvement Plan (PIP) or Clinical Education Assignment (CEA) by an employer or LEMSA as a paramedic in the past two years. If so, submit a letter from employer or LEMSA showing successful completion or status of the PIP or CEA. Failure to complete or remediate may be cause for denial of accreditation.
5. Pay the application fee established by the Board of Supervisors. All fees are non-refundable and non-transferable.

Approved: _____ _____
Medical Director EMS Administrator

6. Attend Paramedic Accreditation Orientation (PAO) course conducted by SJCEMSA within the last ~~6 (six)~~ 12 months.
    a) Pass with a score of 80% or higher an examination based upon the San Joaquin County EMS policies. (Refer to the Testing Procedures section of this policy for information on scores below 80%).

B. An applicant who has completed I. A., 1 through 6 may begin a supervised pre-accreditation field evaluation. The applicant shall work under the direct supervision of a SJCEMSA authorized paramedic preceptor or an SJCEMSA authorized paramedic accreditation officer.

C. All initial accrediting paramedics shall complete the ALS provider's field training program within thirty (30) days of completing the SJCEMSA PAO class and complete the SJCEMSA 2540B, Paramedic Accreditation & Skills Verification Task Form with assigned preceptor, accreditation officer, or ALS provider liaison.
    1. The ALS provider liaison shall verify successful completion prior to submission.
    2. The ALS provider shall notify SJCEMSA if the candidate does not complete the ALS provider's field training or 2540B Task Form successfully.
    3. ALS providers are authorized to use the SJCEMSA 2540A Form for the providers field training program.

D. Pre-accreditation applicant status may be maintained for a maximum of thirty (30) days as measured from the first field evaluation shift. If the applicant does not complete the accreditation process within thirty (30) days, the applicant shall re-start the accreditation process as an initial applicant. A paramedic may apply for accreditation three (3) times in a twelve (12) month period. At the discretion of the SJCEMSA this time frame may be extended following a written request from the applicant and an explanation as to why the accreditation process was not completed during the initial 30-day period.

E. To complete the accreditation process, the applicant shall submit the 2540B Task Form to SJCEMSA.

F. The SJCEMSA Medical Director will evaluate any applicant that fails to successfully complete the pre-accreditation process. The SJCEMSA Medical Director may recommend further evaluation, training, or denial of accreditation.

G. Paramedic accreditation shall expire on the same date as the State of California paramedic license.

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II Maintenance of Accreditation:

A. To maintain continuous accreditation in San Joaquin County, an accredited paramedic shall:
   1. Submit a complete paramedic accreditation application packet thirty (30) days prior to expiration of their current San Joaquin County SJCEMSA paramedic accreditation including verification of continued employment with an approved San Joaquin County ALS provider.
   2. Submit with the paramedic accreditation application packet all of the following:
      a. Valid state identification card (i.e., driver's license) valid federal identification (i.e., Military identification), or valid U.S. passport or passport card.
      b. Current California paramedic license.
      c. Current certification in cardiopulmonary resuscitation (CPR) for the Professional Rescuer or Healthcare Provider, from the American Heart Association, American Red Cross, or programs approved by the SJCEMSA.
   3. Submit a copy of their stipulation settlement agreement with the application if the applicant is on probation with the California EMS Authority or a local EMS Agency (LEMSA).
   4. The applicant must disclose if he/she has been placed on a Performance or Personal Improvement Plan (PIP) or Clinical Education Assignment (CEA) by an employer or Local EMS Agency (LEMSA) as a paramedic in the past two years. If so, submit a letter from employer or LEMSA showing successful completion or status of the PIP or CEA. Failure to successfully complete or remediate may be cause for~~to~~ den~~d~~denial~~y~~, suspension~~d~~, or ~~revok~~revocation of~~e~~ accreditation.
   ~~5. Complete a SJCEMSA policy and skills review (PSR) course, within six (6) months of expiration. This requirement is waived for paramedics that have successfully completed an initial SJCEMSA Paramedic Accreditation Orientation (PAO) course within the previous six (6) months or are members of the CQI Committee with an attendance rate of 80% or more within the last 12 months.~~
      ~~a) Pass with a score of 80% or higher an examination based upon the San Joaquin County EMS Policies. (Refer to the Testing section of this policy for information on scores below 80%).~~
   ~~6.~~5. Successfully complete mandatory training sessions as specified by the SJCEMSA. These sessions shall include annual training and testing on new or changing local EMS policies and procedures, and/or other topics pertinent to prehospital care.
   ~~7.~~6. An individual, who is a member of the Armed Forces of the United States,

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Medical Director EMS Administrator

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whose paramedic license and accreditation expires during the time the individual is on active duty or license expires less than six (6) months from the date the individual is deactivated/released from active duty, has an additional six (6) months to comply with the requirements of Section II. A 1-5 and the late fee (application fee) is waived upon compliance with the following provisions:

a) Provide documentation from the respective branch of the Armed Forces of the United States verifying the individual's dates of activation and deactivation/release from active duty.

7. Transfer of Affiliation for Accreditation - Transfer of ALS Affiliation for Accreditation is permissible if the Paramedic:
   a) Submits a letter of employment as a paramedic, from an approved San Joaquin County ALS provider, within ninety (90) calendar days of employment ceased with the previously approved San Joaquin County ALS provider.
   b) Meets eligibility for continuous accreditation.
   c) Accreditation ceases once a Paramedic is no longer working for an ALS provider. If the Paramedic transfers from one (1) approved San Joaquin County ALS provider to another, and the transfer is within ninety (90) days of separation, reaccreditation fees will be waived. Anytime a Paramedic begins work with another ALS provider, the Paramedic, and the provider shall notify SJCEMSA.
   d) ALS provider shall notify SJCEMSA within ten (10) Calander days of a paramedics separation of employment/affiliation.

III. Lapsed Accreditation:

A. For an individual whose accreditation has lapsed to be eligible for reinstatement, the following applies:
   1. For a lapse of less than six (6) months the paramedic shall pay the accreditation fee and meet all requirements listed in Section II. (Maintenance of Accreditation).
   2. For a lapse of more than six (6) months the paramedic shall complete the initial accreditation process listed in I. (Initial Accreditation).

IV. Falsification of any of the accreditation/reaccreditation documents may result in denial of accreditation and may result in referral to the EMS Authority for disciplinary action.

V. CQI Process:

Approved: _____ _____
Medical Director EMS Administrator

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A. If through the CQI process the employer or SJCEMSA Medical Director determines that a paramedic needs additional training, observation or testing, the employer, or the SJCEMSA Medical Director may create a specific and targeted program of remediation based upon the identified need of the paramedic. If there is disagreement between the employer and the SJCEMSA Medical Director, the decision of the SJCEMSA Medical Director shall prevail.
B. The SJCEMSA Medical Director may suspend or revoke accreditation if the paramedic does not maintain current licensure or meet local accreditation requirements and the following requirements are met:
   1. The paramedic has been granted due process in accordance with local policies and procedures.
   ~~2.~~ The local policies and procedures provide a process for appeal or reconsideration.
   ~~3.~~
   ~~4.~~2.

VI. Testing:

A. An applicant is allowed to take the PAO~~/PSR~~ course examination a maximum of three (3) times per year:
   1. First Attempt: During initial PAO course ~~or PSR course~~.
   2. Second Attempt: May be scheduled after a one (1) week waiting period from the initial examination.
   3. Third Attempt: May be scheduled following completion of four (4) hours of remedial training pertaining to the SJCEMSA Policies.
   4. If the applicant's accreditation lapses because of repeated attempts to pass the exam, the requirement listed in Section III shall apply. Additionally, after three (3) failed attempts the SJCEMSA Medical Director may suspend or revoke the applicant's accreditation until such time that the applicant passes the examination.
B. It is a misdemeanor for any person to knowingly and willfully engage in conduct that subverts or attempts to subvert any certification or licensing examination or the administration of an examination, conducted pursuant to the Health and Safety Code, Division 2.5, including any accreditation or authorization examination process.
C. The penalties provided for in Health and Safety Code Section 1798.207 are not exclusive remedies and shall not preclude remedies provided pursuant to any other provision of law.
D. In addition to any other penalties, a person found guilty of violating Health and Safety Code Section 1798.207 shall be liable for the actual damages sustained by the agency administering the examination not to exceed ten thousand dollars

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($10,000) and the costs of litigation.

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TITLE: **EMERGENCY MEDICAL TECHNICIAN ACCREDITATION** EMS Policy No. **2320**

PURPOSE:

The purpose of this policy is to establish procedures for issuing and maintaining Emergency Medical Technician (EMT) Accreditation to current active certified EMTs employed with an approved San Joaquin County Emergency Medical Services Agency (SJCEMSA) provider within the jurisdiction of SJCEMSA.

AUTHORITY:

Health and Safety Code, Division 2.5, Section 1797.220 & 1798 et seq.; CCR, Title 22, Div. 9, Ch. 3.1, §100066.02.

DEFINITIONS: See EMS Policy No. 1100, POLICY DEFINITIONS.

POLICY:

I. Initial Accreditation:

A. To be accredited as a EMT in San Joaquin County, the applicant shall:
1. Hold a current and valid EMT Certification in California.
2. Submit a completed EMT accreditation application packet which includes but is not limited to:
   a) Verification of employment with an approved San Joaquin County ALS or BLS provider agency.
   b) Copies of the following:
      i. Valid state identification card (i.e., driver's license), valid federal identification (i.e., Military identification), valid U.S passport card.
      ii. Current and valid California EMT Certification.
      iii. SJCEMSA EMT Optional Skills Training course completion certificate.
      iv. I-Gel Supraglottic Airway Device Skills Competency Verification Form
3. If applicable, submit a copy of any current stipulation settlement agreement with the application if the applicants EMT Certification is on probation with a local EMS Agency (LEMSA).
4. The applicant must disclose if he/she has been placed on a Performance or Personal Improvement Plan (PIP) or Clinical Education Assignment (CEA) by an employer or LEMSA as an EMT in the past two years. If so, submit a letter from employer or LEMSA showing successful completion or status of the PIP or CEA. Failure to complete or remediate may be cause for denial of accreditation.
5. Pay the application fee established by the Board of Supervisors. All fees

Approved: _____ _____
Medical Director EMS Administrator

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are non-refundable and non-transferable.

6. Attend and successfully complete an EMT Optional Skills course conducted by SJCEMSA within the last 6 (six) months which includes but is not limited to:
    a) Pass with a score of 80% or higher an examination based upon the San Joaquin County EMS policies. (Refer to the Testing Procedures section of this policy for information on scores below 80%).
    v. Successfully pass a verification examination of the I-Gel Supraglottic Airway Device Skills Competency.

B. The SJCEMSA Medical Director will evaluate any applicant that fails to successfully complete the accreditation process. The SJCEMSA Medical Director may recommend further evaluation, training, or denial of accreditation.

C. EMT Accreditation shall expire on the same date as the State of California EMT Certification.

II Maintenance of Accreditation:

A. To maintain continuous accreditation in San Joaquin County, an accredited EMT shall:
    1. Submit a complete EMT Accreditation application packet thirty (30) days prior to expiration of their current San Joaquin County SJCEMSA EMT accreditation including verification of continued employment with an approved San Joaquin County ALS or BLS provider.
    2. Submit with the EMT accreditation application packet all of the following:
        a. Valid state identification card (i.e., driver's license) valid federal identification (i.e., Military identification), or valid U.S. passport or passport card.
        b. Current and valid California EMT Certification.
        c. I-Gel Supraglottic Airway Device Skills Competency Verification Form completed within the last two (2) years and verified by someone that has been designated by SJCEMSA Policy 2011, Skills Competency Verification Process.
    3. If applicable, submit a copy of their stipulation settlement agreement with the application if the applicant is on probation with the California EMS Authority or a local EMS Agency (LEMSA).
    4. The applicant must disclose if he/she has been placed on a Performance or Personal Improvement Plan (PIP) or Clinical Education Assignment (CEA) by an employer or Local EMS Agency (LEMSA) as a EMT in the past two years. If so, submit a letter from employer or LEMSA showing successful

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completion or status of the PIP or CEA. Failure to successfully complete or remediate may be cause to deny, suspend, or revoke accreditation.

5. An individual, who is a member of the Armed Forces of the United States, whose EMT Certification and accreditation expires during the time the individual is on active duty or license expires less than six (6) months from the date the individual is deactivated/released from active duty, has an additional six (6) months to comply with the requirements of Section II. A 1-4 and the late fee (application fee) is waived upon compliance with the following provisions:
    a) Provide documentation from the respective branch of the Armed Forces of the United States verifying the individual's dates of activation and deactivation/release from active duty.

III. Lapsed Accreditation:

A. For an individual whose accreditation has lapsed to be eligible for reinstatement, the following applies:
    1. For a lapse of less than six (6) months the EMT shall pay the accreditation fee and meet all requirements listed in Section II. (Maintenance of Accreditation).
    2. For a lapse of more than six (6) months the EMT shall complete the initial accreditation process listed in I. (Initial Accreditation).

IV. Falsification of any of the accreditation/reaccreditation documents may result in denial of accreditation and may result in disciplinary action.

V. CQI Process:

A. If through the CQI process the employer or SJCEMSA Medical Director determines that an EMT needs additional training, observation or testing, the employer, or the SJCEMSA Medical Director may create a specific and targeted program of remediation based upon the identified need of the EMT. If there is disagreement between the employer and the SJCEMSA Medical Director, the decision of the SJCEMSA Medical Director shall prevail.
B. The SJCEMSA Medical Director may suspend or revoke accreditation if the EMT does not maintain current EMT Certification or meet local accreditation requirements and the following requirements are met:
    1. The EMT has been granted due process in accordance with local policies and procedures.
    2. The local policies and procedures provide a process for appeal or reconsideration.

VI. Testing:

A. An applicant is allowed to take the EMT Optional Skills course examination a maximum of three (3) times per year:
   1. First Attempt: During the initial EMT Optional Skills course.
   2. Second Attempt: May be scheduled after a one (1) week waiting period from the initial examination.
   3. Third Attempt: May be scheduled following completion of four (4) hours of remedial training pertaining to the SJCEMSA Policies.
   4. If the applicant's accreditation lapses because of repeated attempts to pass the exam, the requirement listed in Section III shall apply. Additionally, after three (3) failed attempts the SJCEMSA Medical Director may suspend or revoke the applicant's accreditation until such time that the applicant passes the examination.

B. It is a misdemeanor for any person to knowingly and willfully engage in conduct that subverts or attempts to subvert any certification or licensing examination or the administration of an examination, conducted pursuant to the Health and Safety Code, Division 2.5, including any accreditation or authorization examination process.

C. The penalties provided for in Health and Safety Code Section 1798.207 are not exclusive remedies and shall not preclude remedies provided pursuant to any other provision of law.

D. In addition to any other penalties, a person found guilty of violating Health and Safety Code Section 1798.207 shall be liable for the actual damages sustained by the agency administering the examination not to exceed ten thousand dollars ($10,000) and the costs of litigation.

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TITLE: **DETERMINATION OF DEATH IN THE FIELD** EMS Policy No. **5103**

PURPOSE:

The purpose of this policy is to provide EMS personnel, base hospital physicians, and MICNs with direction for determining death in the field.

AUTHORITY:

Health and Safety Code, Division 2.5, Section 1797.220 & 1798 et seq.

POLICY:

I. All EMS personnel shall conduct an initial patient assessment and either initiate treatment or make a determination of obvious death.

II. Obvious Death:

A. Obvious death is defined as a patient exhibiting apnea and pulselessness accompanied by one or more of the following conditions:
   1. Decomposition of tissue.
   2. Decapitation.
   3. Rigor mortis characterized by rigidity or stiffening of muscular tissues and joints in the body usually appearing in the head, face, and neck muscles.
   4. Postmortem lividity the pooling of venous blood in dependent body parts.
   5. Incineration of the torso and/or head.
   6. Massive crush injury and/or penetrating injury with evisceration or total destruction of the heart, lung, and/or brain.
   7. Gross dismemberment of the torso.
   8. Submerged underwater for greater than sixty (60) minutes.
   9. Presence of a valid Do-Not-Resuscitate (DNR) or POLST form.

B. If a patient meets criteria for obvious death upon an initial assessment, EMS personnel shall not initiate resuscitative measures including cardiopulmonary resuscitation (CPR) on the patient.

C. EMS personnel are not required to use a cardiac monitor (i.e. “run a strip”) to confirm obvious death.

D. Non-transport EMS personnel shall cancel a responding ambulance if obvious death is determined prior to arrival of the ambulance unless the responding ambulance is needed for another patient or patients on scene.

III. Medical Cardiac Arrest without Obvious Death:

A. A medical patient in cardiopulmonary arrest without obvious death shall receive ~~thirty~~ twenty (20~~30~~) minutes of resuscitative efforts including eight (8) minutes of

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MICR followed with ALS appropriate intervention for the patient's ECG rhythm as specified in ALS treatment protocols.

B. A paramedic shall ~~may~~ request a determination of death from a base hospital after ~~thirty~~ twenty (~~30~~20) minutes of resuscitation without a return of spontaneous cardiac circulation:~~.~~
   1. A base hospital MICN may approve a request for determination of death if all the following conditions are met:
      a. EMS personnel did not administer any defibrillation shocks.
      b. Cardiac arrest was unwitnessed by EMS personnel.
      c. Patient remains in ~~-~~asystole.
   2. A base hospital physician may approve a request for determination of death when the conditions listed in section IV. B. 1. above are not met.

C. If a request for determination of death is denied resuscitative efforts shall be continued with the patient transported to the closest receiving hospital without delay.

IV. Determination of Non-Obvious Death by Basic Life Support (BLS) personnel:

A. In the absence of ALS personnel, the attending emergency medical technician (EMT) shall ~~may~~ make base hospital physician contact to request a determination of death from a base hospital physician following ~~thirty~~ twenty (~~30~~20) minutes of resuscitative measures and no indication for defibrillation from an Automated External Defibrillator (AED).

V. Actions Following a Determination of Death:

A. EMS personnel shall notify the San Joaquin County Medical Examiner and the law enforcement agency with jurisdiction following a determination of death in the field.
B. EMS personnel may not move or disturb a dead body until disposition has been made by law enforcement or medical examiner representative.
C. EMS personnel shall leave in place all invasive therapeutic modalities initiated during the resuscitation for the medical examiner review. These modalities may include but are not limited to advanced and basic airways, intravenous catheters, cardiac electrodes, etc.
D. EMS personnel shall not transport dead bodies by ambulance except in the extremely rare occurrence that a patient is determined to be dead during transport. In such situations, EMS personnel shall deliver the body to the intended hospital.
E. If family or significant other request resuscitative efforts for a patient with obvious death ALS and BLS personnel shall decline the request to initiate

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resuscitation and provide an explanation, reassurance and support to the family or significant other.

F. EMS personnel are not required to remain on scene after notification of the Medical Examiner and law enforcement.

VI. EMS personnel shall utilize START Triage guidelines in determining death at the scene of multi-casualty incidents. As EMS resources become available, patients initially determined to be dead per START Triage may be re-assessed.

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TITLE: **Transport to Alternate Destination (TAD)**
Emergency Medical Care Committee (EMCC) Bylaws EMS Policy No. **1500**

PURPOSE:

The Emergency Medical Care Committee ("EMCC") shall act in an advisory capacity to the Board of Supervisors (BOS) and to the Local Emergency Medical (EMS) Agency ("LEMSA") on all matters relating to Transport to Alternate Destination ("TAD") and as directed by the EMS Director or Board of Supervisors.

AUTHORITY:

California Health and Safety Code - Division 2.5, Chapter 4, Article 3, Sections 1797.270 -1797.276

DEFINITIONS: See SJCEMSA Policy Definitions.

BYLAWS:

I. EMCC shall at least annually, review and report to the Board of Supervisors and LEMSA its observations and recommendations relative to its review of the TAD program in San Joaquin County. This review will include, but not be limited to program utilization, policies and protocols related to TAD, and TAD continuous quality improvement in San Joaquin County.

II. The Membership for the EMCC for San Joaquin County shall be recommended by the EMS Director and approved by the Board of Supervisors. Membership shall consist of:
   - A. One emergency medical physician practicing emergency medicine within the jurisdiction of the LEMSA.
   - B. One registered nurse practicing within the jurisdiction of the LEMSA.
   - C. One licensed paramedic practicing within the jurisdiction of LEMSA. (Whenever possible, the paramedic shall be employed by a public service agency.)
   - D. One acute care hospital representative with an emergency department that operates within the jurisdiction of the LEMSA.
   - E. Additional advisory members in the field's public health, social work, hospice, substance use disorder detoxification and recovery, or mental health practicing within the jurisdiction of the LEMSA.
     1. One mental health provider (LCSW, LMFT, PsyD, or PHD).
     2. One substance abuse and recovery provider.
   - F. One EOA Leadership Representative (transport).
   - G. One County Fire Chief Designated Representative (non-transport).
   - H. One Law Enforcement Chief Designated Representative.

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I. One Emergency Ambulance Dispatch Representative.
J. Two public members selected by BOS who have no pecuniary or professional interest in emergency medical care or behavioral health, and whose primary residence is in San Joaquin County.

The members shall be appointed by the Board of Supervisors for terms of two (2) years each, not to exceed three (3) consecutive terms.

III. Ex Officio members:
A. EMS Director.
B. EMS Medical Director.
C. EMS Pre-Hospital Care Coordinator.
D. County Director of Health Care Services.
E. County Director of Behavioral Health Services.
F. County Chief Mental Health Clinician - Mobile Crisis Services
G. Health Care Services Administrative Assistant (*TAD EMCC Secretary*)

IV. EMCC will prepare an annual report for the Board of Supervisors.

V. Members in good standing should attend at least seventy-five percent (75%) of the actual meetings held during any consecutive twenty-four (24) month period. Members failing to maintain the minimum attendance requirements may be removed from membership of the committee by majority vote. The chairperson of EMCC will notify the Clerk of the Board of Supervisors of the vacancy. The EMS Director will be asked to recommend a replacement for the vacant position. Resignation from EMCC must be submitted in writing to the Chair of EMCC, who shall notify the EMS Director and Board of Supervisors.

VI. The officers of EMCC shall be the Chair, a Vice-Chair, and a Secretary.
A. Chair and Vice Chair shall be elected by the EMCC for two (2) year terms.
B. The Health Care Services Administrative Assistant (non-voting) shall serve as the EMCC Secretary.
C. Officers may be elected to consecutive terms.
D. Officers shall preside over meetings of EMCC.

VII. A quorum for EMCC shall consist of half the current membership (not including vacant positions) plus one.

VIII. Sub-committees shall be appointed by a quorum of EMCC. At least one member of each sub-committee shall be a member of EMCC. A Sub-committee Chair shall be appointed by the Chair of EMCC annually and may be appointed for

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consecutive terms. Additional subcommittees or task forces may be appointed at any time as deemed appropriate by EMCC.

IX. EMCC shall conduct regularly scheduled noticed meetings. Additional meetings of EMCC shall be called as necessary by the Chair or Vice-Chair, in the absence of the Chair. Subcommittees shall meet as necessary to accomplish the task assigned.

X. All meetings will be held in an open manner in accordance with Government Code Sections 54950-54961 (Brown Act). A simple majority of those present, given a quorum, are needed to pass a motion unless otherwise specified in EMCC By-Laws. By a majority vote of the total current membership, the committee may amend its By-Laws, except for the composition of membership which shall only be modified by the Board of Supervisors. The Chair, with the consent of the majority of EMCC, may establish rules of order for committee meetings during their term.

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TITLE: **PUBLIC SAFETY FIRST AID (PSFA) SCOPE OF PRACTICE** EMS POLICY No.2200

PURPOSE:

The purpose of this policy is to establish and authorize the Public Safety First Aid (PSFA) scope of practice including optional skills in San Joaquin County.

AUTHORITY:

California Health and Safety Code, Division 2.5, § 1797.176, 1797.183 & 1797.204, California Code of Regulations, Title 22, Division 9, Chapter 2.3.

DEFINITIONS: See SJCEMSA Policy Definitions

POLICY:

I. Public Safety First Aid (PSFA) Scope of Practice:
   a. PSFA providers with a current and valid agreement with San Joaquin County EMS Agency (SJCEMSA) may function under this policy.
   b. A PSFA provider, after completion of training and demonstration of competency to the satisfaction of the approved training provider for each skill listed in this section, is authorized to perform the following medical care while at the scene of an emergency or while assisting other EMS personnel during transport:
      i. Evaluate the ill and injured.
      ii. Render basic life support, and emergency medical care to patients.
      iii. Perform cardiopulmonary resuscitation (CPR).
      iv. Perform automated external defibrillation (AED).
      v. Provide treatment for shock.
      vi. Use the following techniques to support airway and breathing:
         1. Perform manual maneuvers to maintain a patent airway, including head-tilt/chin-lift and/or jaw thrust.
         2. Manual methods to remove an airway obstruction in adults, children, and infants that are visible in the oropharynx.
         3. Place patients in the recovery position.
      vii. Perform the following during emergency care:
         1. Spinal stabilization and motion restriction;
         2. Splinting of extremities (not to include the use of traction splinting devices);
         3. Emergency eye irrigation using sterile water or normal saline;
         4. Assist with administration of oral glucose;

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5. Assist patients with administration of physician-prescribed epinephrine devices and naloxone;
6. Assist in emergency childbirth;
7. Hemorrhage control using direct pressure, pressure bandages, principles of pressure points, approved hemostatic dressings and tourniquets;
8. Chest seals and dressings;
9. Simple decontamination techniques and use of decontamination equipment.
10. Care for amputated body parts;
11. Provide basic wound care.

II. PSFA Optional Scope:

a. In addition to the activities authorized in section I of this policy, PSFA personnel operating in their official capacity with a PSFA agency and authorized by SJCEMSA may use any or all the following optional skills:

i. Administration of supplemental oxygen therapy using a non-rebreather face mask or nasal cannula, and bag-valve-mask ventilation in accordance with SJCEMSA policy No. 5503, BLS Routine Medical Care and SJCEMSA policy No. 5520, BLS Respiratory Distress.

ii. Utilization of oropharyngeal airways (OPAs) and nasopharyngeal airways (NPAs) in accordance with SJCEMSA policy No. 5503, BLS Routine Medical Care and SJCEMSA policy No. 5520, BLS Respiratory Distress

iii. Administration of epinephrine by auto-injector for suspected anaphylaxis in accordance with SJCEMSA policy No. 5551, BLS Allergic Reaction and Anaphylaxis.

iv. Administration of IN naloxone in accordance with SJCEMSA policy No. 5542, BLS Poisoning and Overdose.

III. Competency Demonstration.

a. In accordance with CA Title 22, Division 9, Chapter 2.3, Article 4, optional skills approved by the SJCEMSA Medical Director must include a competency-based skills exam for each optional skill, conducted at least once every two years.

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b. Records of skill competency shall be maintained by the provider and be made available on request of SJCEMSA.

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SAN JOAQUIN COUNTY
EMERGENCY MEDICAL SERVICES AGENCY

TITLE: **Emergency Medical Technician Scope of Practice** EMS Policy No. **2360**

PURPOSE:

The purpose of this policy is to define the scope of practice of San Joaquin County EMS Agency for emergency medical technicians operating within the San Joaquin County EMS System.

AUTHORITY:

Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 3.22, Sections 100006~~25~~.01, 100006.01~~3, 100064~~

DEFINITIONS: See SJCEMSA Definitions Policy

~~"Accredited EMT" means an EMT that is appropriately trained, meets competency standards, and has been accredited by the SJCEMSA to perform the optional EMT scope of practice skill(s) specified in Title 22, Chapter 2, Section 100064 approved by SJCEMSA, if any.~~
~~"Advanced life support" or "ALS" means those activities in the approved SJCEMSA paramedic scope of practice.~~
~~"Basic life support" or "BLS" means emergency first aid and cardiopulmonary resuscitation procedures, which, as a minimum, include recognizing respiratory and cardiac arrest and starting the proper application of cardiopulmonary resuscitation to maintain life without invasive techniques until the patient may be transported or until advanced life support is available.~~
~~"Emergency Medical Technician" or "EMT" means a person who has successfully completed an EMT course that meets the requirements of California Code of Regulations, Title 22, Division 9, Chapter 2, has passed all required tests, and has a valid certificate issued by a California EMT certifying entity.~~
~~"Enhanced Skills EMT" means an EMT that is appropriately trained, meets competency standards, and is functioning as part of the organized San Joaquin County EMS System.~~
~~"Limited advanced life support" or "LALS" means those activities in the approved SJCEMSA Advanced EMT scope of practice.~~
~~"Organized EMS system" means those entities included in the San Joaquin County EMS Agency's EMS Plan as submitted to the Emergency Medical Services Authority pursuant to Health and Safety Code § 1797.254, or as amended.~~
~~"SJCEMSA" means the San Joaquin County Emergency Medical Services Agency, which is the designated local emergency medical services agency for San Joaquin County.~~

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POLICY:

I. An EMT operating in the San Joaquin County EMS System may perform activities specified in the SJCEMSA EMT basic scope of practice in accordance with the requirements of this policy and SJCEMSA BLS treatment protocols i.e. EMS Policies Nos. 5500-5590.

II. An enhanced skills EMT functioning as part of the organized San Joaquin County EMS System is authorized by SJCEMSA to perform the activities specified in the SJCEMSA EMT enhanced skills scope of practice in accordance with the requirements of this policy and SJCEMSA BLS treatment protocols i.e. EMS Policies Nos. 5500-5590.

III. EMT Basic Scope of Practice: As part of State approved basic scope of practice, during training, while at the scene of an emergency, during transport of the sick or injured, or during inter-facility transfer, a certified EMT or supervised EMT student may perform the following procedures or administer the following medications in accordance with the written policies of the San Joaquin County EMS Agency (SJCEMSA):

A. Evaluate the ill and injured and assess patients.
B. Render basic life support, rescue, and emergency medical care to patients.
C. Obtain diagnostic signs to include:
   1. Temperature.
   2. Blood pressure.
   3. Pulse rate and quality.
   4. Respiration rate and quality.
   5. Lung sounds.
   6. Pulse oximetry.
   7. Level of consciousness.
   8. Pupil status.
   9. Skin signs.
D. Perform cardiopulmonary resuscitation (CPR), including the use of mechanical adjuncts to basic cardiopulmonary resuscitation.
E. Administer oxygen.
F. Use the following adjunctive airway and breathing aids:
   1. Oropharyngeal airway.
   2. Nasopharyngeal airway.

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~~2.~~3. I-Gel supraglottic airway insertion. Must be accredited to perform skill by July 1, 2027
~~3.~~4. Suction devices.
~~4.~~5. Basic oxygen delivery devices for supplemental oxygen therapy including, but not limited to, humidifiers, partial rebreathers, and venturi masks.
~~5.~~6. Manual and mechanical ventilating devices designed for prehospital use including continuous positive airway pressure.

G. Use various types of stretchers and spinal motion restriction devices.

H. Provide initial prehospital emergency care to patients, including, but not limited to:
1. Bleeding control through the application of tourniquets.
2. Use of hemostatic dressings.
3. Spinal motion restriction.
4. Seated spinal motion restriction.
5. Extremity splinting.
6. Extremity traction splinting.
7. Administer oral glucose or sugar solutions.
8. Extricate entrapped persons.
9. Perform field triage.
10. Transport patients.
11. Apply mechanical patient restraint.
12. Set up for LALS and ALS procedures under the direction of an accredited SJCEMSA AEMT or accredited SJCEMSA paramedic.
13. Perform automated external defibrillation.
~~14.~~ Assist patients with the administration of the patient's own physician-prescribed devices including, but not limited to, patient-operated medication pumps, sublingual nitroglycerin, and self-administered emergency medications, including epinephrine devices.

~~15.~~14.

~~IV. EMT Enhanced Skills Scope of Practice:~~

~~A. In addition to the activities authorized in the EMT basic scope of practice policy an Enhanced Skills EMT while at the scene of an emergency and during transport of the sick or injured may perform the following procedures or administer the following medications in accordance with the written policies of SJCEMSA:~~

1. Administer naloxone by intranasal route.
2. Administer epinephrine by auto-injector. Note auto-injectors are the only form of epinephrine administration authorized by this section

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pursuant to CCR, Title 22, §100063(b)(4).

~~2.~~3. Administer ondansetron by oral dissolving tablet (ODT)

~~3.~~4. Perform finger stick blood glucose testing.

~~4.~~5. Administer the following over the counter medications:

a. Acetaminophen.
b. Aspirin.
c. Diphenhydramine.
d. Ibuprofen.
~~a. Aspirin.~~

~~B. In addition to the activities authorized in the basic scope of practice and paragraph A above, an Enhanced Skills EMT may during an inter-facility transfer with a permitted ambulance service provider perform the following procedures or administer the following medications in accordance with the written policies of SJCEMSA:~~

~~1.~~6. Monitor, adjust, and discontinue intravenous lines delivering:

a. Glucose solutions.
b. Isotonic balanced salt solutions including Ringer's lactate.

~~2.~~7. Transfer patients by ambulance who are deemed appropriate for BLS by the transferring physician with established:

a. Nasogastric (NG) tubes.
b. Gastrostomy tubes.
c. Heparin lock(s).
d. Saline lock(s).
e. Foley catheter.
f. Tracheostomy tube.
g. Indwelling vascular access lines, excluding arterial lines.

~~C.~~B. SJCEMSA acknowledges that an EMT employed by a statewide public safety agency (i.e. California Highway Patrol and California Department of Forestry and Fire Protection) may perform EMT enhanced skills as authorized by their certifying local EMS Agency while operating in San Joaquin County.

~~II. EMT Optional Skills Scope of Practice: SJCEMSA has not approved any optional EMT skills, procedures, or medications.~~

~~III.~~II. The scope of practice of an EMT in San Joaquin County shall not exceed the activities authorized by this Policy.

~~IV.~~III. During the continuation of an EMS response that crosses into an adjacent EMS system or during a mutual aid response into another local EMS agency's

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jurisdiction, an on duty EMT may utilize the scope of practice for which the EMT is trained and authorized according to the policies and procedures established by SJCEMSA.

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Adult Supraglottic Airway Device Performance Criteria

Objective: Describe the indications/contraindications for utilization of an i-gel Supraglottic Airway Device (SAD) and demonstrate the ability to proficiently perform the procedure.

Equipment: Appropriate PPE, adult intubation manikin, oropharyngeal airway (OPA), appropriate sized i-gel SAD, water soluble lubricant, tape or i-gel airway support strap, stethoscope, bag valve mask (BVM), nasal cannula (NC), non-rebreather mask (NRM), suction device, ETCO2 monitoring equipment.

Performance Criteria: The ~~A~~EMT, or paramedic will be required to adequately describe the indications/ contraindications and complications for placement of an i-gel SAD and proficiently perform the procedure on a manikin.

Step	Description	Does	Does Not
1	Verbalizes/demonstrates use of appropriate PPE.		
2	Assure patent airway, oxygenation, ventilations, and have suction available.		
3	Assure monitor and pulse oximetry is applied.		
4	Verbalizes proper i-gel SAD size based on patient size: • Size 3 – i-gel small adult SGA (30-60kg). • Size 4 – i-gel medium adult SGA (50-90kg). • Size 5 – i-gel large adult SGA (90+kg).		
5	Verbalizes SAD indications: • Patients in need of advanced airway protection and/or unable to be adequately ventilated with a BVM when orotracheal intubation is unavailable or unsuccessful. • Patients in need of rapid advanced airway control when orotracheal intubation is anticipated to be difficult or likely to interrupt continuous chest compressions.		
6	Verbalizes SAD contraindications: • Intact gag reflex. • Caustic ingestion. • Unresolved complete airway obstruction. • Trismus or limited ability to open the mouth and insert the		

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	device. • Oral trauma (relative). • Distorted anatomy that prohibits proper device placement (relative).		
7	Verbalizes the following procedures that should be utilized prior to placement of a SAD as patient condition and circumstances permit: • If possible, pre-oxygenate with high flow O_2 via NRM or BVM as appropriate for three (3) to five (5) minutes. • Apply high flow NC (10 – 15 L/min) in addition to NRM or BVM to augment pre-oxygenation. • Position patient in a semi-recumbent or reverse trendelenburg position if possible. • Continue utilizing passive oxygenation via NC during SAD placement attempt.		
8	Opens the package and removes the protective cradle containing the SAD.		
9	Removes the SAD from the protective cradle and transfers it to the palm of the same hand, supporting the device between the thumb and index finger.		
10	Places a small amount of a water-based lubricant onto the middle of the smooth surface of the protective cradle.		
11	Grasps the SAD with the opposite (free) hand along the integral bite block and lubricates the back, sides, and front of the cuff with a thin layer of lubricant.		
12	Inspects the SAD to confirm there are no foreign bodies of lubricant obstructing the distal opening.		
13	Places the SAD back into the protective cradle in preparation for insertion.		
14	Removes the SAD from the protective cradle and grasps the lubricated device firmly along the integrated bite block.		
15	Positions the SAD so that the cuff outlet is facing towards the chin of the patient.		

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16	Instructs other rescuer to stop ventilations and removes OPA (if in place).		
17	Places the patient's head in the 'sniffing' position and gently presses down on the chin unless cervical spine injury is suspected.		
18	Hold the i-gel firmly at the bite block with the dominant hand. With the non-dominant hand, open the mouth applying a chin lift.		
19	Introduces the leading soft tip of the SAD into the patient's mouth in a direction towards the hard palate.		
20	Glides the SAD downwards and backwards along the hard palate with a continuous but gentle push until a definitive resistance is felt. • The teeth should be resting on the integral bite block. • Sometimes the 'give-way' is felt before the end point resistance is met – It is important to continue to insert the device until a definitive resistance is felt. • Once definitive resistance is met and the teeth are located on the integral bite block, do not repeatedly push the device down or apply excessive force during insertion.		
21	Attaches BVM to device and ventilates at appropriate rate and volume		
22	Confirms airway patency with physical assessment (chest rise, auscultation over the epigastrium and bilaterally over each lung), and appropriate ETCO2 monitoring methods based on available equipment.		
23	Properly secures device using tape or airway support strap.		
24	Re-evaluates SAD placement after each patient movement or upon transfer of care to other prehospital or hospital personnel.		

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TITLE: **EMERGENCY AMBULANCE DISPATCH CENTER REQUIREMENTS** EMS Policy No. **3101**

PURPOSE: The purpose of this policy is to establish the minimum technology and performance requirements for the designated emergency ambulance dispatch center in the San Joaquin County EMS System.

AUTHORITY: Health and Safety Code, Division 2.5, §1797.220, §1797.223; 1798.8 San Joaquin County Ordinance No. 4563, Title 4, Division 7.0

DEFINITIONS: See SJCEMSA Policy Definitions.

POLICY:

I. SJCEMSA shall designate a single emergency ambulance dispatch center for effective and coordinated emergency ambulance response and deployment.

II. All emergency ambulance providers operating in San Joaquin County shall use the SJCEMSA designated emergency ambulance dispatch center.

III. The designated emergency ambulance dispatch center must provide and demonstrate the following technology and performance functions and meet the following minimum other requirements :

A. Dispatch Functions and Operations:

1. Provide emergency ambulance dispatch services for all emergency ambulance providers, and for other EMS resources as needed, including ~~with~~ the capability to receive emergency ambulance requests and alert ~~respond to requests for~~ emergency ambulance providers using both static and dynamic alerting methods as required~~services~~;

2. Effectively monitor and deploy emergency ambulance providers system status;

3. Effectively ~~N~~notify responding emergency ambulance providers, other EMS resources, personnel, and other public safety organizations of pertinent call and safety information;

~~3.~~4. Effectively monitor EMS system advisories and have the capability to notify all on duty emergency ambulance personnel of pertinent EMS system advisories at one time;

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~~4.~~5. Monitor and track responding emergency ambulance providers and EMS resources with GPS using Computer Aided Dispatch (CAD);

~~5.~~6. Coordinate with law enforcement, first responders, and other EMS providers as needed;

~~6.~~7. Function as the SJCEMSA Disaster Control Facility (DCF);

~~7.~~8. Function as the SJCEMSA EMS Duty Officer communications and notifications center;

~~8.~~9. Provide county wide non-emergency ambulance interfacility transport (IFT) call intake and coordination services ~~(~~as needed~~)~~;

~~9.~~10. Provide access to required data and reports to SJCEMSA;

~~10.~~11. Obtain and continuously maintain Medical Accredited Center of Excellence (ACE) accreditation from the International Academies of Emergency Dispatch (IAED);

B. Technology Requirements:

1. 24/7 digital recording and storage of all phone lines and radio channels;

2. Computer Aided Dispatch (CAD) with GPS interface to allow for remote display of emergency ambulance and other EMS resources real time;

~~2.~~3. Effective CAD to ePCR and mobile tablet interfaces;

~~3.~~4. Digital radio communications to emergency ambulances, hospitals, and other public safety organizations (VHF, UHF, and 800 MHz);

~~4.~~5. Backup systems for all the above;

C. Medical Priority Dispatch System (MPDS):

1. Must use the most recent version of MPDS and ProQA software (within 1 year of release);~~.~~

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~~1.~~2. Must be capable to assign and deploy complex emergency ambulance response plans to all MPDS determinates.

D. Staffing and Training:

1. The emergency ambulance dispatch center shall be staffed with sufficient emergency medical dispatchers to accomplish all dispatch and call taking functions.

2. Each emergency medical dispatcher shall receive an initial San Joaquin County EMS system orientation of no less than 4 hours and a minimum of 28 hours of continuing dispatch education (CDE) every year, meeting or exceeding the standards required by the International Academy of Emergency Dispatch (IAED).

E. Continuous Quality Improvement:

1. The designated emergency ambulance dispatch center shall establish and maintain a continuous quality improvement (CQI) program for its dispatch services approved by SJCEMSA. It shall address dispatcher performance, system status management concepts, and resiliency deficiencies as well as measured relevant dispatch Key Performance Indicator's (KPI) as determined by the emergency ambulance dispatch CQI program~~.~~.

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TITLE: **MEDICAL PRIORITY DISPATCH SYSTEM USE AND ASSIGNMENTS**

EMS Policy No. **3202**

PURPOSE:

The purpose of this policy is to establish a process for emergency medical dispatch (EMD) approval and uniform EMS resource response assignments using the Medical Priority Dispatch System (MPDS) through the coordinated and authorized use of MPDS.

AUTHORITY:

Health and Safety Code, Division 2.5, Section 1797.220, 1797.223, 1798. et seq.

DEFINITIONS: See EMS Policy No. 1100, POLICY DEFINITIONS.

~~A. "EMD" means Emergency Medical Dispatch, a series of components that allow the dispatcher to triage calls, send appropriate resources with the appropriate response, and provide pre-arrival/post-dispatch instructions as needed.~~
~~B. "EMR" means Emergency Medical Responder, a basic life support (BLS) or advanced life support (ALS) non-transport resource operated by an EMR provider~~
~~C. "MPDS" means the Medical Priority Dispatch System.~~
~~D. "IAED" means the International Academies of Emergency Dispatch.~~
~~E. "NRLS" means an immediate response without delay not requiring or using emergency red lights and siren.~~
~~F. "RLS" means an emergency response without delay using emergency red lights and siren.~~
~~G. "SJCEMSA" means the San Joaquin County Emergency Medical Services (EMS) Agency.~~

POLICY:

~~E~~Emergency Medical Dispatch (EMD) shall be accomplished using the Medical Priority Dispatch System (MPDS) and shall be used on all medical calls received for the EMS System. MPDS must be incorporated into medical call processing procedures in accordance with SJCEMSA policies and procedures and in accordance with IAED standards at all times

PROCEDURE:

I. EMD Authorization:

A. EMD and MPDS shall only be performed by an authorized local Public

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Signature on file
EMS Administrator

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Safety Answering Point (PSAP) or by the San Joaquin County Emergency Medical Services Agency (SJCESMA) designated emergency ambulance dispatch center.~~used upon written authorization statement of compliance from the SJCEMSA.~~

B. A PSAP performing EMS call processing must first apply and be approved by SJCEMSA prior to implementation of EMD or MPDS.

C. PSAPs and the designated emergency ambulance dispatch center performing EMD shall submit and maintain a plan for performing EMD using MPDS to the SJCEMSA. At a minimum the plan for EMD shall address ~~all of~~all the following requirements:

1. Compliance with all SJCEMSA policies and procedures.
2. Adherence to the standards outlined in ASTM F-1258 Standard Practice for Emergency Medical Dispatch, ASTM F-1552 Standard Practice for Training Instructor Qualification and Certification Eligibility of Emergency Medical Dispatchers, and ASTM F-1560 Standard Practice for Emergency Medical Dispatch Management.
3. Ability to obtain, within 1 year of authorization, and continuously maintain medical Accredited Center of Excellence (ACE) recognition from the IAED.
4. Use of the current MPDS and ProQA versions (within one year of release).
5. Submit to the SJCEMSA for approval, and maintain, internal written policies and procedures that address the following:
   a. Emergency call surge and “Urgent Disconnect” procedures;
   b. Internal EMD orientation, continued dispatch education, and MPDS CQI programs.
   c. Ensuring third party caller interrogation procedures.
   d. Ensuring language translation procedures.
   e. Ensuring back-up/continuity of operation plan (COOP).
6. Digitally record and maintain all EMS related radio channels and phone lines for a period of not less than 90 days for CQI purposes.
7. Demonstrate that CAD interfaces are fully integrated among all other authorized MPDS centers and emergency ambulance dispatch centers in San Joaquin County with the following minimum functionality:
   a. Bilateral C2C open interface with real time comment sharing.
   b. Synchronization with time server for accurate time stamp continuity through all interfaces.

c. Ability to share MPDS determinants immediately.
d. Ability to correctly request, and subsequently update ambulance response based on MPDS determinant.

8. Maintain all personnel EMD certification and training records for four years.
9. Actively participate in required San Joaquin County CQI activities and programs.
10. Provide timely accurate data and reports to the SJCEMSA as requested, including but not limited to, monthly ProQA EMD case review reports and AQUA reports.

D. SJCEMSA shall review and approve or deny a plan for EMD within sixty (60) days of receiving a complete plan for EMD. If a plan for EMD is denied SJCEMSA will specify the reason for denial and suggest potential corrections to assist the applying organization prior to resubmission.

II. MPDS Use and Operations:

A. MPDS Determinant Levels reflect the complement, level of service, and priority of emergency ambulance and other EMS resource(s) needed for each protocol situation ~~based on EMD interrogation~~ and shall be performed in accordance with this policy.

B. MPDS use shall only be performed by SJCEMSA authorized EMD center(s) and shall process all requests for emergency ambulance and EMR resources in accordance with the assignments established by this policy in Appendix 3202A. Any Fire based EMR that chooses to respond to MPDS assignments differently than prescribed in this policy shall submit to ~~the SJCEMSA~~SJCEMSA their EMS response plans and methodology, including any subsequent modifications, ten (10) days prior to implementation for efficient EMS System planning.

C. Emergency ambulances resources shall be dispatched to EMS requests only after MPDS call processing has appropriately reached a determinant code based on an EMD interrogation.

D. For emergency ambulance response “level of service” described in EMS Policy No. 3202, Appendix A, the following definitions apply:

1. “ALS” – One paramedic and one EMT

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2. "BLS" – Two EMT's
3. "BLS or ALS" – Closest emergency ambulance whether BLS or ALS

E. Once the location of the medical emergency is confirmed~~known~~, if the MPDS determinant cannot be determined through caller interrogation and case entry within 120 seconds, the EMD shall assign a default override determinant of "Delta."

F. Emergency ambulance resources shall not be unnecessarily delayed in circumstances when law enforcement PSAP has determined responder life-safety prevails and the use of the MPDS caller interrogation is not possible. In those cases, EMS calls shall be sent immediately for emergency ambulance dispatch through C2C interfaces, or other means, with instructions and information available for proper emergency ambulance dispatch.

G. Emergency ambulance requests ~~response to requests~~ to "stage" at the scene by law enforcement or as deemed appropriate by the emergency ambulance crew shall respond NRLS until a safe location is reached or law enforcement or other public safety personnel have indicated the scene is safe.

H. Emergency ambulance response to a staging location or for an emergency ambulance that is on the scene staging but~~and~~ has~~ve~~ not made patient contact shall be available for a reassignment to a MPDS Level Echo or Delta call. I~~f reassigned and i~~n such cases a replacement emergency ambulance shall be dispatched in the same manner to the staging location and the appropriate law or other public safety responder's notified of the reassignment.

I. All emergency ambulance responses are subject to cancelation or response priority modification as determined by additional information or patient condition changes as determined by MPDS.

J. All emergency ambulance responses are subject to reassignment of a closer available emergency ambulance resource or to a higher Level (acuity) call as determined by the MPDS determinant Level methodology or the emergency ambulance dispatcher. Reassignment of a closer emergency ambulance resource shall only be done when the following

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conditions exist:

1. The call reassignment presents a clear and obvious response time reduction to a higher Level (acuity) call of a DELTA or ECHO only, or;
2. The reassignment from a lower Level (acuity) call will not subject unnecessary risk to a patient of the lower Level (acuity) response.

K. All emergency ambulance response priorities are subject to modification based upon the on scene EMR evaluation of a patient condition. However, a PSAP or ~~on scene~~ EMR that is on scene is prohibited from requesting a higher emergency ambulance priority only to reduce a perceived extended response.

L. Notification of any response changes while enroute to an EMS call outlined above shall be made immediately to all affected Emergency Ambulance Dispatch Centers and Public Safety Dispatch centers involved.

III. SJCEMSA approves MPDS response and priority assignments for chief complaint Protocol 33 – Transfer / Interfaculty / Palliative Care, as specified in this section and EMS Policy No. 3202, Appendix A.

A. Protocol 33 applies to requests from non-acute care hospital medical facilities with onsite medical personnel that have performed an assessment of the patient and are requesting transport to an emergency department. Protocol 33 should be used to process requests for ambulance service received from the following types of health facilities: same day surgery centers, skilled nursing facilities, hospice facilities, and palliative home care with an onsite physician or registered nurse. Protocol 33 shall not be used for processing requests from dental offices and dental surgery centers.

B. Based on the availability of ALS or BLS ambulances and the needs of the EMS system the authorized emergency ambulance dispatch center may delay dispatch of an ambulance for a Protocol 33 Alpha level determinant without priority symptoms as follows:
1. Alpha Acuity I may be held for up to 30 minutes.
2. Alpha Acuity II may be held for up to 60 minutes.
3. Alpha Acuity III may be held for up to 90 minutes.

C. Any ambulance response to Protocol 33 Alpha level determinants may

be pre-arranged or scheduled at the request of the transferring facility.

~~C.~~D. Interfacility transfer requests from the California Hospital Correctional Facility (CHCF) to local emergency department shall be processed as requested and shall be considered an emergency interfacility transport.

IV. Approved EMD and MPDS centers shall report compliance with this policy to SJCEMSA.

~~SJCEMSA may modify response and priority assignments and authorize the use of BLS staffed and equipped ambulances to respond to requests for service in the EMS system.~~

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Medical Director

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EMS Administrator

TITLE: **EMS RESPONSE VEHICLE MEDICATION AND EQUIPMENT** EMS Policy No. **4101**

PURPOSE:

The purpose of this policy is to standardize equipment and establish minimum levels for the medication and equipment available on EMS response vehicles in San Joaquin County. This includes non-transport EMS response vehicles, emergency ambulances and non-emergency ambulances.

AUTHORITY:

Health and Safety Code, Division 2.5, Sections 1797.197, 1797.197a, 1797.206, 1797.220, 1798; California Code of Regulations, Title 22, Division 9, Chapter 3.1 Section 100066, and Chapter 3.3 Sections 100091, 100096.

POLICY:

It is the policy of SJCEMSA to require a minimum level of medical equipment and medications for EMS response vehicles working in the San Joaquin County EMS system. A minimum level means the minimum level needed to be available to respond to an emergency call in San Joaquin County. EMS Providers shall ensure that all EMS response vehicles are sufficiently stocked to not fall below minimum levels at any time.

PROCEDURE:

I. EMS Service Providers are required to develop a vehicle stocking and inspection procedure to ensure compliance with this policy at the start of each shift including a written record of each daily inspection for each EMS vehicle maintained in an auditable format. Records shall be maintained for a minimum of six months. EMS Service Providers shall require each attending paramedic or EMT to conduct an inspection of their assigned EMS response vehicle at the beginning of their shift.

II. The attending paramedic or EMT on each EMS response vehicle is responsible for ensuring that all medications and equipment are present at the beginning of each shift and in sufficient quantities to not fall below the minimum levels prescribed in this policy. Additionally, they must verify that all equipment is functioning properly and that all battery-powered devices are fully charged.

III. Medications, supplies, and equipment shall be stored in accordance with the manufacturer's recommendation unless otherwise specified in this policy. The use of expired medications and supplies is prohibited.

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IV. EMS Service Providers shall have and maintain appropriate state and federal approvals for point of care testing including a waiver form the from the Centers for Medicare and Medicaid Services, pursuant to the Clinical Laboratory Improvement Amendments (CLIA), for laboratory devices including testing to measure lab values in the prehospital setting as follows:
   A. BLS NT and BLS AMB for finger stick glucose.
   B. ALS NT and ALS AMB for finger stick glucose, capnometry, capnography, and carbon monoxide.

V. EMS Service Providers that are unable to maintain medication or equipment required in this policy due to ongoing or imminent national medication and equipment shortages shall complete and submit Form 4101A Medication Shortage Mitigation and Response Strategies.

VI. EMS Service Providers that request a waiver from medication or equipment in this policy shall complete and submit Form 4101B, Request for Waiver of Requirements.

VII. Any substitutions or modifications to this list must be approved by the EMS Medical Director. If a ground ambulance is dispatched by the authorized emergency ambulance dispatch center and its supplies are below the minimum inventory, it may still respond as a first response unit. Patient transport is permissible only if the patient's care will not be compromised by the equipment or supply deficiency. An Unusual Occurrence Report must be submitted to SJCEMSA in such instance.

Table 1: ALS and BLS Common Equipment and Supplies	**Minimum Level**			
	BLS		**ALS**	
Airway Management	**NT**	**AMB**	**NT**	**AMB**
In ambulance oxygen source, minimum of 500 PSI with a wall mounted regulator	NA	1	NA	1
Portable oxygen - D or E size cylinders, minimum of 200 PSI, with regulator	1	1	1	1
Spare Portable oxygen - D or E size cylinders, minimum of 1800 PSI	1	1	1	1
Wall mounted suction device	NA	1	NA	1
Battery powered portable suction unit	1	1	1	1
Disposable suction canisters	1	2	1	2
Suction catheters with control for each size Fr 14, 18	1	1	1	1
Connecting tubing for suction units	1	1	1	1
Yankauer Tonsil Tip Suction Catheter	1	1	1	1
Disposable bag valve device - adult	1	1	1	1
Disposable bag valve device – pediatric	1	1	1	1

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Table 1: ALS and BLS Common Equipment and Supplies	**Minimum Level**			
	BLS		**ALS**	
Airway Management	**NT**	**AMB**	**NT**	**AMB**
Disposable bag valve device – infant	1	1	1	1
Tube of water-soluble lubricating jelly (or multiple single use packets)	1	1	1	1
Oropharyngeal Airway Kit (adult, child, infant) each size 0 – 8 or 40mm to 110mm	1	1	1	1
Nasopharyngeal Airways, each size Fr 20, 24, 28, 32, 36	1	1	1	1
Nasal Cannula, pediatric	1	1	1	1
Nasal Cannula, adult	1	1	1	1
Adult Non-rebreather oxygen mask	1	1	1	1
Pediatric Non-rebreather oxygen mask	1	1	1	1
Adult laryngoscope handle with alkaline batteries or 2 disposable handles	NA	NA	1	1
Pediatric laryngoscope handle with alkaline batteries or 2 disposable handles	NA	NA	1	1
Spare alkaline batteries for laryngoscope handle	NA	NA	2	2
Disposable Macintosh laryngeal blades each size: #1, #2, #3, #4	NA	NA	1	1
Disposable Miller laryngeal blades each size: #0, #1, #2, #3, #4	NA	NA	1	1
Magill Forceps – Adult and Pediatric	NA	NA	1	1
Endotracheal tubes each size: 6.0, 6.5, 7.0, 7.5, 8.0, 8.5	NA	NA	1	1
ET tube holder	NA	NA	1	1
Disposable Endotracheal Tube introducers	NA	NA	1	1
Endotracheal tube stylet	NA	NA	1	1
End tidal CO2 device, adult	NA	NA	1	1
End tidal CO2 device, pediatric	NA	NA	1	1
Nebulizer mask adult	NA	NA	1	1
Nebulizer mask pediatric	NA	NA	1	1
Saline humidifier	1	1	1	1
Breath actuated nebulizer	NA	NA	1	1
Needle and catheter for pleural decompression: 10 or 14 gauge 3.25 inch needle (with Betadine swab, tape, and 10 ml syringe)	NA	NA	2	2
Percutaneous Needle Cricothyroidotomy insertion kit, which includes: 10 ml syringe, Translaryngeal jet ventilator device with push-button and high-pressure tubing with locking device (Adult), 10 or 12-gauge needle for adult, and Betadine swab, or kit approved by EMS Medical Director.	NA	NA	1	1
iGel Airway each size 3.0, 4.0, 5.0	~~NA~~1	~~NA~~1	1	1
iGel Airway each size 1.0,1.5, 2.0, 2.5	~~NA~~1	~~NA~~1	1	1
Pneumatic Continuous Positive Airway Pressure (CPAP) device with manufacturers recommended size masks	NA	NA	1	1
Zoll Z series™ ventilator with CPAP and/or BiPAP*	NA	NA	NA	1
	Minimum Level			

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Table 1: ALS and BLS Common Equipment and Supplies	**BLS**		**ALS**	
Airway Management	**NT**	**AMB**	**NT**	**AMB**
Adult Ventilator Circuits*	NA	NA	NA	1
CPAP mask compatible with Zoll Z series™ ventilator each size large and extra large*	NA	NA	NA	1
Inline Hepa Filter*	NA	NA	1	1
Assessment and Treatment	**NT**	**AMB**	**NT**	**AMB**
Stethoscope	1	1	1	1
Penlight	1	1	1	1
Blood pressure cuff: thigh, adult, child, infant	1 ea	1 ea	1 ea	1 ea
Patient thermometer	1	1	1	1
Pulse oximetry device approved by the Food and Drug Administration (FDA)	1	1	1	1
Blood glucose measuring device approved by the FDA with multiple test strips	1	1	1	1
Length based pediatric resuscitation tape	NA	NA	1	1
Cardiac monitor with defibrillation/pacing/12 lead capable	NA	NA	1	1
Pediatric defibrillation equipment	NA	NA	1	1
ECG electrodes all patient sizes	NA	NA	6	9
Automated External Defibrillator – Compliant with the current AHA Guidelines and capable of delivering both adult and pediatric shocks	1	1	NA	NA
AED cables and pads for sizes adult and pediatric	1	1	NA	NA
Piston style mechanical compression device	1	NA	1	NA
Bandage shears (heavy duty)	1	1	1	2
Rolls of tape, size 1” or 2” or 3” Hypoallergenic (Transpore/paper)	2	2	2	2
Emesis basins	NA	2	NA	2
Bed pan/fracture pan	NA	1	NA	1
Urinal	NA	1	NA	1
OB Kit, which includes: (1) pair of sterile gloves, (1) drape sheet, (2) umbilical clamps, (4) disposal towels, (2) O.B. towelettes, (1) bulb syringe, (1) O.B. sterile pad (1) plastic bag for placenta, (2) twist ties, (1) receiving blanket, (3) gauze sponges, (pk/2)	1	1	1	1
Ring Cutter	1	1	1	1
Soft ankle/wrist restraints	NA	4	NA	4
Trauma	**NT**	**AMB**	**NT**	**AMB**
Board for use in extrication	1	1	1	1
Scoop stretcher	NA	1	NA	1

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Table 1: ALS and BLS Common Equipment and Supplies	**Minimum Level**			
	BLS		**ALS**	
Trauma	**NT**	**AMB**	**NT**	**AMB**
One or more of the following for use in patient movement on scene: collapsible litter, pole-less litter, soft or tarp litter, or stokes litter	1	1	1	1
Kendrick Immobilization Device (KED) or similar device approved by the EMS Agency	1	1	1	1
Pediatric immobilization device	1	1	1	1
Adjustable C-Collar, ~~Philadelphia®, Aspen®, Miami J®, X-Collar™,~~ or SJCEMSA approved cervical spine stabilization device	4	4	4	4
Soft cervical collars – small pediatric	2	2	2	2
Adult traction splint for femur	1	1	1	1
Pediatric traction splint for femur or adult traction splint that adjusts to pediatric size	1	1	1	1
Rigid splints for splinting each extremity	1	2	1	2
Sterile burn sheets	2	2	2	2
Occlusive dressings	2	2	2	2
2 x 2 gauze pads Sterile	NA	NA	4	4
4 x 4 gauze pads Sterile	5	5	5	5
Hemostatic dressings: Quick Clot Combat Gauze LE; or Quick Clot, EMS Rolled Gauze, 4x4 Dressing, Trauma Pad; or Celox Gauze, Z-Fold Hemostatic Gauze; or Celox Rapid, Hemostatic Z-Fold Gauze	2	2	2	2
Trauma dressings	2	2	2	2
Gauze roll type bandages, size 2 or 4 or 6	2	2	2	4
Triangular bandages	1	1	1	2
Instant ice packs	2	2	2	4
Trauma Tourniquets: SOF Tactical Tourniquet or the Combat Application Tourniquet (CAT)	4	4	4	4
General Equipment	**NT**	**AMB**	**NT**	**AMB**
San Joaquin County Map Book (current within 2 years) or GPS Equivalent	1	1	1	1
Map book for assigned response zones or district (current within 1 year) or GPS Equivalent	1	1	1	1
Battery operated flashlight	1	1	1	1
Functional environmental controls for heat and air conditioning for the patient compartment.	NA	1	NA	1

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Patient compartment door latches operable from inside and outside.	NA	1	NA	1
Table 1: ALS and BLS Common Equipment and Supplies	**Minimum Level**			
General Equipment	**NT**	**AMB**	**NT**	**AMB**
Patient sheets (disposable)	NA	2	NA	2
Patient blankets (disposable)	1	2	1	2
Patient pillows (disposable)	NA	2	NA	2
Ambulance gurney with mattress, capable of elevating the head, feet, and adjustable to several levels.	NA	1	NA	1
VHF & UHF mobile radio minimum 45-watt power located in driver's compartment programmed to communicate with dispatch, hospitals, and other responding units to include frequencies: SJC Med Net channels 1- 8, SJC HEAR, and Cal Cord.	1	1 ea	1	1 ea
UHF control head, microphone and speaker installed in each ambulance's patient compartment to communicate with the base and receiving hospitals.	NA	1	NA	1
San Joaquin County EMS Agency BLS Protocols	1	1	1	1
San Joaquin County EMS Agency ALS Protocols	NA	NA	1	1
Field Operations Guide ICS 420-1 *(FOG Manual),* current edition	1	1	1	1
START triage tags	25	25	25	25
MCI Vests - Medical Group Supervisor, Triage Unit Leader (min)	NA	NA	1	1
Infection Control	**NT**	**AMB**	**NT**	**AMB**
Bottle of instant hand sanitizer (alcohol based) or box of disinfectant wipes for human use.	1	1	1	1
Biohazard bags (various sizes recommended)	2	2	2	2
Commercial Biohazard spill kit or equivalent	1	1	1	1
Covered waste container	NA	1	NA	1
Needle disposal system, which is OSHA compliant	1	1	1	1
Antibacterial disinfectant solution	1	1	1	1
Latex free gloves in sizes small, medium, large, extra-large.	1 box	1 box	1 box	1 box
Isolation Kit including: (2) Gowns, (2) N95 or N100 respirators, (2) eye/face splash guards. Must have sizes sufficient for all staff necessary to meet OSHA requirements.	3	2	3	2

Table 2: BLS Specific Medications, Supplies, and Equipment	**Minimum Level**	
	BLS NT	**BLS AMB**
Epinephrine auto-injector (adult) 0.3mg	1	1
Epinephrine auto-injector (pediatric) 0.15mg	1	1
Naloxone auto-injector or preload syringe	2	1
Mucosal Atomizer Device	2	1
Glucose for oral administration (tube)	1	1
Ondansetron ODT**	NA	8 mg
Saline/Sterile Water Irrigating	2000 ml	2000 ml

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Table 2: BLS Specific Medications, Supplies, and Equipment	Minimum Level	
	BLS NT	BLS AMB
Aspirin chewable 81 mg tablets	324mg	324mg
Acetaminophen Liquid	1,000 mg	1,000mg
Diphenhydramine Liquid	50 mg	50mg
Ibuprofen Liquid	800 mg	800 mg

Table 3: ALS Specific Medications, Supplies, and Equipment	Minimum Level	
	ALS NT	ALS AMB
Acetaminophen – liquid for oral administration	1,000 mg	1,000 mg
Acetaminophen for injection	1,000 mg	1,000 mg
Adenosine for injection	30 mg	30 mg
Albuterol Aerosolized Solution 2.5 mg each	4	4
Aspirin, chewable 81 mg tablets	1 bottle	1 bottle
Atropine for injection	3 mg	3 mg
Atrovent (Ipratropium bromide HFA) 0.5 mg packets	2	3
Diphenhydramine for injection	50 mg	100 mg
Diphenhydramine – liquid for oral administration	50 mg	100 mg
Calcium Chloride for injection	1gm	1 gm
Dextrose 50% for injection or; Dextrose 10% solution in 250 ml bags for injection	50 gm or (3) 250 ml bags of 10% solution or combination	75 gm or (2) 250 ml bags of 10% solution or combination
Epinephrine 1:1,000 for injection	2 mg	4 mg
Epinephrine 1:10,000 for injection	4 mg	8 mg
Fentanyl for injection	300 mcg	500 mcg
Glucose for oral administration (tube)	2	2
Ibuprofen – liquid for oral administration	800 mg	800 mg
Ketorolac for injection	30mg	30mg
Lidocaine for injection	400 mg	400 mg
Magnesium Sulfate for injection	4 gm	8 gm
Midazolam for injection	10 mg	20 mg
Morphine Sulfate for injection	20 mg	40 mg
Naloxone for injection	2 mg	4 mg
Nitroglycerin spray (minimum of 60 metered doses) or Tablet 1/150 gr	1 bottle	1 bottle
Olanzapine tablet	15 mg	15 mg
Tranexamic acid for injection	2gm	4gm
IV Normal Saline 250ml (maintained at manufacturer's recommended temperature range)	2	2
IV Normal Saline 1000ml bags (maintained at a range of 2 degrees within normal body temperature	2	2
IV warming system capable of maintaining two 1000ml bags at a range of 2 degrees within normal body temperature	1	1

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Table 3: ALS Specific Medications, Supplies, and Equipment	**Minimum Level**	
	ALS NT	**ALS AMB**
IV Normal Saline 500ml or 1000ml bags (maintained at manufacturer's recommended temperature range)	2000 ml	4000 ml
Normal saline for injection 10ml or 20 ml vials or preloads	4	4
Saline/Sterile Water 1000ml Irrigating	2	2
Ondansetron – Packet of 2 x 4mg oral disintegrating tablets	8 mg	8 mg
Ondansetron for injection	8 mg	8 mg
Sodium Bicarbonate for injection	50 mEq	50mEq
IV start kit, which contains: – (2) Alcohol or Chlorhexidine wipes, (1) Roll tape, 3/4", (2) – 2" x 2" gauze sponge, (1) ID label, (1) Providone iodine prep, (1) Adhesive bandage, (1) Latex Free Tourniquet, (1) OpSite Dressing (or equivalent)	3	4
Disposable razors	2	2
IV catheters each size: 16ga, 18ga, 20ga, 22ga	2	2
IV catheters each size: 14ga, 24ga	2	2
Hypodermic needles each size:, 21ga, 25ga	2	2
Disposable syringes each size: 1ml sub-q, 3ml, 5ml/6ml, 10ml/12ml	2	2
IO drill	1	1
IO Needles each size: 15mm, 25mm, 45mm	1	1
IO Needle stabilizer		
Betadine solution or swabs	2	4
Solution administration set, Macrodrip	2	2
Solution administration set, Microdrip	1	2
Secondary IV infusion kit	1	2
Medication added labels	1	2
IV extension tubing	2	2
Saline locks	2	2
Dial-a-Flow or equivalent	1	1
1000ml Pressure infusion bag or equivalent	1	1
Mucosal Atomizer Device	2	2
Table 4 Optional Equipment	**Minimum Level**	
	ALS NT	**ALS AMB**
Non C Channel Video Laryngoscope with photo or video recording ability,***	1	1

VIII. Critical Care Transport (CCT)/Specialty Care Transport (SCT) shall be stocked to the ALS AMB minimum level.
Below is a list of recommended additional supplies, equipment, and medications.

Approved: _____ _____
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Table 5: CCT/ SCT Recommended Medications, Supplies, and Equipment	**Quantity**
BVM PEEP valve	2
Dual Lumen Salem Sump (10, 14, 16 Fr)	1ea
Doppler	1
Tube Ultra Sound Gel	1
Reflex hammer	1
Suction catheter W/ chimney valve (10-18)	1ea
In-line Ballard suction (24Fr & 8 Fr)	2ea
Salem Sump OG tubes (6fr and 8fr)	1ea
Suction catheter (6Fr and 8Fr)	1ea
Meconium aspirator	1
Un-cuffed ET tube (2.5 -4.0)	1 ea
Pediatric stylet 6fr	1
Neonatal BVM with small and extra small mask	1ea
Pediatric pulse oximeter probes	1ea
SpO2 Ear probe	1
NEO-TEE: T-Piece resuscitator	1
Neo fit ETT holder	1ea
Ram cannula system with (sizes green through purple)	1ea
Edwards (Oval) invasive line cable	1
Abbott (square) invasive line cable	1
Transducer (ext side)	1
Mechanical Ventilator	1
Adult ventilator circuit	2
Pediatric ventilator circuit	2
Multi channel IV pump	1
IV pump line sets	6
IV pump half sets	6
Warming mattress	1
0.2 micron filter	1
Amiodarone 150mg	3
Phenergan 25mg/ml	1
Solu-medrol 125mg	1
Ofimev 1000/100ml	1
Etomidate 40mg 20/ml	1
Rocuronium 100mg/10ml	1
Esmolol 2000mg/100ml	2
Norepinephrine 4mg/4ml	2
Phenylephrine 10mg/ml	1
Calcium Gluconate 1g/10ml	1
Nitroglycerin 50mg/10ml	1
Lasix 100mg/10ml	1
Nicardipine 25mg/10ml	1

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Table 5: CCT/ SCT Recommended Medications, Supplies, and Equipment	**Quantity**
Pitocin 10u/1ml	2
Terbutaline	1
Labetalol 100mg/20ml	2

*Optional for non-emergency ALS interfacility transfer ambulance.
**Emergency ambulance providers only.
***Shall be approved by EMS Medical Director prior to being put into service.

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Approved: _____ _____
Medical Director EMS Director

TITLE: **EMS AIRCRAFT UTILIZATION** EMS Policy No. **4448**

PURPOSE:

The purpose of this policy is to specify the patient type and time criteria for utilization of an EMS Aircraft during an EMS system response.

AUTHORITY:

Title 22, California Code of Regulations, Division 9, Chapter 8.

DEFINITIONS: See SJCEMSA Policy Definitions.

~~A. "SJCEMSA authorized dispatch center" means the authorized point of contact for all EMS Aircraft requests in San Joaquin County.~~

POLICY:

I. EMS Aircraft shall~~ould~~ only be used when ground transport of a critically injured patient exceeds 30 minutes or during multi casualty incidents (MCI) ~~it is in the best interest of the patient. In general, consideration should be given to requesting an EMS Aircraft whenever the patient's condition appears life or permanent disability threatening after field assessment, prolonged transports exceeding thirty (30) minutes,~~ or in accordance with simultaneous dispatch procedures outlined in Section III of this policy. It is expected that the patient's condition, available ground resources, incident location and/or landing zone proximity to incident location will be evaluated and balanced when making the determination of transport modality.

II. All EMS aircraft requests will be routed through the SJCEMSA designated emergency ambulance ~~authorized~~ dispatch center. ~~-~~Requests from any other source~~, other than the SJCEMSA authorized dispatch center will not be honored by EMS aircraft providers. The requesting agency shall be redirected to the SJCEMSA authorized dispatch center by the EMS Aircraft dispatch center.~~

~~II.~~III. The closest authorized EMS aircraft shall be requested by the designated emergency ambulance dispatch center.~~In the event more than one aircraft is available for scene calls the aircraft that is geographically closer to the incident shall be utilized.~~

Approved: ~~Signature on file~~ _____ _____ ~~Signature on file~~

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~~III.~~IV. SJCEMSA designated emergency ambulance ~~authorized~~ dispatch centers shall simultaneously dispatch air ambulance resources to MPDS determinants 3D, 4D, 7C/D/E, 14D, 15D/E, 17D, 22D, 27D, 29D, 30D and where ground transport time to a County-approved trauma center is equal to or greater than 30 minutes. Refer to EMS Policy No. 4448A, EMS Aircraft Simultaneous Dispatch Map.

~~IV.~~V. EMS Responders may request an air ambulance while enroute to the call in accordance with Section II of this policy if the responding crew suspects that an air ambulance will be needed based on previous knowledge of the area.

~~V.~~VI. Patient Condition(s) Not Appropriate for EMS Aircraft Transport:

A. Cardiac arrest (in hypothermic arrest consider air transport).
B. Stable patient(s) may consider air transport if ground transport is greater than thirty (30) minutes from nearest receiving facility.
C. Patient(s) contaminated by hazardous materials that cannot be completely decontaminated prior to transport.
D. Patient(s) who are agitated or combative and a potential threat to the crew.
E. Patient(s) located within a city limits, the only exception to this shall be Mass Casualty Incidents.

~~VI.~~VII. Patient Condition(s) Appropriate for EMS Aircraft Transport:

A. Multi-casualty incidents ~~(red and or yellow patients)~~.
B. Critical Trauma Patient(s).
C. Spinal injury with neurological deficit.
D. Unstable burn patient.
E. Unstable patient from environmental injuries.
F. Vascular compromise in a limb or amputation.
G. Prolonged seizure refractory to medication or seizures involving pregnancy.
H. Cardiovascular instability.
I. Respiratory arrest or sever respiratory comprise.
J. Complications of childbirth (e.g., abnormal presentations, massive blood loss, etc.)
K. Any other conditions in consultation with the Base Hospital.

~~VII.~~VIII. All EMS Aircraft destinations shall be in accordance with SJCEMSA EMS Policy No. 5201, Medical Patient Destination, and 5215, Trauma Patient Destination, and Disaster Control Facility (DCF) direction.

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Approved: ~~Signature on file~~

Medical Director

~~Signature on file~~

EMS Administrator

TITLE: **911 EMS Nurse Navigation Services (NNS)** EMS Policy No. **4990**

PURPOSE:

The purpose of this policy is to establish procedures for EMS Call Processing Centers to direct low acuity 911 EMS calls to a Nurse Navigation Services (NNS) program. The NNS will offer direct advice on the presenting problem and/or arrange for ambulatory care, transportation if needed, pharmacy services and follow up as alternatives to an EMS response in San Joaquin County.

AUTHORITY:

Health and Safety Code, Division 2.5, Sections, 1797.220,

DEFINITIONS: See SJCEMSA Policy Definitions

PROCEDURE:

I. EMS Call Processing Centers shall direct low acuity 911 callers in accordance with SJCEMSA EMS Policy No. 3202 A, Medical Priority Dispatch System and Use Assignments Appendix A, to the authorized NNS.

II. Criteria for NNS Program patient eligibility.
   A. The use of the NNS Program is only applicable to the Medical Priority Dispatching System (MPDS) protocol determinate codes listed in Policy 3202A.
   B. Any MPDS determinate listed in Policy 3202 A shall be referred to the NNS.
   C. NNS patient eligibility:
      1. An age 18 years or older or the caller is the consenting adult for a minor child.
      2. Patient has capacity to give consent (i.e., decision-making capacity not impaired by alcohol, drugs or otherwise altered mental status).
      3. Not incarcerated or in law enforcement custody.
      4. No active suicidal/homicidal ideation.
      5. No hallucinations/delusions.

III. EMS Call Processing Center to NNS handoff procedures.
   A. When 911 EMD triage results in an MPDS determinant code listed in Policy 3202 A, the call taker will initiate a call to the nurse navigator program: **(XXX) XXX-XXXX**.
   B. The EMD call taker will provide the event number, incident address, caller phone number and chief complaint to the nurse navigator and establish consent to continue with the caller.

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C. When the caller consents to transfer to the NNS the event will hold in CAD for an interval of 20 minutes.
D. After 20 minutes and no return call from the NNS, the call shall be closed with a disposition in CAD of “Call Transferred to NNS”.
E. If the NNS returns the call to EMS Call Processing Canter, the call taker shall EMD the caller based on the NNS chief compliant.
F. If the first responder arrives on scene and makes patient contact while the 911 caller is participating with the NNS the first responders shall support and cooperate with the patient and NNS.
G. If the caller refuses referral to the NNS, the call will be dispatched per SJCEMSA EMS Policy 3202 A.

IV. Nurse Navigator 911 Call Back Process
A. The EMD Communications Center that initiated the call will receive a nurse call back when the Nurse Navigator has determined that the patient will require BLS or ALS transport or if the caller refuses nurse navigation.

B. Once the call back is received, the NNS will identify themselves appropriately and advise that they are requiring patient transport and will provide the call taker with the following:
1. Event number.
2. Caller’s name.
3. Caller’s address.
4. Chief Complaint.

V. Dispositions
A. Nurse Navigators will provide dispositions of all calls through Nurse Navigation reporting that will be viewed via an online portal and can be accessed daily.

VI. Caller Issues/Feedback
A. Nurse Navigators will complete customer satisfaction callbacks within 24 hours of calls.
B. If EMS Call Processing Centers needs to connect with the Nurse Navigation team about a potential issue, or provide other feedback please email NurseNavigationLeadership@gmr.net.
C. EMS Call Processing Centers shall call the on Duty Nurse Navigation Supervisor at (XXX) XXX-XXXX .
D. The EMS duty officer for San Joaquin County can be contacted at (XXX) XXX-XXXX. Unusual Occurrences may be submitted electronically to SJCEMSA at Emergency Medical Services

VII. Field to Nurse Navigation Referral

A. The Paramedic or EMT shall complete a primary and secondary assessment survey as outlined in EMS Policy 5700 Advanced Life Support Protocols, RPC-01 Routine Patient Care.

B. The Paramedic or EMT may initiate a call to the nurse navigator program after completing the assessment, if the patient is deemed a good candidate for the nurse navigation program. The patient must agree to speaking with the nurse navigator. The nurse navigator program phoneline: **(XXX) XXX-XXXX**.

C. Paramedic or EMT shall provide the nurse navigation nurse with the following information.
   1. Name
   2. Age
   3. Address
   4. Callback phone number
   5. Complaint or need.
   6. Full assessment findings, including blood pressure, pulse rate, respiratory rate, and SPO2 reading.
   7. If the patient has a history of diabetes, complete a blood glucose check.
   8. Any other pertinent history or patient assessment information.

D. The ALS or BLS unit shall remain on scene until the nurse navigator completes the intake call and deems no ambulance is needed.

E. If the nurse navigator determines that an ambulance is needed, the on-scene ambulance shall initiate care and transport. If the patient refuses transport, they shall follow EMS Policy 5109 Patient refusal of Treatment or Transport- AMA.

F. If the nurse navigator referral is accepted and ambulance transport is not needed, document the following:
   1. Patient demographics.
   2. Contact findings.
   3. Assessment.
   4. Vital signs.
   5. Disposition.

G. The on-scene Paramedic or EMT initiating the nurse navigation referral shall not leave the scene until the nurse navigator determines if the ambulance is needed or not.

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TITLE: **RESTRAINT OF PATIENTS** EMS Policy No. **5107**

PURPOSE:

The purpose of this policy is to provide for the use of patient restraints in the prehospital environment for patients who are violent, potentially violent, or who may harm themselves or others.

AUTHORITY:

Health and Safety Code § 1797.200 & 1798 et seq.

DEFINITIONS: See SJCEMSA Policy Definitions.

POLICY:

It is the policy of SJCEMSA to allow under specific conditions prehospital personnel to properly apply restraints to specific patients while ensuring the safety of the patient, community, and responding personnel. When restraining a patient is necessary such activity shall be undertaken in a manner that protects the patient's health and safely preserves his or her dignity, rights, and well-being. Restraining a patient is a last resort after alternative interventions including verbal de-escalation and less restrictive intervention have been considered or attempted and EMS personnel shall use the least restrictive intervention reasonably necessary. Prehospital personnel must consider that aggressive or violent behavior may be a symptom of medical conditions and that behavioral restraints are to be used only in circumstances where an immediate or credible threat of physical harm is present.

I. INDICATION FOR PHYSICAL RESTAINTS:

A. The patient lacks decision-making capacity and is actively interfering with assessment, treatment, or transport necessary to address a suspected emergency medical condition.

B. The patient lacks decision-making capacity and restraint is reasonably necessary to prevent significant unintended self-harm, including removal of medically necessary devices or unsafe movement.

C. Restraint is otherwise necessary to safely accomplish emergency medical care and less restrictive measures have failed, are clearly inappropriate, or cannot safely be attempted.

D. The indication for restraint must continue to exist for restraint to remain in use.

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II. INDICATION FOR CHEMICAL RESTRAINT:

A. In coordination with SJCEMSA Policy No. 5700 ALS Treatment Protocols, AGEN-05, patients exhibiting signs of "Severe Agitation" creating an immediate or credible risk of physical harm to the patient, responders, or others.
B. Physical restraint is not required before medication when attempting restraint alone would create unnecessary risk.

III. APPLICATION OF PHYSICAL RESTRAINT:

A. Use commercially manufactured padded or soft, quick-release restraints.
B. Ensure access to the airway and adequate ventilation, circulation, neurologic function, monitoring, and treatment.
C. Restraint equipment, applied by prehospital personnel, must be either padded leather restraints or soft restraints. Both methods must allow for quick release.

IV. PROHIBITED METHODS FOR RESTRAINT:

A. Hard plastic ties or any restraint device requiring a key to remove.
B. Sandwiching patients between backboards, scoop-stretchers, or flat, as a restraint.
C. Restraining a patient's hand and feet behind the patient, i.e. hog-tying.
D. Methods or other materials applied in a manner that could cause respiratory, vascular, or neurological compromise, including prone restraints.
E. Use of chokeholds, neck restraints, pain-compliance techniques, and body weight or pressure on the chest, back, abdomen, or neck.

V. LAW ENFORCEMENT ROLE AND RESTRAINTS:

A. Replace law enforcement restraints with soft restraints before transport when safely feasible and continued law enforcement restraint is unnecessary.
B. EMS retains authority and responsibility for medical assessment, treatment, positioning, monitoring, and EMS restraint devices.
C. Restraint equipment applied by law enforcement shall be secured to the fixed frame of the stretcher and shall not be attached to movable side rails or other components whose position may change during transport or patient care and must provide sufficient slack in the restraint device to

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allow the patient to straighten the abdomen and chest and to take full tidal volume breaths.

D. Restraint devices applied by law enforcement require the officer's continued presence to ensure patient and prehospital personnel safety. The officer should, if possible, accompany the patient in the ambulance, or follow by driving in tandem with the ambulance on a predetermined route. A method to alert the officer of any problems that may develop during transport should be discussed prior to leaving the scene.

VI. MONITORING OF PATIENT IN RESTRAINTS:

A. Document vital signs and clinical status at least every five (5) minutes while the patient is actively struggling, significantly agitated, or following medication administered for severe agitation, through transfer of care.

B. Obtain neurovascular checks before application when feasible, immediately afterward, after adjustment or repositioning, and at least every 15 minutes through transfer of care.

VII. POSITIONING AND TRANSPORT:

A. Patients shall not be transported in a prone position unless required by a concomitant medical condition e.g. impaled object preventing supine transport.

B. Place restrained patients supine, lateral, semi-fowlers, or fowlers as clinically appropriate.

C. Maintain direct observation and continuous visual assessment of airway and respiratory effort.

D. Reduce or remove restraints as soon as they are no longer necessary.

E. Restrained patients should be transported to an appropriate receiving facility based on the patient's condition per SJCEMSA Policy No. 5201 Medical Patient Destination and or 5215 Trauma Patient Destination.

VIII. DOCUMENTATION:

A. Documentation on the patient care report shall include:

i. Specific observed behavior or medical indication supporting restraint.
ii. Decision-making capacity when relevant.
iii. De-escalation attempted or why it was unsafe.
iv. Type, time, personnel/agency, and patient position.
v. Vital signs, respiratory and neurovascular monitoring.
vi. Continued need for restraint and time adjusted or removed.
vii. Injuries, complications, medications, and response to treatment

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TITLE: ~~CERVICAL SPINE STABILIZATION~~SELECTIVE SPINAL MOTION RESTRICTION (SMR)
EMS Policy No. **5115**

PURPOSE:

~~-~~The purpose of this policy is to provide direction to prehospital personnel for the assessment and management of patients with potential spinal injury and to minimize unnecessary spinal motion while preserving airway management, respiratory function, circulation, patient comfort, and timely delivery of care.~~on the application of cervical spine stabilization.~~

AUTHORITY:

Health and Safety Code, Division 2.5, Section 1797.220 & 1798 et seq.;

DEFINITIONS: See SJCEMSA Policy Definitions.

POLICY:

I. ~~When applying spinal stabilization techniques, the~~The goal of SMR is to prevent gross movement of the spine while using the simplest most effective means possible ~~to provide~~ preserving~~for~~ patient comfort and the delivery of patient care including airway management.

II. Indication for SMR:

A. SMR is indicated following blunt trauma when one or more of the following are present:
   1. Posterior midline spinal pain or tenderness.
   2. Focal neurologic signs or symptoms potentially attributable to spinal injury, including numbness, paresthesia, weakness, or paralysis.
   3. Anatomic deformity of the spine.
   4. Altered mental status resulting in an unreliable examination.
   5. Suspected drug or alcohol intoxication resulting in an unreliable examination.
   6. A distracting injury or circumstance that prevents reliable spinal examination.
   7. Inability to effectively communicate or participate in a reliable examination.

B. Mechanism of injury alone does not mandate SMR in a reliable patient with normal spinal and neurologic examination. High-risk mechanisms and patient factors, including advanced age, should inform clinical judgement

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but do not independently mandate SMR.

C. Patients with blunt trauma do not require SMR when all of the following are present:
   1. The patient is reliable and cooperative;
   2. There is no posterior midline spinal pain or tenderness;
   3. Motor and sensory examination is normal;
   4. There is no distracting injury or circumstance preventing reliable assessment.

D. SMR is not indicated for isolated penetrating trauma in the absence of a concomitant blunt mechanism.

~~I.~~ Application of SMR: ~~Prehospital personnel shall apply cervical spine stabilization techniques to patients injured from blunt force trauma in the following circumstances:~~

III.

A. When SMR is indicated, minimize flexion, extension, rotation, and other gross movement of the spine during assessment, movement, and transport.

B. When clinically appropriate, apply an appropriately sized SJCEMSA-approved rigid cervical collar.

C. A rigid cervical collar should not be applied, or should be removed and alternative SMR measures used, when:
   1. Application compromises airway management or ventilation;
   2. An appropriately sized collar is unavailable;
   3. Patient anatomy prevents appropriate fit or neutral positioning;
   4. Application causes significant increased pain or new or worsening neurologic symptoms; or
   5. The patient is combative or agitated and attempts to apply or maintain the collar result in increased spinal movement or otherwise compromise patient care.

D. Alternative methods of SMR may include manual stabilization, towels, blankets, pillows, padding, positioning on the ambulance cot, or other SJCEMSA-approved methods.

E. Patients with severe kyphosis, obesity, preexisting spinal deformity, or other anatomic considerations should not be forced into an anatomically inappropriate position. Provide support in the patient's natural position while minimizing gross movement.

~~Conscious patients exhibiting one or more of the following signs or symptoms: Posterior midline neck or back tenderness and/or pain.~~

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~~Distal numbness, tingling, weakness, or paresthesia.~~
~~Paralysis.~~
~~Anatomic deformity of the spine.~~
~~Distracting circumstances (e.g. emotional distress, communication barrier), or injury (e.g. long bone fracture, degloving or crush injuries, large burns, etc.)~~
~~Glasgow coma scale of less than 15 involving blunt force trauma or intoxication.~~
~~If the above criteria are not met, but there is still suspicion of spinal column or spinal cord injury due to mechanism or clinical assessment, cervical spine stabilization should occur.~~
~~There is no role for cervical spine stabilization in isolated penetrating trauma.~~

~~Pediatric cervical spine stabilization:~~
~~Apply cervical spine stabilization using a Philadelphia®, Aspen®, Miami J®, X-Collar™, or SJCEMSA approved cervical spine stabilization device.~~
~~ or other SJCEMSA approved cervical spine stabilization device. If an SJCEMSA approved cervical spine stabilization device is not practical use a soft collar and pediatric immobilizer or Kendrick Extrication Device (KED), or any combination of blankets and pillows or other options as outlined below.~~

~~Pediatric Patients and Car Seats:~~
~~Infants restrained in a rear-facing car seat may be stabilized and extricated in the car seat. The child may remain in the car seat if the stabilization is secure and his/her condition allows (no signs of respiratory distress or shock.)~~
~~Children restrained in a car seat (with a high back) may be stabilized and extricated in the car seat. Once extricated from the vehicle, using a car seat, cervical spine stabilization should be applied. The child may be stabilized in their car seat if applying an external standard cervical spine stabilization device causes increased agitation, gross movement, and potential further harm.~~
~~Children restrained in a booster seat (without back) should be extricated using standard techniques with cervical spine stabilization applied.~~
~~If applying cervical spine stabilization to a patient in a car seat, prehospital personnel must conduct a posterior assessment by palpation.~~

IV. ~~Adult cervical spine stabilization~~Patient Movement and Extrication:

A. Alert and cooperative patients capable of understanding and following instructions may be permitted to self-extricate and self-limit spinal movement when clinically appropriate.
B. Other appropriate SJCEMSA-approved equipment may be used to

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facilitate extrication or transfer when their use is expected to reduce unnecessary spinal movement.

C. Long backboards may be used for extrication or movement at the scene but shall not be used for routine transport to the hospital.

D. Following extrication or transfer, securer the patient to the ambulance cot using appropriate restraint systems while maintaining reasonable spinal alignment.

V. Positioning and Transport:

A. Position the patient to maintain spinal alignment to extent practical while optimizing airway management, ventilation, circulation, patient comfort, and treatment of other life-threatening conditions.

B. Supine positioning is not required when another position is clinically necessary or better tolerated.

C. SMR methods shall be modified when their use causes respiratory compromise, increased pain, significant agitation, tissue pressure concerns, or other clinically important adverse effects.

VI. Neurologic Assessment:

A. Assess and document motor and sensory function when clinically possible prior to application of SMR.

B. Reassess motor and sensory function:

1. After application or significant adjustment of a cervical collar or other SMR device;
2. Following significant patient movement or transfer; and
3. When the patient reports new or worsening neurologic symptoms.

VII. Pediatric Considerations:

A. Pediatric patients shall undergo age-appropriate assessment for potential spinal injury. Age alone does not mandate SMR.

B. When a cervical collar is indicated, use an appropriately sized SJCEMSA-approved device when proper fit can be achieved and the device is tolerated.

C. If an appropriately sized cervical collar cannot be applied or causes increased agitation, gross movement, respiratory compromise, or other potential harm, use alternative age-appropriate SMR techniques including padding, blankets, towel rolls, pediatric immobilization devices, or other

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SJCEMSA-approved methods.

D. Avoid SMR techniques that provoke distress or increased spinal movement.

E. Pediatric patients in car seats shall receive appropriate anterior and posterior assessment when clinically feasible.

F. Pediatric stabilization and transport with Car Seats:

1. Infants restrained in a rear-facing car seat may be stabilized and extricated in the car seat. The child may remain in the car seat if the stabilization is secure and his/her condition allows (no signs of respiratory distress or shock.)
2. Children restrained in a car seat (with a high back) may be stabilized and extricated in the car seat. Once extricated from the vehicle, using a car seat, cervical spine stabilization should be applied. The child may be stabilized in their car seat if applying an external standard cervical spine stabilization device causes increased agitation, gross movement, and potential further harm.
3. Children restrained in a booster seat (without back) should be extricated using standard techniques with cervical spine stabilization applied.

VIII. Documentation:

A. When SMR is indicated, the patient care record shall document:

1. Findings supporting the decision to apply SMR;
2. Motor and sensory examination when obtainable;
3. Method or device used;
4. Any modification or omission of a cervical collar or other SMR method and the clinical reason;
5. Relevant reassessment findings; and
~~1.~~6. Any adverse effects associated with SMR.

~~B. Apply cervical spine stabilization using a SJCEMSA approved cervical spine stabilization device. If a cervical spine stabilization device is not practical use any combination of equipment including pillows and blankets or other commercially available stabilization device approved by the EMS Agency to ensure comfort, airway management and spinal stabilization on the gurney.~~

~~1. For those incidents characterized by extrication challenges SJCEMSA approved cervical spine stabilization device and KED~~

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~~may be used.~~

~~2. Patients whose anatomy is not conducive to the use of an SJCEMSA approved cervical spine stabilization device (such as those with severe kyphosis or morbid obesity) may require alternate methods including towels, blankets and pillows.~~

~~B. Long backboards may be used for extrication or movement at the scene. Long backboards shall not to be used to transport a patient to the hospital.~~

~~C. In the presence of neurological symptoms or T-, L- or S- spine tenderness the patient shall be transported with the head of the bed elevated no higher than 30 degrees. Patients who do not meet this criterion may be transported in the position of comfort.~~

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San Joaquin County
Emergency Medical Services Agency

BLS Scope of Practice Summary

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et al.

Procedures	Special Considerations	EMR	EMT
Patient assessment		Yes	Yes
Obtain vital signs	BP, pulse, resp, etc.	Yes	Yes
Perform CPR and external airway maneuvers	Chest compressions, abdominal thrusts, back blows	Yes	Yes
Oropharyngeal airway		Yes	Yes
Nasopharyngeal airway		Yes	Yes
i-Gel supraglottic airway		No	Yes
Bag valve mask device		Yes	Yes
Oxygen devices	Cannula, mask, tubing	Yes	Yes
Suction devices	Manual and mechanical	Yes	Yes
Splints	Soft, rigid	Yes	Yes
Traction splints		No	Yes
Spinal immobilization	X collar, KED, etc.	Yes	Yes
AED		Yes	Yes
Assist with childbirth		Yes	Yes
Assist with ALS procedures	Under paramedic direction	No	Yes
Monitor IV infusions	Isotonic solutions (NS, LR) and D5W (inter-facility transfers)	No	Yes

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Monitor indwelling IV lines	Excluding arterial lines	No	Yes

~~EMR = Emergency Medical Responder~~
~~EMT = Emergency Medical Technician~~
~~EEMT = Enhanced Skills Emergency Medical Technician~~

Procedures, cont.	**Special Considerations**	**EMR**	**EMT**
Monitor gastrostomy tubes		No	Yes
Monitor foley catheters		No	Yes
Monitor tracheostomy tubes		No	Yes
Monitor nasogastric tubes		No	Yes
Monitor Heparin locks		No	Yes
Determine Blood Glucose level		No	No
Monitor SpO2		No	Yes
Medications	**Special Considerations**	**EMR**	**EMT**
Oxygen		Yes	Yes
Oral Glucose	BLS personnel are not authorized to use glucometers to determine blood glucose levels	No	Yes
Mark I Kits	Nerve agent exposure only and only trained personnel	No	Yes
Assisting patients with administering their own prescribed medications:	• Inhalers • Allergic reaction kits (epinephrine kit) • Sublingual Nitroglycerine	No	Yes
Naloxone		No	No
Aspirin		No	No

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Epinephrine Auto Injector Adult and Pediatric		No	No
Acetaminophen		No	Yes
Diphenhydramine		No	Yes
Ibuprofen		No	Yes
Ondansetron		No	Yes

EMR = Emergency Medical Responder
EMT = Emergency Medical Technician
~~EEMT = Enhanced Skills Emergency Medical Technician~~

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San Joaquin County
Emergency Medical Services Agency

BLS Cardiac Arrest

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 2, Sections 100062, 100063, 100064

PURPOSE: The purpose of this policy is to provide direction for BLS providers for resuscitation of patients in cardiopulmonary arrest.

DEFINITIONS:

A. "Adult" means patients 13 years of age and older.
B. "Pediatric" means patients 12 years of age and younger.
C. "Traumatic Cardiac Arrest" means a patient in cardiac arrest after receiving a blunt force or penetrating mechanism of injury or after drowning.
D. "Medical Cardiac Arrest" means cardiac arrest not caused by trauma excluding drowning.
E. "MICR" means minimally interrupted cardiac resuscitation that focuses upon maintaining high quality chest compressions with both depth and rate.
F. "Passive Oxygen Insufflation" (POI) is the method of providing oxygen to a patient during the first eight (8) minutes of resuscitation with an oral pharyngeal airway (OPA), high flow oxygen via non-rebreather mask, and no ventilations.

POLICY:

I. Adult Medical Cardiac Arrest.
   A. Primary Survey.
   B. Information Needed
      1. Estimated down time.
      2. Circumstances surrounding arrest.
      3. Onset (witnessed or un-witnessed).
      4. Preceding symptoms.
      5. Bystander CPR.
      6. Duration of CPR.
      7. Medications.
      8. Environmental factors (hypothermia, inhalation, asphyxiation).
   C. Contraindications for use of MICR include:
      1. Traumatic arrest.
      2. Pediatric arrest.
      3. Drowning.

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D. Treatment:
1. Conduct resuscitation using MICR for eight (8) minutes with the goal of preserving cerebral function through meticulous attention to procedure in the following rank order:
   a. Provide high quality chest compressions at a rate of 100-120 compressions per minute with minimal interruptions.
   b. Apply ECG or AED for analysis and defibrillation.
   c. Follow AED prompts
   d. Initiate POI.
      i. Insert OPA or NPA followed by 100% Oxygen via non-rebreather mask.
   e. Alternate provision of compressions between team members every 2 minutes.
2. If no return of spontaneous circulation (ROSC) following eight (8) minutes of MICR, transition resuscitative efforts to provide ventilation.
   a. If an ALS airway is provided, give ventilations at 8-10 per minute. DO NOT HYPERVENTILATE.
   b. If an ALS airway is not available give compressions in a ratio to ventilations at 30:2.
   ~~f.~~c. Insert i-Gel only if unable to maintain airway with OPA/BVM or if patient has history of drowning or respiratory arrest prior to cardiac arrest and ventilate at 8-10 per minute.
~~2.~~3. For return of spontaneous circulation continue to monitor patient and assist respirations only as needed and prepare for transport.

II. Adult Traumatic Cardiac Arrest:
A. Primary Survey.
B. Information Needed:
1. Patient down time.
2. Prior treatments.
3. Whether blunt or penetrating mechanism of injury.
C. Findings:
1. Unconscious with ineffective or absent respirations.
2. Absence of pulse.
3. Signs of trauma or blood loss.
4. Air and skin temperature.
5. If signs of obvious death refer to EMS Policy No. 5103 Determination of Death in the field.
D. Treatment:
1. Initiate chest compressions at a rate of 100-120/min.
2. Insert OPA or NPA followed by 100% Oxygen via bag valve mask and give compressions to ventilations in a ratio of 30:2 at a rate of 100-120 compressions per minute. Do not hyperventilate.
3. Apply AED and defibrillate patient following AED prompts between cycles every two minutes.
4. Alternate provision of compressions between team members every 2

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minutes.

5. Insert an i-Gel only if unable to maintain airway with OPA/BVM or if patient has history of drowning or respiratory arrest prior to cardiac arrest and ventilate at 8-10 per minute.

III. ~~-~~Pediatric medical or traumatic cardiac arrest.

A. Primary Survey.

B. Information Needed:

1. Patient down time.
2. Prior treatments.
3. Whether blunt or penetrating mechanism of injury.

C. Findings:

1. Unconscious with ineffective or absent respirations.
2. Absence of pulse.
3. Signs of trauma or blood loss.
4. Air and skin temperature.

D. Treatment:

1. Initiate chest compressions at a rate of 100-120/min.
2. Insert OPA or NPA followed by 100% Oxygen via bag valve mask and give compressions to ventilations in a ratio to at 15:2 at a rate of 100-120 compressions per minute.
~~2.~~ If single rescuer compression to ventilation ratio is 30:2. Do not hyperventilate.
3.
~~3.~~ Apply AED and defibrillate patient following AED prompts between cycles every two minutes.
4. Alternate provision of compressions between team members every 2 minutes.
5. Insert an i-Gel only if unable to maintain airway with OPA/BVM or if patient has history of drowning or respiratory arrest prior to cardiac arrest and ventilate at 8-10 per minute.

~~3.~~

IV. Airway considerations:

A. Only use ~~supraglottic airway (~~i-Gel~~)~~ if unable to maintain airway with BVM and OPA.

B. The approved airway management procedure for the unconscious patient consists of the following:

1. Providing BLS airway management skills;
2. Correctly assessing the need for an i-Gel Airway;
~~4.~~3. Successfully inserting an i-Gel Airway ONLY IF there is no compliance with BVM and OPA.

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BLS Respiratory Distress

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 3.12, Sections 100006.012~~,~~ ~~100063, 100064~~

DEFINITIONS:

A. "Pediatric" means patients 12 years of age and younger

INFORMATION NEEDED:

Patient History: Fever, sputum production, medications, asthma, COPD, exposures (allergens, toxins, fire/smoke), trauma (blunt/penetrating).
Symptoms: Chest pain, shortness of breath, cough, inability to speak in full sentences.

OBJECTIVE FINDINGS:

Respiratory rate (less than 10 or greater than 30), rhythm (abnormal pattern, shallow) effort (labored), lung sounds (wheezing, stridor), cough, fever, spitting/coughing blood or pink froth, barking.
Rash, urticaria, heart rate, blood pressure, skin signs, mental status, evidence of trauma, anxiety and restlessness.

TREATMENT:

1. Reassure patient and place in position of comfort or supine if hypotensive.
2. Primary Survey – ensure ABC's.
3. Ensure ALS Response.
4. Monitor SpO2.
5. Administer oxygen for shortness of breath or signs of hypoxia: Oxygen 10-15 L/min via non-rebreathing mask. Patients with ineffective respirations: support ventilations with BVM and oropharyngeal airway~~airway~~ or nasopharyngeal airway if gag still present. ~~.~~
6. Suction as needed.
7. **EMT**: Assist patient in using their own prescribed respiratory inhaler medications.
~~7.~~8. **EMT:** For adult patients with no gag reflex insert iGel and ventilate with BVM.
~~8.~~9. Following specific treatment: Secondary Survey and Routine Medical Care.

Specific treatments:

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~~9.~~10. Upper airway obstruction: Relieve obstruction by positioning, suction, abdominal thrusts; infants use back blows and chest thrusts instead of abdominal thrusts.

~~10.~~11. Chest wound: Cover open chest wound with occlusive dressing taped on three sides.

~~11.~~12. **For pediatric patient** with signs and symptoms of epiglottitis (recent infection, fever, stridor, quiet crying, excessive drooling, use of accessory muscles):

A) Allow parent to hold child.
B) Have the parent administer high flow/blow by humidified oxygen to child.
C) Immediate transport to closest facility. Refrain from siren use if possible.
D) **DO NOT** place anything in the mouth or attempt visualization of airway.

~~12.~~13. **For pediatric patient** with signs and symptoms of croup (mild fever, hoarseness, seal bark coughing, respiratory distress, restlessness, pale and cyanotic): A) Place child in position of comfort (generally sitting); B) Cool night air may help reduce edema in the airway tissues.

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BLS NAUSEA / VOMITING

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 3.1, Sections 100066.01

INFORMATION NEEDED:

Discomfort: location, quality, severity, onset of symptoms, duration, aggravation, alleviation.
Associated symptoms: nausea, emesis, diarrhea, fever, diaphoresis, vertigo, "heart burn".
Gastrointestinal: time and description of last meal, time of last bowel movement, signs of blood in stool.
Gynecological: date of last menstrual period, possible pregnancy, history of vaginal bleeding.
Medical history: surgery, related diagnosis (infection, hepatitis, stones, etc.), medication (OTC and prescribed), self-administered remedies (baking soda, Epsom salts, enemas).

OBJECTIVE FINDINGS:

General appearance: level of distress, skin color, diaphoresis.
Abdominal tenderness: guarding, rigidity, distention, rebound Pulsating masses (aneurysm).

TREATMENT:

1. Primary Survey – ensure ABC's.
2. Place patient in position of comfort or supine with legs elevated if patient is hypotensive.
3. Monitor SpO2.
4. Administer oxygen for shortness of breath or signs of hypoxia: Oxygen 10-15 L/min via non-rebreathing mask. Patients with ineffective respirations: support ventilations with BVM and airway.
5. ~~**Transport providers only:**~~ For persistent nausea ~~/~~ vomiting in for patients older than > 6 months~~the adult (≥ 18 years) non pregnant patient~~:
   a. Ondansetron 4 mg oral dissolving tablet (ODT).
   b. Advise patients not to swallow ODT and allow medication to dissolve in mouth.
6. Secondary Survey and Routine Medical Care.

Note: Completion of a thorough secondary exam and patient history are essential to identify potential cardiac involvement or early signs of shock.

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** Contact the base hospital if additional orders are needed or the patient has atypical presentation.

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BLS Allergic Reaction - Anaphylaxis

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 2, Sections 100062, 100063, 100064

INFORMATION NEEDED:

History of exposure to allergen, such as, but not limited to: bee/wasp stings, drugs or medication, nuts, seafood, new food consumed (especially infants), prior allergic reactions.

OBJECTIVE FINDINGS:

Mild: Hives, rash, itching, anxiety.
Moderate: Hives, rash, bronchospasm, wheezing, nausea.
Severe: Respiratory distress, chest tightness, difficulty swallowing, altered mental status, signs of shock.

TREATMENT:

1. Primary Survey – ensure ABC's.
2. Remove patient from contact with allergen and environment if warranted.
3. Confirm ALS transport is responding.
4. For mild reactions:
   a. Adults: Diphenhydramine 50mg PO
   b. Pediatrics: > 2 years Diphenhydramine 1mg/kg PO, max dose of 50mg

~~4.~~5. For moderate to severe reactions:
   a. Adults: Diphenhydramine 50mg PO
   b. Pediatrics: > 2 years, Diphenhydramine 1mg/kg PO, max dose of 50mg

   ~~a.~~c. Assist patient with taking their own prescribed anaphylaxis medications such as bee sting kit (epinephrine, diphenhydramine, antihistamine) or beta-2 inhaler.

   ~~b.~~d. EMT: Administer Epinephrine Auto-Injector in lateral thigh:
      i. Contraindications: Chest pain or history of prior myocardial infarction.
      ii. Dose:
         1. Adult dose (greater than ~~66 lbs~~30 kg and less than 66 years old) EpiPen Auto-Injector 0.3mg. Do not repeat dose.
         2. Pediatric dose (less than ~~66 lbs~~30 kg greater than 6 months of age) EpiPen Jr. Auto-Injector 0.15mg. Do not repeat dose.

~~5.~~6. Monitor SpO2.

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~~6.~~7. Administer oxygen for shortness of breath or signs of hypoxia: Oxygen 10-15 L/min via non-rebreathing mask. A patient with ineffective respirations: support ventilations with BVM and appropriate airway adjunct.

~~7.~~8. Secondary Survey and Routine Medical Care.

9. Treat for shock as appropriate.

CONSIDERATION:

1. If patient has received an EpiPen prior to arrival and is asymptomatic administer Diphenhydramine 50mg PO for adults or Diphenhydramine 1mg/kg PO, max dose of 50mg for pediatrics.

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BLS Bites and Stings

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 2, Sections 100062, 100063, 100064

INFORMATION NEEDED:

Type of animal or insect; time of exposure.
History of previous exposures, allergic reactions, any known specific allergen.
Wound site: puncture marks, teeth marks, stinger.
For snake bites, refer to EMS Policy No. 5553, BLS Snake Bites.

OBJECTIVE FINDINGS:

Local Reaction: rash, hives; localized redness and swelling; skin at wound area hot to touch; decreased pain or sense of touch.

Systemic Reaction: Any or all localized findings; respiratory distress, wheezing, stridor; diaphoresis; decreased blood pressure; tachycardia; rapid respirations.

TREATMENT:

1. Ensure personal safety.
2. Primary Survey – ensure ABC's.
3. Remove insect stinger using a scraping motion, do not squeeze venom sac
4. For mild reactions:
    a. Adults: Diphenhydramine 50mg PO
    ~~a.~~b. Pediatrics: > 2 years Diphenhydramine 1mg/kg PO, max dose of 50mg
~~4.~~5. For moderate to severe reactions or anaphylaxis:
    a. Adults: Diphenhydramine 50mg PO
    b. Pediatrics: > 2 years Diphenhydramine 1mg/kg PO, max dose of 50mg
    ~~a.~~c. Assist patient with taking their own prescribed Allergic Reaction medications such as bee sting kit (epinephrine, ~~diphenhydramine,~~ antihistamine) or beta-2 inhaler.
    ~~b.~~d. ~~Enhanced Skills EMT~~: Administer Epinephrine Auto-Injector in lateral thigh:
        i. Contraindications: Chest pain or history of prior myocardial infarction.
        ii. Dose:

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1. Adult dose (greater than ~~66 lbs~~3o - kg and less than 66 years old) EpiPen Auto-Injector 0.3mg. Do not repeat dose.
2. Pediatric dose (less than ~~66 lbs~~30 kg, greater than 6 months of age) ~~Epipen~~EpiPen Jr. Auto-Injector 0.15mg. Do not repeat dose.

~~5.~~6. Monitor SpO2.

~~6.~~7. Administer oxygen for shortness of breath or signs of hypoxia: Oxygen 10-15 L/min via non-rebreathing mask. Patients with ineffective respirations: support ventilations with BVM and airway.

~~7.~~8. Cold packs may be applied for pain (avoid placing ice directly on skin).

~~8.~~9. Dress wounds with gauze as needed.

~~9.~~10. Secondary Survey and Routine Medical Care.

Considerations

1) Notify animal control and law enforcement of all animal bites.
2) If safe, package the insect or spider for transport and positive identification.
3) All bites (dog, cat, human, etc) need to be transported for further evaluation at a hospital for proper cleansing and potential antibiotic therapy.
4) The time since envenomation is important as anaphylaxis rarely occurs more than 60 minutes after envenomation.
~~4)~~5) If patient has received an EpiPen prior to arrival and is asymptomatic administer Diphenhydramine 50mg PO for adults or Diphenhydramine 1mg/kg PO, max dose of 50mg for pediatrics.

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BLS Pain Management

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.60, 1797.80, 1797.197, 1797.197a, 1797.204, 1797.220, 1798; California Code of Regulations, Title 22, Chapter 2, Sections 100062, 100063, 100064

PURPOSE: This protocol is intended for the treatment of pain associated with traumatic injuries, burns, or medical conditions that cause significant **ACUTE** non-cardiac pain or **SEVERE exacerbation** of chronic pain.

OBJECTIVE FINDINGS:

1. Signs and symptoms
    a. Guarding
    b. Grimacing
    c. Deformity
    d. Swelling
    e. Diaphoresis
    f. Splinting
2. Comorbidities
    a. Recent traumatic event
    b. Chronic pain

TREATMENT:

1. Elevate as appropriate.
2. Ice as appropriate.
3. Position as appropriate. Stabilize as appropriate.
4. Adults:
    a. Acetaminophen 650mg PO OR
    b. Ibuprofen 400mg PO withhold if pregnant.
5. Pediatrics:
    a. >3 months, Acetaminophen 15 mg/kg PO, max 650 mg withhold if had in last 4 hours OR
    b. > 6 months, Ibuprofen 10mg/kg PO, max 400mg, withhold if given in last 6 hours.
6. Assess and document pain scale before and after intervention or if condition changes.
7. No repeat dose of acetaminophen or ibuprofen shall be given.

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Emergency Medical Services Agency

Advanced Life Support Treatment Protocols
EMS Policy No. 5700



Jessica K. Willett~~Katherine Shafer~~, M.D., EMS Medical Director

Version ~~1.9.2.1~~2.0 - Effective: July 1, 2027~~May 1, 2026~~

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Protocol Numbering

All protocols have a six-character alphanumeric identifier that is a combination of age, section abbreviation and number in sequence (Fig 10). The first letter of the identifier is either “A” or “P,” which signifies adult or pediatric. The next three (3) letters are abbreviations of the section followed by a two (2) digit number of the protocols in alphabetical order in that section. For example, ARSP-02, means Adult-Respiratory number two.

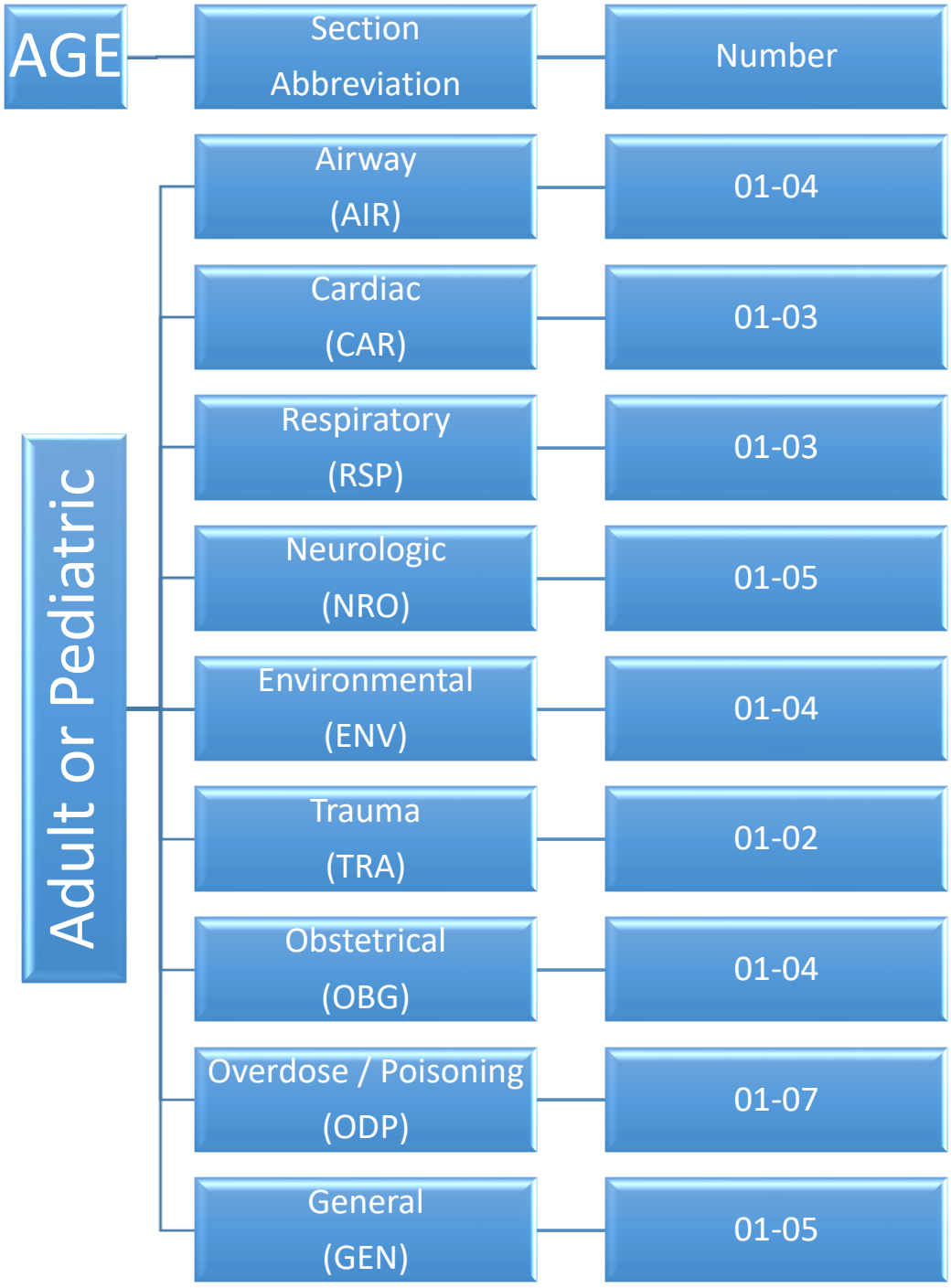


Figure 1

Routine Patient Care

Routine Patient Care

This protocol applies to all patients. The patient assessment primary survey is to identify and correct immediate life threats. 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 the initiation of Routine Medical Care. The purpose of the secondary survey is to identify problems, which though not immediately life or limb threatening, could increase patient morbidity and mortality. Exposure of the patient for examination may be reduced or modified as indicated due to environmental factors.

Definitions:

1. **Standard Precautions**- means the application of body substance isolation precautions including the use of appropriate personal protective equipment (PPE) shall apply to all patients receiving care, regardless of their diagnosis or presumed infectious status. Body substance isolation precautions apply to 1) blood; 2) all bodily fluids, secretions, and excretions except sweat, regardless of whether or not they contain visible blood; 3) non intact skin; and 4) mucous membranes. Standard precautions are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in the prehospital setting.
2. **Adult Patient**- means a patient 13 years of age or older, or taller than a weight-based assessment tape (146.5 cm).
3. **Weight-based assessment tape Pediatric Emergency Tape**- means a pediatric length-based resuscitation tape used to determine drug doses, fluid volumes, defibrillation settings, and equipment sizes. The tape is designed to estimate a child's weight based on length (head to heel). The tape should also include information about vital signs.
4. **Pediatric Patient**- means a patient that is twelve (12) years of age or younger and is not taller than a weight-based assessment tape (146.5 cm).

Note: If in doubt concerning whether to treat a patient as an adult or pediatric (i.e., obese child) treat as pediatric.

5. **Neonate/newborn**- means a pediatric patient from birth to one month of age.
6. **Infant** means a pediatric patient from one month to one year of age.
7. **Child**- means a pediatric patient from one year to twelve years of age.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients every 3 minutes for ROSC patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. Physical assessment.
3. All additional Documentation Standards outlined in each protocol.

Routine Patient Care

Treatment

1. Use Standard Precautions:
   A. Application of body substance isolation precautions including the use of appropriate personal protective equipment (PPE) shall apply to all patients receiving care.
   B. Body substance isolation precautions apply to:
      i. Blood.
      ii. All bodily fluids, secretions, and excretions except sweat, regardless of whether or not they contain visible blood.
      iii. Non intact skin.
      iv. Mucous membranes.
2. Perform a complete patient assessment including:
   A. Primary Survey.
   B. Secondary Survey.
3. Initiate specific treatments in accordance with San Joaquin County Emergency Medical Services Agency Treatment protocols including, when appropriate:
   A. Monitor vital signs:
      i. Initial set.
      ii. Repeat every 5 minutes for unstable patients.
      iii. Repeat every 10 minutes for stable patients.
   B. Initiate spinal precautions, if indicated.
   C. Administer oxygen.
   D. Control hemorrhage.
   E. Cardiac monitor.
   F. Administer IV access as indicated (may use saline lock when appropriate).
   G. Obtain blood glucose level, as indicated
4. Transport.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Routine Patient Care

Patient Assessment **Primary** Survey

Scene Size Up:

1. Recognize hazards, ensure safety of scene and secure a safe area for treatment.
2. Apply universal body substance isolation precautions.
3. Recognize hazards to patient and protect patient from further injury.
4. Identify the number of patients and initiate ICS/MCI operations if warranted:
   A. Ensure an ALS ambulance response and order additional resources.
   B. Consider initiating S.T.A.R.T. triage.
5. Observe position of patient(s).
6. Determine mechanism of injury.
7. Plan strategy to protect evidence at potential crime scene.

General Impressions:

1. Check for life threatening conditions.
2. Introduce self to patient, and determine chief complaint or mechanism of injury

Circulation:

1. Check for pulse. If no pulse, start CPR, See protocol ACAR-04.
2. Defibrillate as necessary.
3. Control life-threatening hemorrhage with direct pressure and use a tourniquet as appropriate.
4. Palpate radial pulse.
   A. Determine absence or presence.
   B. Assess general quality (strong/weak).
   C. Identify rate (slow, normal, or fast).
   D. Assess regularity (regular/irregular).
5. Assess skin for signs (capillary refill, cyanosis, mottling, etc.).
6. Reassess mental status for signs of hypo-perfusion/SHOCK.
7. Treat hypo-perfusion
8. Obtain ECG and continually monitor cardiac rhythm as appropriate.

Airway:

1. Ensure open airway; if airway is obstructed refer to protocol AAIR-02 or PAIR-02.
2. Ensuring an adequate airway supersedes spinal immobilization.
3. Protect spine from unnecessary movement in patients at risk for spinal injury.
4. Look and listen for evidence of upper airway problems and potential obstructions:
   A. Vomit.
   B. Bleeding.
   C. Loose, missing teeth or dentures.
   D. Facial trauma.
5. Utilize any appropriate adjuncts OPA/NPA as indicated to maintain airway.

Breathing:

1. Look, listen, and feel in order to assess ventilation and oxygenation.
2. Expose chest, if necessary, and observe for chest wall movement.
3. Determine approximate rate and depth and assess character and quality.
4. Reassess mental status.
5. Intervene for inadequate ventilation with:
   A. BVM device, airway adjunct and supplemental oxygen.
6. Assess for other life threatening respiratory problems and treat as needed.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Routine Patient Care

Patient Assessment **Primary** Survey

Level of consciousness:

1. Information Needed:
   A. Surroundings: for example syringes, blood glucose monitoring supplies, insulin.
   B. Changes in mental status: Baseline status, onset and progression of altered state, symptoms prior to altered state such as headache, seizures, confusion, trauma and last time known well.
   C. Medical History: Diabetes, epilepsy, substance abuse, mental health, medications, allergies.
   D. Identify and document neurological deficits and consider possible stroke, overdose/ intoxication.
2. Considerations:
   A. Potential treatable causes (hypoglycemia, stroke, neurological injury, syncope, overdose, and sepsis) and refer to appropriate protocol.
   B. Consider indications for spinal motion restriction.
3. Objective Findings:
   A. Level of consciousness (AVPU) and neurological assessment.
   B. Signs of trauma.
   C. Breath odor.
   D. Pupil size and reactivity.
   E. Needle track marks.
   F. Medical information tags, bracelets, or medallions.
4. Determine Glasgow Coma Scale (GCS) Score.

Expose, Examine & Evaluate:

1. In situations with suspected life-threatening mechanism of injury, complete a Rapid Trauma Assessment.
2. Expose head, trunk and extremities.
3. Examine Head to Toe for DCAP-BTLS:
   A. Deformity.
   B. Contusion/Crepitus.
   C. Abrasion.
   D. Puncture.
   E. Bruising/Bleeding.
   F. Tenderness.
   G. Laceration.
   H. Swelling.

Obtain base line vital signs:

1. Pulse.
2. Respirations.
3. BP.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Routine Patient Care

Patient Assessment **Secondary** Survey

History:

1. A patient's history should optimally be obtained from the patient directly. If language, culture, age, disability barriers or patient condition interferes with obtaining the history, consult with family members, significant others or scene bystanders. Check for advanced directives such as a DNR order, Medic-Alert bracelet and prescription bottles as appropriate. Be aware of the patient's environment and issues such as domestic violence, possible human trafficking victim, child or elder abuse or neglect and report concerns. The following information should be obtained during the history:
   A. Allergies.
   B. Medications.
   C. Past medical history relevant to the chief complaint.
   D. Have patient prioritize his or her chief complaint if complaining of multiple problems.
   E. Last time known well (clock time).
   F. Ascertain recent medical history such as hospital admissions, surgeries, etc.
   G. Mechanism of injury if appropriate.
   H. In addition, obtain history relevant to specific patient complaints.

Head and Face:

1. Observe and palpate skull (anterior and posterior) and face for DCAP-BTLS.
2. Check eyes for equality, responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses or prosthetic eyes.
3. Check nose and ears for foreign bodies, fluid or blood.
4. Recheck mouth for potential airway obstructions (swelling, dentures, bleeding, loose or avulsed teeth, vomit, absent or present gag reflex) and odors, altered voice or speech patterns and evidence of dehydration.

Neck:

1. Observe and palpate for DCAP-BTLS, jugular vein distension, use of neck muscles for breathing, tracheal tugging, tracheal shift, stoma and medical information medallions.

Chest:

1. Observe and palpate for DCAP-BTLS, scars, implanted devices such as pacemakers and indwelling IV/arterial catheters, medication patches, chest wall movement, asymmetry and accessory muscle use in breathing.
2. Have patient take a deep breath if possible and observe and palpate for signs of discomfort, asymmetry and air leak from any wound.
3. Assess lung sounds and heart tones as appropriate.

Abdomen:

1. Observe and palpate for DCAP-BTLS, scars and distention.
2. Palpation should occur in all four quadrants taking special note of tenderness, masses and rigidity.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Routine Patient Care

Patient Assessment **Secondary** Survey Continued

Pelvis/Genital-Urinary:

1. Generally, a patient's genital area should not be exposed and examined unless the assessment of this body region is required due to the patient's condition, such as trauma to the region, active labor or suspected/known bleeding. When possible have an EMT or paramedic of the same gender as the patient, perform evaluations of the pelvis/genital area.
2. Observe and palpate for DCAP-BTLS, asymmetry, sacral edema and as indicated for other abnormalities.
3. Palpate and gently compress lateral pelvic rims and symphysis pubis for tenderness, crepitus or instability.
4. Palpate for bilateral femoral masses, if warranted.

Shoulder and Upper Extremities:

1. Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, medical information bracelet, and equality of distal pulses.
2. Assess sensory and motor function as indicated.

Lower Extremities:

1. Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema and equality of distal pulses.
2. Assess sensory and motor function as indicated.

Back:

1. Observe and palpate for DCAP-BTLS, asymmetry and sacral edema.

Precautions and Comments:

1. Observation and palpation can be done while gathering a patient's history.
2. A systematic approach will enable the rescuer to be rapid and thorough and not miss subtle findings that may become life threatening.
3. Minimize scene times, especially with trauma patients and pediatrics, by packaging/preparing the patient for immediate transport upon ambulance or air ambulance arrival (spinal stabilization, pediatric immobilization device, ensuring rapid ingress/egress for BLS personnel and equipment.)
4. The secondary survey should **ONLY** be interrupted if the patient experiences airway, breathing or circulation deterioration requiring immediate intervention. Complete the examination before treating other identified non-life threatening problems.
5. Reassessment of vital signs and other observations are necessary, particularly in critical or rapidly changing patients. Vital signs should be taken approximately every 5 minutes. Changes and trends observed in the field are essential data to be documented and communicated to the transport personnel or receiving facility.
6. As stated in the Primary Survey DCAP-BTLS is a mnemonic that stands for:
   A. Deformity.
   B. Contusion/Crepitus.
   C. Abrasion.
   D. Puncture.
   E. Bruising/Bleeding.
   F. Tenderness.
   G. Laceration.
   H. Swelling.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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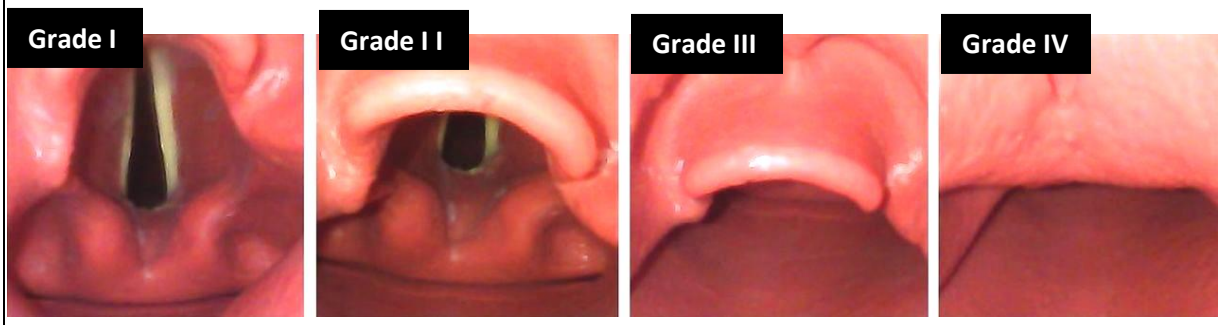
Adult Airway Management

Advanced Airway Management

Definitions:

1. **Oral Tracheal Intubation (OTI) Attempt -** Means the introduction of an Endotracheal Tube Inducer (ETTI) or endotracheal tube past the patient's teeth.
2. **Difficult Airway -** Means an airway that has been predicted to be difficult based on assessment of the patient or upon an attempt to visualize the cords and the patient has a Cormack-Lehane (CL) grade of three (3) or four (4).

Cormack and Lehane Classification Grades of Difficult Laryngoscopy	
Grade I	Most of glottis is seen
Grade II	Only posterior portion of glottis can be seen
Grade III	Only epiglottis may be seen (none of glottis seen)
Grade IV	Neither epiglottis nor glottis can be seen



3. **"Successful OTI Attempt"** - Means a verified placement and securing of the endotracheal tube into the patient's trachea.

Documentation Standards:

Oral tracheal intubation confirmation:
1. Visualization of tube through cords.
2. Condensation in ETT.
3. Capnography value and waveform.
4. Bilateral lung sounds.
5. Negative epigastric sounds.
6. Positive chest rise.

Every 5 minutes and on gross patient movement:
1. Capnography value and waveform.
2. Bilateral lung sounds.
3. Negative epigastric sounds.
4. Positive chest rise.

At transfer of care:
1. Capnography value and waveform.
2. Bilateral lung sounds.
3. Negative epigastric sounds.
4. Positive chest rise.
5. Name of receiving paramedic or ED physician.

Supraglottic airway confirmation:
1. Capnography value and waveform.
2. Bilateral lung sounds.
3. Minimal epigastric sounds.
4. Positive chest rise.

Every 5 minutes and on gross patient movement:
1. Capnography value and waveform.
2. Bilateral lung sounds.
3. Minimal epigastric sounds.
4. Positive chest rise.

At transfer of care:
1. Capnography value and waveform.
2. Bilateral lung sounds.
3. Minimal epigastric sounds.
4. Positive chest rise.
5. Name of receiving paramedic or ED physician.

Advanced Airway Management

Indications and procedure for Oral Tracheal Intubation

1. Inability of the patient to protect their airway (coma, decreased level of consciousness with loss of gag reflex).
2. Inability to adequately ventilate or oxygenate the patient using an OPA and BVM device.
3. Cardiac arrest. Adhere to sequence as specified in EMS Protocol ACAR-04.
4. Respiratory arrest.

DO NOT perform if gag is present.

1. Initiate BLS airway as needed before attempting advanced airway.
~~1.~~2. If an i-Gel has been placed do not remove to intubate unless there is poor compliance with ventilation.
~~2.~~3. Prepare equipment and position patient with the intent to provide an airway via either an endotracheal tube or via a supraglottic airway.
~~3.~~4. Upon a determination that the patient has a Cormack-Lehane grade of one (1) or two (2), attempt to insert an endotracheal tube as described in EMS Policy No. 2545 – Endotracheal Intubation – Adult. If patient has a Cormack-Lehane grade of (3) reposition the head and revisualize. If still a Cormack-Lehane grade of (3) see below.
~~4.~~5. A stylet or endotracheal tube inducer (ETTI) **SHALL BE USED ON ALL ATTEMPTS**.
~~5.~~6. No more than two (2) attempts per patient with pre-oxygenation and continuous oximetry monitoring prior to each attempt.
~~6.~~7. After two (2) unsuccessful attempts at endotracheal intubation, insert a supraglottic airway.
~~7.~~8. Each attempt should last no longer than thirty (30) seconds. If during any attempt patient SpO2 falls below 90%, immediately cease and ventilate to increase saturation.
~~8.~~9. Ventilate with 100% oxygen for one (1) minute prior to attempting to intubate.
~~9.~~10. Monitor pulse oximetry continuously.

Indications and procedure for Supraglottic Airway Device

1. Cormack-Lehane grade of 3 or 4 on oral tracheal visualization.
2. Physical or physiological impediments to the successful insertion of an endotracheal tube.
3. After two unsuccessful attempts to insert an endotracheal tube.
~~4.~~ Use a laryngoscope to facilitate placement.
~~5.~~4.

Note:

1. Remove and replace the I-Gel Airway if resistance is met upon initial insertion.
~~2.~~ After two (2) unsuccessful attempts, place a BLS airway and transport to the closest receiving hospital.
~~3.~~2.

INDICATIONS FOR NEEDLE CRICOTHYROTOMY

1. Complete airway obstruction not relieved by airway adjuncts, positioning and direct laryngoscopy to remove obstruction. See protocol AAIR-02.

Considerations

1. **DO NOT** delay transport to establish an advanced airway in patients except in the case of complete airway obstruction, as evidenced by a complete inability to ventilate the patient using an Oral Pharyngeal Airway (OPA) and BVM device.
2. If unable to establish an airway due to complete airway obstruction not relieved using an OPA and BVM maneuvers, use direct laryngoscopy to visualize airway if patient is unconscious and remove foreign body with Magill's forceps. See protocol AAIR-02, and transport to closest receiving hospital.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Airway Obstruction

Definitions:

1. **Partial Airway Obstruction-** Difficulty breathing but still able to ventilate.
2. **Severe Airway Obstruction-** Poor air exchange increased breathing difficulty, silent cough, cyanosis, and/or inability to speak or breathe.
3. **Adult Patient**- Means a patient 13 years of age or older, or taller than a weight-based assessment tape (146.5 cm.)

Documentation Standards:

1. Every 10 minutes for stable patients, every 5 minutes for unstable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. Complete physical assessment.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Holding neck (universal choking sign). 2. Silent cough. 3. Stridor. 4. Inability to speak. 5. Drooling.	1. Nothing by mouth, (NPO orders). 2. CVA. 3. Brain injury. 4. Choking episode. 5. Coughing while eating. 6. Dementia.	1. Epiglottitis. 2. Esophageal obstruction. 3. Subglottic stenosis. 4. Vocal cord dysfunction. 5. Retro pharyngeal abscess.

Airway Obstruction

Treatment- Partial Obstruction

1. Cardiac monitor.
2. Monitor SpO2, if <94%, 1-15 LPM, O2, NC or NRB, titrate to 94%.
3. Suction as needed.
4. Encourage patient to cough.

Treatment - Severe Obstruction

If awake and alert:

1. Perform abdominal thrusts.
2. Remove foreign body.
3. Cardiac monitor.
4. Monitor SpO2.

If unconscious:

1. Place patient on ground and initiate chest thrusts.
2. Remove foreign body with direct laryngoscopy and Magill forceps.
3. Assist ventilations with BVM.
4. Cardiac monitor.
5. Monitor SpO2.

If unable to remove foreign body:

1. Attempt endotracheal intubation.

If unable to intubate and unable to ventilate adequately with BVM:

1. Perform needle cricothyrotomy.

Considerations

1. Avoid sedating medication.
2. Make early receiving hospital notification for unresolved obstruction.
3. Keep patient calm.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Mechanical Ventilation for Patients with Pulses

Definitions:

The purpose of this protocol is to authorize paramedics to use and monitor mechanical ventilators during prehospital transport for ROSC patients and respiratory arrest patients with a pulse that are greater than 50 kg.

Documentation Standards:

1. Every 5 minutes for unstable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. Complete physical assessment.
3. Ventilator settings listed below every 5 minutes.

Ventilator Settings

Modes	Values
SIMV- (Synchronized Intermittent Mechanical Ventilation) is a type of volume control mode of ventilation. With this mode, the ventilator will deliver a mandatory (set) number of breaths with a set volume while at the same time allowing spontaneous breaths. **AC-** (Assist Control) **Not currently approved for prehospital use.** A mode of mechanical respiration in which all breaths are mandatory and are machine triggered, and machine cycled; a minimum breathing rate is set but the patient can trigger breaths at a faster pace. **PS-** (Pressure Support) Provides ventilation based on a preset pressure. **VS-** (Volume Support) Provides Ventilation based on a preset volume. **CPAP-** (Continuous Positive Airway Pressure) See AAIR-04. **BL-** (Bilevel) **Not currently approved for pre hospital use.** Non-invasive ventilation used to support breathing administered through a face mask, nasal mask, or a helmet.	Ventilator Settings: **VT-** (Tidal Volume) 400-450ml **FiO2-** (Fraction of Inspired Oxygen) 70-100% **RR-** (Ventilation Rate) “BPM” on Zoll Z Vent. 16/m **PEEP-** (Positive End Expiratory Pressure) 5-8 cm of H2O **PIP-** **(Peak Inspiratory Pressure) 40 cm of H2O **I:E-** ** (Inspiratory to Expiratory Ratio) 1:3 **PS**- (Pressure Support) 10cm of H2O Alarms: **PIP-** **Peak Inspiratory Pressure High:30 cm of H2O Low:10 cm of H2O **VT-** **Tidal Volume High:625ml Low:225ml **RR-** **(Ventilation Rate) “BPM” on Zoll Z Vent. High:26 Low:8 ****Not currently approved for adjustment in this protocol.**

Mechanical Ventilation for Patients with Pulses

Procedure

1. Turn on ventilator and complete system self-check.
2. Connect patient to mechanical ventilator using appropriate ventilator circuit.
3. SpO2 must be used to continuously monitor the patient's oxygen saturation.
4. Treat the patient according to appropriate treatment policy (i.e. pulmonary edema).

Initial Ventilator Settings

50 to 75Kg	**>75kg**
5. Mode: SIMV (V); 6. RR: 16 for medical 24 for trauma; 7. Tidal Volume: 400ml 8. PEEP: 5cm of H20; 9. FiO2: 100%; 10. Pressure Support: 10; 11. Trigger Level -2.0; 12. I:E Ratio: 1:3.0.	5. Mode: SIMV (V); 6. RR: 16 for medical 24 for trauma; 7. Tidal Volume: 450ml 8. PEEP: 5cm of H20; 9. FiO2: 100%; 10. Pressure Support: 10; 11. Trigger Level -2.0; 12. I:E Ratio: 1:3.0.

13. Patient must be placed on continuous capnography and capnography monitoring during mechanical ventilation.
14. **High or Low EtCO2**- During transport, adjust BPM to keep EtCO2 between 35-45.
    a. To decrease EtCO2: increase RR by 2 every 2 min to a max of 24 RR.
    b. To increase EtCO2: decrease RR by 2 every 2 min to a min of 8 RR.

IF transport time is greater than 20 min:

1. If arrest is secondary to CHF and lung sounds have rales or pink sputum is in the ETT and SpO2 remains below 90%:
    c. **Increase PEEP to 8 cm of H2O.**
2. FiO2- Titrate Oxygen with the objective to use as little O2 as possible to maintain SpO2 92-98%,
    d. **Decreased by 10% every 5 minutes to no less than 70%** If patient is unable to maintain SpO2 above 94%: **Immediately increase FiO2 to 100%.**

Troubleshooting

DOPE- When in doubt return to BVM Ventilations!!!

1. Dislodgment;
2. Obstruction;
3. Pulmonary embolism / tension pneumothorax;
4. Equipment;

****If unable to clear any alarm with 4 or less actions or button pushes, return to BVM ventilations!!**

Sedation of Intubated Patients

1. If below Inclusion and Exclusion criteria are met: midazolam 2-5mg IV/IO, may repeat once in 10 min.

Inclusion Criteria	Exclusion Criteria
1. EtCO2 greater than 30mmHg; 2. SpO2 greater than 88%; 3. Pt showing purposeful movement, or signs of agitation such as over breathing the ventilator, or increased HR.	1. Pulse <50 or >160bmp; 2. SBP <100 or >200;

Base hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

CPAP via Ventilator

Definitions:

The goal of CPAP is to improve ventilation and oxygenation in an effort to avoid intubation in patients who present with severe respiratory distress.

A. Assessment/Treatment Indicators: CPAP is authorized for use in patients who are age eight (8) or older with one of the following:
   1. Congestive Heart Failure (CHF) with acute pulmonary edema;
   2. Near drowning/submersion;
   3. Other causes of severe respiratory distress, excluding trauma.

B. Contraindications:
   1. Respiratory or cardiac arrest;
   2. Failing respirations;
   3. Inability to maintain airway;
   4. Severely depressed level of consciousness (LOC);
   5. Systolic blood pressure < 90mmHg;
   6. Signs and symptoms of pneumothorax;
   7. Major trauma, especially head injury or suspected chest injury;
   8. Facial anomalies or inability to obtain a mask seal.

C. Relative Contraindications:
   1. Decreased LOC;
   2. Claustrophobia;
   3. Unable to tolerate mask.

Documentation Standards:

4. Every 5 minutes for unstable patients:
   A. BP;
   B. Respirations;
   C. Pulse;
   D. SpO2.
5. Complete physical assessment.

Objective Findings:

Signs & Symptoms	Equipment Needed	Differentials
1. Peripheral pitting edema. 2. Dyspnea that worsens with activity or when lying down. 3. Wheezing or gasping for breath. 4. Cold, clammy skin. 5. Anxiety, restlessness. 6. A cough that produces frothy sputum that may be tinged with blood. 7. Blue-tinged lips. 8. A rapid, irregular heartbeat (palpitations). 9. Difficulty breathing with exertion. 10. Swelling in lower extremities.	1. CPAP (pressure generator and circuit set with ability to deliver 7.5 cm to 10 cm of H20 pressure with appropriate sized facemask and straps). 2. Nebulizer, if required for bronchodilator administration. 3. Oxygen source. 4. Cardiac monitor.	1. Congestive Heart Failure (CHF) with acute pulmonary edema. 2. Near drowning/submersion. 3. Other causes of severe respiratory distress, excluding trauma.

CPAP via Ventilator

1. Position the patient in a seated position with legs dependent.
2. Apply cardiac monitor and assess vital signs.
3. SpO2 must be used to continuously monitor the patient's oxygen saturation.
4. Treat the patient according to appropriate treatment policy (i.e. pulmonary edema).
5. Set up the CPAP system following manufacturer directions.
6. Explain the procedure to the patient.
7. **It is important to reassure the patient throughout the procedure.**
8. Verify that oxygen is flowing to the mask and then apply mask.
9. **Initial Ventilator Settings:**
    a. Mode: CPAP
    b. BPM: 12 or *default*;
    c. PEEP: 5cm of H20;
    d. FiO2: 100%;
    e. Pressure Support: 0;
    f. Trigger Level -2.0;
    g. I:E Ratio: 1:3.0.
10. Continuously monitor patient for improvement or failure to improve.
11. The patient should improve in the first five minutes with CPAP, evidenced by decreased heart rate and blood pressure, decreased respiratory rate and an increased SpO2.
12. If the patient does not improve or becomes worse with CPAP, remove the CPAP device and assist ventilations with BVM as needed.
13. Notify the receiving hospital of the type of CPAP device that is being used.

Troubleshooting

If time constraints allow

1. **Trouble Triggering Breath:** If patient is A/Ox4 and able to breath on their own and appears to be struggling to trigger a breath: **Decrease trigger level to -1.0, and increase pressure support to 5cm of H2O.**
2. **Condition Not Improving:**
    a. If after 5 min condition is not improving PEEP may be: **increased in increments of 2cm of H2O every 5 minutes to max of 10cm of H2O**.
    b. If after 3 min condition is not improving or patient expresses a need for more air pressure or shows signs of air hunger: **increase pressure support (PS) by 5 every 3 minutes to a max of 10.**
3. **Extended Transport Time:** If transport is greater than 20 minutes and patient is tolerating CPAP and shortness of breath is improving and SpO2 is above 94%: **FiO2 can be decreased by 10% every 5 minutes to no less than 70%.** If patient is unable to maintain SpO2 above 94%: **Immediately increase FiO2 to 100%.**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Adult Cardiac

Atrial Fibrillation / Atrial Flutter

Atrial Fib: The rhythm is irregularly irregular. Atrial rate can be 350 to 600 but as a rule cannot be counted. Ventricular rate can be between 160 and 180. QRS complex is usually normal. Some patients may alternate between atrial fibrillation and atrial flutter.
Atrial Flutter: Atrial rhythm should be regular and can appear to have a "saw tooth" pattern. Ventricular rhythm may be regular or irregular if variable block is present. Ventricular rate 140 to 160, but may be slower. QRS complex usually normal and may follow every second, third or fourth flutter wave. Some patients may alternate between atrial fibrillation and atrial flutter.

Definitions:

1. **Asymptomatic-** Patient has no complaints related to heart rate.
2. **Mildly symptomatic-** Patient is symptomatic and hemodynamically stable. May have palpitations, fatigue or near syncope.
3. **Grossly symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. Must have ALOC, chest pain, **or** hypotension.

Documentation standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2
2. Obtain
   A. 12 Lead ECG.
   B. Pain scale PRN
3. Physical assessment.
4. Skin signs.
5. Duration of symptoms.
6. Frequency of symptoms.
7. Precipitating factors (e.g., exertion, sleep, caffeine, alcohol use).

Objective Findings**:**

Signs & Symptoms	Comorbidities	Differentials
1. Elevated pulse. 2. JVD. 3. Cyanosis to lips or fingers. 4. Pulmonary or peripheral edema. 5. Thready pulse.	1. A-Fib or A-Flutter. 2. Myocardial infarction. 3. Hypertension. 4. Coronary artery bypass grafting (CABG). 5. Recent heavy drinking. 6. Weight loss. Home Meds: 1. Blood thinners. 2. Rate-controlling agents: A. Antiarrhythmic. B. Beta blockers C. Calcium channel blockers.	1. SVT. 2. AMI. 3. Sepsis. 4. Electrical abnormality. 5. Holiday heart syndrome. 6. Thyroid storm. 7. Wolf Parkinson White.

Atrial Fibrillation / Atrial Flutter

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 lead ECG.

Treatment #1- Asymptomatic:
DO NOT start IV/IO solely for presence of A-Fib/A-Flutter if patient is asymptomatic.

Treatment #2- Mildly Symptomatic:
1. IV, NS, TKO.
2. May consider IVF bolus If no fluid restrictions and lung sounds are without crackles and/or rales:
   500ml, NS Fluid, may repeat max 1L.

Treatment #3- Grossly Symptomatic:
1. IV/IO.
2. NS 500ml rapid IVF bolus to MAP > 60, may repeat, max 1L.
3. If remains hypotensive with rapid ventricular response, BHO for synchronized cardioversion.

Considerations:
1. Patients are rarely hemodynamically unstable from A-Fib or A-Flutter unless rapid HR with RVR.
2. Field synchronized cardioversion should be avoided if patient is stable enough to make it to ED.
3. It is imperative to rule out other causes, such as sepsis, ALOC or low BP.

Base Hospital Orders

1. Synchronized cardioversion 100J.
2. Additional NS beyond 1L.
3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Bradycardia

Bradycardia is characterized by a decrease in the in heart rate. This can be caused by a multitude of problems ranging from a decrease in atrial depolarization due to slowing of the sinus node or AV blocks. It may be secondary to sinus node disease, increased parasympathetic tone **or** drug effects (e.g., digitalis, propranolol or verapamil.) The rhythm is regular **or** slightly irregular with the heart rate below 60 beats per minute.

Definitions:

1. **Asymptomatic-** Patient has no complaints related to heart rate.
2. **Mildly symptomatic-** Patient is symptomatic and hemodynamically stable.
3. **Grossly symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, chest pain or hypotension related to a slow heart rate).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2
2. Obtain:
   A. 12 lead ECG.
   B. Blood glucose level, if diabetic.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Skin signs, including capillary refill time.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Syncope. 2. Dizziness or lightheadedness. 3. Fatigue. 4. Shortness of breath. 5. Chest pains. 6. Confusion or memory problems. 7. Easily tiring during physical activity.	1. Damage to heart tissues from heart disease or heart attack. 2. Congenital heart defect. 3. Infection of heart tissue (myocarditis). 4. A complication of heart surgery. 5. Imbalance of chemicals in the blood, such as potassium or calcium. 6. Medications, including some drugs for other heart rhythm disorders, high BP and psychosis. Home Meds: 1. Beta blockers.	1. High degree heart block. 2. Decompensated shock. 3. Right side MI. 4. Digoxin toxicity. 5. Beta blocker overdose. 6. Increased vagal tone. 7. Intracranial hemorrhage. 8. Athletic with normally low heart rate. 9. Lyme disease. 10. Calcium channel blocker OD/Toxicity. 11. Hyperkalemia.

Bradycardia

1. Cardiac monitor.
2. 12 Lead ECG.
3. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.

Treatment #1- Asymptomatic:
DO NOT start IV/IO solely for HR <60 if patient is asymptomatic.

Treatment #2- Mildly Symptomatic:
1. IV, NS, TKO.

Treatment #3- Grossly Symptomatic:
1. IV/IO.
2. Fluid bolus for hypotension, if no fluid restrictions and lung sounds are without crackles and/or rales.
   NS 500ml IV bolus, may repeat bolus, max 1L.
3. Atropine 0.5 mg IV/IO, every 5 minutes, max of 3 mg.

If no response to first 1.5mg atropine or complete heart block:
1. Midazolam 1-2mg IV/IO.
2. Transcutaneous pacing.

If no response to atropine or pacing:
1. Epinephrine 10mcg **1:100,000** IV/IO, every 2 minutes, titrate to MAP > 60.

Considerations:
1. Patients are rarely symptomatic from heart rates of 50 to 60 BPM. Other causes should be ruled out prior to pacing or atropine.

To make epinephrine **1:100,000**:
1. Mix 9ml NS with 1ml of epinephrine **1:10,000.**

Base Hospital Orders

1. For renal failure and history suggestive of hyperkalemia:
   A. Calcium chloride 500mg 10%, IV/IO.
   B. Sodium bicarbonate 1 mEq/kg, IV/IO.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Chest Pain of Suspected Cardiac Origin

Characterized by: substernal chest pain; chest or epigastric discomfort; heaviness; squeezing; burning or tightness; pain radiating or isolated to jaw, shoulders, arms or back; nausea; diaphoresis; dizziness; dyspnea; anxiety; or back pain. Patient may have history of coronary artery disease.

Definitions:

1. **STEMI-** ST segment elevation myocardial infarction.
2. **SRC**- STEMI Receiving Center

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2
2. Obtain:
   A. 12 lead ECG.
   B. Blood glucose level, if diabetic.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Lung sounds.
3. If aspirin withheld, why?

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Description of pain (OPQRST): A. Onset: acute or progressive. B. Provocation: better with rest or NTG. C. Quality: dull or pressure. D. Radiation: shoulder or back. E. Severity variable on a scale of 1-10. F. Time: last known well time. 2. Nausea. 3. Vomiting. 4. Diaphoresis. 5. Dyspnea. 6. Dizziness. 7. Palpations. 8. Indigestion.	1. Other cardiac problems. 2. Hypertension. 3. Diabetes. 4. Stroke. 5. Family history of MI/CAD. 6. Drug use (e.g. Cocaine, Meth). <u>Home Meds:</u> 1. Aspirin: Has the patient taken an aspirin today? Does the patient usually take aspirin? Has the patient been advised by their private medical doctor to take one (1) aspirin per day? 2. Nitroglycerin: Have they taken it?	1. Muscular skeletal chest pain. 2. Pericarditis. 3. Stable angina. 4. Pulmonary embolism. 5. Pericardial effusion. 6. Gastroenteritis. 7. GERD. 8. Pancreatitis. 9. Aortic Dissection.

Chest Pain of Suspected Cardiac Origin

Treatment:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, 1-15 LPM, O2, NC or NRB, titrate to 94%.
3. 12 Lead ECG.
4. Blood glucose level, if diabetic.
5. IV, NS, TKO.
6. NTG 0.4mg, SL if SBP >100 every 5 minutes x3 doses.
7. ASA 324mg PO, if patient is able to swallow.

If chest pain persists after 3 NTG, and SBP >100:
8. Morphine 2mg IV/IO, every 5 minutes. Max of 10 mg.

If chest pain persists after 3 NTG, and SBP <100:

~~9.~~ Fentanyl 1 mcg/kg slow IV/IO, every 5 minutes, max single dose 100 mcg, max total dose 2 mcg/kg.

~~10.~~

~~11.~~9. STEMI Alert Process if 12 lead reads:

~~-**LP12 (***ACUTE MI SUSPECTED***)**~~

LP 15 - (***MEETS ST ELEVATION MI CRITERIA***).

-**LP 35** - (***ACUTE STEMI***), (***POSSIBLE ACUTE STEMI***), (**ACUTE MI/ISCHEMIA***).

-**Phillips Tempus** - (***MEETS ST ELEVATION MI CRITERIA***), (***Consider Acute STEMI***), (***Acute MI/ Ischemia***).

~~-**Zoll E Series (** ** ** ** * ACUTE MI * ** ** ** **)**~~

Zoll X ~~Series~~ - (*** STEMI ***), (*** Acute ST Elevation Infarct***), (***Probable Acute ST Elevation Infarct***), (***Acute Infarct***).

1. Contact SRC as early as possible and Transmit 12 Lead to SRC.

~~2. Transport as to SRC.~~

~~3.~~2. Scene time should be less than ten (10) minutes.

Nitroglycerin:
1. **No NTG** if computerized interpretation of 12 lead states Inferior MI or elevation of greater than 2 mm in 2 or more contiguous inferior leads (II, III, or aVF).
2. **No NTG** if patient has had Viagra in past 24 hours or Cialis in past 36 hours.

Morphine:
1. **No MS** if computerized interpretation of 12 lead states Inferior MI or elevation of greater than 2 mm in 2 or more contiguous inferior leads (II, III, or aVF). Administer fentanyl 1 mcg/kg slow IV/IO, every 5 minutes, max single dose 100 mcg, max total dose 2 mcg/kg.

Aspirin:
1. **HOLD ASPIRIN IF DISSECTION IS SUSPECTED**.

~~2.~~ May give Aspirin 324mg PO if patient reports taking “baby”/daily 81mg Aspirin.

~~3.~~2.

Considerations:
1. It is no longer recommended to place patient on oxygen unless SpO2 is less than 94% or patient appears short of breath.
2. **DO NOT** initiate an IO if patient is conscious and stable.
3. If MAP below 60 ~~at any point~~ infuse NS 500ml IV/IO bolus, may repeat x3, to max of 1500mL if no crackles and/or rales present.
4. If 12 lead ECG does not indicate “Acute MI Suspected” and patient is showing signs and symptoms of STEMI to including:
   - ~~a.~~ 2 mm ST elevation in two or more contiguous leads.

   a.

b. ~~5.~~ Notify approved STEMI center and transmit 12 Lead ECG to receiving ED for physician interpretation.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. If patient remains hypotensive after fluid bolus - discuss additional fluid .

Medical Cardiac Arrest

The goal of cardiac resuscitation is to preserve cerebral and coronary function through meticulous attention to procedure and achieving return of spontaneous circulation (ROSC).

Definitions:

1. **POI**- Passive oxygen insufflation.
2. **High quality CPR**- use TEAM approach:
   A. 100 to 120 compressions per minute.
   B. Compress at least 2 inches.
   C. Allow complete recoil.
   D. Minimize interruptions.
   E. Rotate compressors every 2 minutes.
   F. Pre-charge monitor for defibrillation while CPR is in progress.
3. **Contraindications for this protocol:**
   A. Traumatic arrest - see protocol ATRA-02.
   B. VAD- see protocol ACAR-08.
4. **Transport notes on this protocol:**
   A. Follow instructions on Page 40 for adult patients in medical cardiac arrest secondary to drowning.
   B. Complete airway obstruction or known prior respiratory arrest- Follow treatments in protocol, but transport immediately.

Documentation Standards:

1. Every 5 minutes:
   A. Respirations.
   B. Pulse.
2. Obtain:
   A. Cardiac rhythm strip.
   B. SpO2.
   C. Capnography.
   D. Blood glucose level.
   E. Physical assessment.
   F. Pupils.
   G. Lung sounds.
3. Circumstances surrounding the arrest:
   A. Estimated down time.
   B. Onset (witnessed or unwitnessed).
   C. Preceding symptoms.
   D. Bystander CPR.
   E. Medications.
   F. Environmental factors (hypothermia, inhalation, and asphyxiation).

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Quickly assess for obvious signs of death: A. Decapitation. B. Decomposition. C. Burnt beyond recognition. D. Lividity. E. Rigor mortis. 2. No pulse. 3. No respiration.	1. Angina. 2. Myocardial infarction. 3. COPD. 4. Emphysema. 5. Hypertension.	1. Respiratory arrest leading cardiac arrest. 2. Drowning. 3. Hypothermia.

Medical Cardiac Arrest

Reversible causes should be addressed for all medical cardiac arrest patients.

Treatments- treat reversible causes upon identification.

Reversible Causes:

1. **Hypovolemia-** (history suggesting volume depletion)
   Start 2nd, IV/IO, 2L, bolus, IV/IO.
2. **Hypoxia-** (SpO2 <94%)
   Maintain ventilations at 8-10 minutes, with 100% O2, BVM & OPA. Intubate if CL of 1 OR 2, Supraglottic airway if CL 3 and greater.
3. **Hydrogen ion-** (acidosis, long down time, dialysis pt.) 1mEq/kg, sodium bicarbonate, IV/IO.
4. **Hypoglycemia-** (<70 mg/dL)
   10ml/kg, dextrose 10%, IV/IO **OR** 25Gms, dextrose 50%, IV/IO.
5. **Hypocalcemia-** (down time >60 min, dialysis pt.) 500mg, calcium chloride 10%, IV/IO.
6. **Hyperkalemia-** (down time >60 min, dialysis pt.) 1mEq/kg sodium bicarbonate, IV/IO.
7. **Hypothermia-** (body temp below 34°C) Active rewarming with warm IV/IO fluids, start 2nd, IV if possible, hot packs to neck and groin.
8. **Tension Pneumothorax-** (absent lung sounds on affected side) Needle decompression.
9. **Tamponade, Cardiac**
   Start 2nd, IV, 2L, bolus, IV/IO, NS, bolus.
10. **Toxins**
    See protocol AODP-01 to 07.
11. **Torsade's de Pointes**
    Magnesium Sulfate 2 g, IV/IO over 5 min.

Termination of Resuscitative (TOR) Efforts

1. Must have:
   A. No shocks delivered.
   B. Been unwitnessed.
   C. Asystole.
   D. 2030 minutes of treatment.

If patient meets above criteria, a TOR can be done with an MICN. If any of the above is not met, base hospital physician approval is required.

Base Hospital Orders

1. Termination of resuscitative efforts after 30 minutes if any shocks were delivered.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Medical Cardiac Arrest

Ventricular Fibrillation (VF) / Pulseless Ventricular Tachycardia (pVT)

2 MIN

If ROSC at rhythm check go to protocol ACAR-05.

1. 200 compressions.
2. 15LPM O2 NRB & OPA.
3. IV/IO, NS, WO.

2 MIN

Rhythm Check # 1

VF/pVT

1. Shock 200 joules.
2. 200 compressions.

2 MIN

Rhythm Check #2

Always consider reversible causes and treat when identified

VF/pVT

1. Shock 200 joules.
2. 200 compressions.
3. 1mg/kg lidocaine, IV/IO, every 5min, max of 3mg/kg.

2 MIN

Rhythm Check #3

VF/pVT

1. Shock 200 joules.
2. 200 compressions.
3. 1mg epi, IV/IO, every 4 min.

1. Ventilate with BVM at 30:2 compressions to ventilations.
2. Intubate, CL 1 & 2.
3. Supraglottic airway, CL 3 & 4.
4. After advance airway is placed, ventilate every 5-6 seconds, with continuous compressions.
5. Return to rhythm Check #2.

All joules- are in biphasic, use of monophasic equivalent dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Medical Cardiac Arrest

Asystole / Pulseless Electrical Activity

1. 200 compressions.
2. 15LPM O2 NRB & OPA.
3. IV/IO, NS, WO.

If ROSC at rhythm check go to protocol ACAR-05.

2 MIN

Rhythm Check #1

Asystole/ PEA

1. 200 compressions.
2. 1mg epi, IV/IO, every 4 min.

2 MIN

Rhythm Check #2

Asystole/ PEA

1. 200 compressions.

Always consider reversible causes and treat when identified.

2 MIN

Rhythm Check #3

Asystole/ PEA

1. 200 compressions.
2. 1mg epi, IV/IO, every 4 min.

2 MIN

1. Ventilate with BVM at 30:2 compressions to ventilations.
2. Intubate, CL 1 & 2.
3. Supraglottic airway, CL 3 & 4.
4. After advance airway is placed, ventilate every 5-6 seconds, with continuous compressions.
5. Return to rhythm Check #2.

All joules- are in biphasic, use of monophasic equivalent dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Pulseless Ventricular Tachycardia/Ventricular Fibrillation

1. Start CPR at 100-120 compressions per minute with cycles of 200 compressions.
2. OPA/NPA and initiate passive oxygen insufflation with O2 @ 15LPM via NRB if no contraindications for 8 minutes before assisting ventilations with BVM.
3. Place on cardiac monitor – SpO2 and ETCO2.
4. Defibrillate as soon as possible @ 200 joules (or manufacturer's recommendation), repeat at pulse check every 2 minutes if in VF/VT.
5. Establish IV/IO.
6. Initiate NS 500ml IVF bolus, max of 2L.
7. If VT/VF after 2 defibrillations, lidocaine 1mg/kg via IV/IO. May repeat every 5 minutes if VF/VT persists, max total dose of 3mg/kg.
8. Epinephrine 1mg **1:10,000** IV/IO, every 4 minutes. To be initiated after 3 cycles of CPR.
9. Establish advanced airway (ETT or SGA) after 8 minutes of passive oxygen insufflation
10. Continue cycles of 2 minutes of CPR, followed by shock of VF/VT, and epinephrine 1mg every 4 minutes, for 15 minutes then transport.
11. If ROSC is achieved, initiate transport and continue transport even if ROSC is lost.
12. Patients in persistent/refractory VT/VF at 15 minutes should be transported. If within 15 minutes of SRC, transport to SRC, otherwise transport to closest facility.
13. Patients in refractory VT/VF administer magnesium sulfate 2 g IV/IO over 5 minutes.

Exceptions:

If cardiac arrest is due to suspected drowning or respiratory arrest (i.e. airway obstruction, status asthmaticus), immediately initiate positive pressure ventilation with BVM and 100% oxygen at 30:2 ration of compressions to ventilations. After advanced airway is placed, ventilate once every 5-6 seconds with continuous compressions. Do not perform passive oxygen insufflation.

Considerations:

1. The goal is high quality compressions with early defibrillation.
2. If IV is not established after first attempt, **DO NOT** delay vascular access with IV attempts. Go directly to IO.
3. Monitor capnography with BVM & OPA.
4. Always consider reversible causes and treat when identified.
5. Oral tracheal intubation should be used as the definitive airway for CL scores of 1&2.
6. VAD see protocol ACAR-08.
7. **DO NOT** initiate therapeutic hypothermia.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Asystole/PEA

1. Start CPR at 100 – 120 compressions per minute with cycles of 200 compressions
2. OPA/NPA and initiate passive oxygen insufflation with O2 @ 15LPM via NRB if no contraindications for 8 minutes before assisting ventilations with BVM at 30:2 compressions to ventilations.
3. Place on cardiac monitor, SpO2 and ETCO2.
4. Establish IV/IO.
5. Early epinephrine 1mg IV/IO, every 4 minutes.
6. Initiate fluid bolus NS 500ml, max of 2L.
7. If ROSC is achieved, initiate transport and continue transport even if ROSC is lost.
8. If cardiac arrest witnessed by EMS providers or if patient is in a public place, initiate transport to closest facility at 15 minutes.
9. Establish advanced airway (ETT or SGA) after 8 minutes of passive oxygen insufflation.
10. **AT ~~30~~ 20 MINUTES** proceed to determination of death protocol with base hospital contact.

Exceptions:

If cardiac arrest is due to suspected drowning or respiratory arrest (i.e. airway obstruction, status asthmaticus), immediately initiate supported respirations with BVM. Do not perform passive oxygen insufflation.

Considerations:

1. The goal is high quality compressions and EARLY epinephrine.
2. If IV is not established after first attempt, **DO NOT** delay vascular access with IV attempts. Go directly to IO.
3. Monitor capnography with BVM & OPA.
4. Always consider reversible causes and treat when identified.
5. Oral tracheal intubation should be used as the definitive airway for CL scores of 1 & 2.
6. VAD see protocol ACAR-08.
7. **DO NOT** initiate therapeutic hypothermia.

Base Hospital Orders

1. Termination of resuscitative efforts after 30 minutes if any shocks were delivered.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Medical Return of Spontaneous Circulation

The presence of a palpable pulse **and/or** BP for at least 30 seconds after cardiac arrest.

Definitions:

1. **Medical Cardiac Arrest-** Cardiac arrest not caused by trauma.
2. **Traumatic Arrest-** Cardiac arrest secondary to trauma.
3. **STEMI Receiving Facility (SRC)-** Facility approved by SJCEMSA to receive patients with ST elevation myocardial infarctions.

Documentation Standards:

1. Every **TWO MINUTES (2)** minutes:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
   E. EtCO2.
2. Obtain:
   A. 12 Lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Lung sounds.
   F. Capillary Refill.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Breathing. 2. Coughing. 3. Movement. 4. Palpable pulse. 5. Measurable BP.	1. Chest pain. 2. Shortness of breath. 3. Recent travel with complaint of leg pain prior to arrest.	1. Myocardial infarction. 2. Pulmonary embolism. 3. Aortic dissection. 4. Hypovolemia. 5. Septic shock. 6. Acute blood loss. 7. Hyperkalemia. 8. Intracranial hemorrhage. 9. H's & T's. a. **H**ypovolemia. b. **H**ypoxia. c. **H**ydrogen ion acidosis. d. **H**yper/**H**ypoglycemia. e. **H**yper/**H**ypokalemia. f. **H**yper/**H**ypothermia. g. **T**ension pneumothorax. h. **T**amponade cardiac. i. **T**oxins. j. **T**hrombosis, pulmonary or cardiac. k. **T**orsade's De Pointes.

Medical Return of Spontaneous Circulation

1. Cardiac monitor.
2. Monitor SpO2, if <94%, 1-15 LPM O2 via NC/NRB/BVM, titrate to 94%.
3. Monitor EtCO2 with BVM and OPA or advanced airway.
4. 12 Lead ECG. Transmit to receiving emergency department.
5. If not performed during arrest, IV/IO, NS, TKO.
6. NS 500ml IVF bolus, repeat PRN to maintain MAP >70, max 2L.
7. If not given during arrest, lidocaine 1mg/kg IV/IO ONLY if VF/VT present during arrest.
8. If low HR, see bradycardia protocol ACAR-02.
9. **Avoid hypotension**, initiate early vasopressors:
   A. Epinephrine 20mcg, **1:100,000**, IV/IO, every 2 minutes, titrate to MAP >70.

To make **1:100,000** epinephrine:

1. Mix 9ml NS with 1ml of epinephrine **1:10,000.**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. If V-Tach persists lidocaine 0.5mg/kg IV/IO, every 5 minutes, max cumulative dose of 3mg/kg.

Non Traumatic Shock

Shock is a syndrome which is characterized by inadequate tissue perfusion. Shock can have a variety of underlying causes including hypovolemia, sepsis, cardiogenic, and anaphylaxis.

Definitions:

1. **Asymptomatic-** Patient has no complaints.
2. **Mildly Symptomatic-** Patient has tachycardia with low blood pressure and no change in level of consciousness.
3. **Grossly Symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, significant chest pain or hypotension or delayed capillary refill).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. Obtain:
   A. 12 Lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Capillary refill.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Compensated shock: this often missed stage of shock is characterized by normal to slightly decreased BP and tachycardia. 2. Decompensated shock: hypotension and tachycardia. 3. Irreversible shock: hypotension and bradycardia.	1. GI bleeding. 2. Vomiting. 3. Diarrhea. 4. Allergic reaction. 5. Sepsis. 6. Anti-hypertensive O.D. 7. Fever. 8. Recent surgery.	1. Myocardial infarction. 2. Sepsis. 3. Pulmonary embolism. 4. Acute blood loss. 5. GI bleed. 6. Intracranial hemorrhage. 7. Aortic dissection.

Non Traumatic Shock

1. Cardiac monitor.
2. Monitor SpO2, if < 94%, 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 Lead ECG.

Treatment #1- Mildly Symptomatic
4. IV, NS, TKO.
5. NS 500ml IVF bolus, to BP of 90 systolic, max of 2L.

If patient has fluid restrictions (CHF, ESRD, HD) or lung sounds with crackles and/or rales.
6. NS 250ml IVF bolus, to MAP > 60, max of 1L. Reassess lung sounds and SpO2 between boluses.

Treatment #2- Grossly Symptomatic without fluid restrictions:
1. IV/IO, NS, TKO.
2. NS 500ml rapid IVF bolus, to MAP > 60, max of 2L.

If after rapid bolus 2L NS, MAP remains <60, proceed to addition of vasopressors.

Treatment #3 – Grossly symptomatic with fluid restrictions
If patient has fluid restrictions (CHF, ESRD, HD) or lung sounds with crackles and/or rales **AND** SpO2 >94%:
1. Rapid IVF bolus of NS 250ml, to MAP > 60, max of 1L. Reassess lung sounds and SpO2 between boluses.
2. If patient develops crackles and/or rales, SpO2 drops or does not respond to fluid bolus, proceed to additional of vasopressors.
3. Epinephrine 10mcg of **1:100,000**, IV/IO, every 2 minutes, titrate to MAP > 60.

Considerations:
1. Patients that appear to be mildly symptomatic can be in the compensatory stage of shock, **ANTICIPATE DETERIORATION.**
2. Consider CPAP if lung sounds are not clear and patient has signs of respiratory distress in addition to vasopressors.

To make epinephrine **1:100,000**:
1. Mix 9ml NS with 1ml of epinephrine **1:10,000.**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Supraventricular Tachycardia

Supraventricular tachycardia (SVT), also called paroxysmal supraventricular tachycardia, is defined as an abnormally fast heartbeat.

Definitions:

1. **Asymptomatic-** Patient has no complaints related to heart rate.
2. **Mildly symptomatic-** Patient is symptomatic but hemodynamically stable.
3. **Grossly Symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, chest pain or hypotension related to a SVT).
4. **All Joules-** are in biphasic, use of equivalent monophasic dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse and quality.
   D. SpO2.
2. Obtain:
   A. 12 lead ECG.
   B. Blood glucose level if diabetic.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Skin signs, including capillary refill time.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. A fluttering in chest. 2. Rapid heartbeat (palpitations). 3. Shortness of breath. 4. Lightheadedness or dizziness. 5. Sweating. 6. A pounding sensation in the neck. 7. Fainting (syncope) or near fainting.	1. SVT. 2. Stimulant drug use. 3. Illicit drug use. 4. Cardiac ablation. Home Meds: 1. Beta blockers. 2. Calcium channel blockers.	1. Atrial fibrillation. 2. Atrial flutter. 3. Dehydration. 4. Sepsis. 5. Beta blocker withdrawal. 6. Wolf Parkinson White Syndrome.

Supraventricular Tachycardia

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 lead ECG.

Treatment #1 Asymptomatic:
DO NOT start IV solely for HR >150, if patient is asymptomatic.

Treatment #2- Mildly Symptomatic:
1. IV, AC or higher if possible, NS, TKO.
2. Perform Valsalva's maneuver.
3. NS 500ml IVF bolus, to MAP > 60.

If no response to fluid bolus:
4. Adenosine 6 mg rapid IVP. If no response after 2 minutes give adenosine 12mg rapid IVP, If no response after 2 min may repeat adenosine 12mg rapid IVP once.
5. If no response after 3 doses of adenosine, if not already, begin transport.

Treatment #3- Grossly Symptomatic:
1. NS 500ml rapid IVF bolus.
2. If IV readily obtained, give adenosine 12 mg rapid IVP.

If no response **or** unable to readily establish IV:
1. Synchronized cardioversion 100J.
2. If no response, synchronized cardioversion 200J.
3. If IV/IO established, may give midazolam 2mg IV/IO immediately prior to synchronized cardioversion. Do not delay synchronized cardioversion in unstable patient.
4. If no response to synchronized cardioversion, begin transport and make base hospital contact.

Considerations:
1. Patients are rarely symptomatic from heart rates of 150 to 160 BPM. Other causes should be ruled out prior to adenosine or synchronized cardioversion.

Base Hospital Orders

1. Additional synchronized cardioversions.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Ventricular Assist Device (VAD) Failure

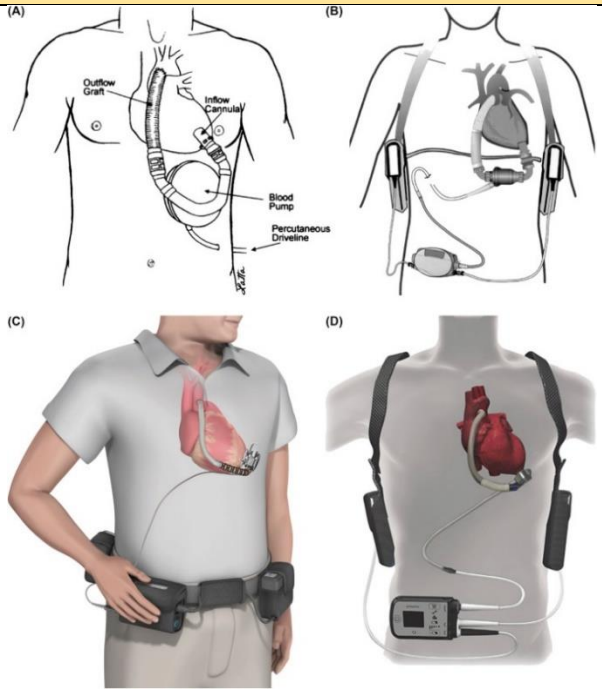
The following are key points to remember from this American Heart Association Scientific Statement about cardiopulmonary resuscitation (CPR) in adults and children with mechanical circulatory support (MCS).

Definitions:

1. **LVAD-** Left Ventricular Assist Device.
2. **RVAD-** Right Ventricular Assist device.
3. **BiVAD-** Biventricular Assist Device.
4. **Pulsatile-** Will have pulsing or rhythmic sound, possible palpable radial pulse and CO2 will read accurately.
5. **Continuous Flow-** Most commonly located in patient's thorax and will have no peripheral pulses. Utilize monitor generated Mean Arterial Pressure (MAP) to assess perfusion, CO2 will read accurately.
6. **HeartMate II-** The most commonly implanted device. This device is a continuous flow device and patients will not have a palpable pulse.
7. **HeartWare-** Older version but still common. This device is a continuous flow device and patients will not have a palpable pulse.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. MAP (BP is not accurate in these patients).
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. Obtain:
   A. 12 lead ECG.
   B. EtCO2 if using and advanced airway or BVM and OPA.
   C. Blood glucose if diabetic.
   D. Pain scale PRN.
   E. Physical assessment.
   F. Capillary refill.



Ventricular Assist Device (VAD) Failure

Treatment

1. Cardiac monitor.
2. Monitor SpO2, if < 94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Monitor MAP.
4. Monitor EtCO2 if using and advanced airway or BVM.
5. 12 lead ECG.
6. Assess the device to see if it is working:
   A. Gather information regarding the type of device, the implantation hospital, and/or the VAD Coordinator contact telephone number.
   B. Telephone number may be available by a tag on the device, on the refrigerator, or on a medical alert bracelet.
   C. If a caregiver is present, utilize his/her knowledge.
   D. Listen to their directions regarding VAD device management until you are able to contact the VAD Coordinator. The VAD Coordinator can help you decide the best course of action regarding assessment of the equipment. **NOTE: Only the base hospital is legally allowed to give orders regarding patient care.**
7. If the patient has a **continuous flow VAD** (non-pulsatile / pulseless), auscultate the left upper quadrant of the patient's abdomen for the "hum" of the VAD, which can help direct the appropriate actions.
8. A **pulsatile VAD** will make an audible sound without auscultation. Pulsatile VADs are usually older devices which pump blood via pulsatile mechanism, generating a peripheral pulse.
9. Determine if the device has power:
   A. If the device has power, you will see a green light on the HeartMate II, the most commonly implanted device.
   B. On the HeartWare device, the display will tell you the Liters per Minute (LPM) of blood flow.
10. Check the VAD for secure connections and that the batteries are charged and functional.

If VAD is definitively confirmed by a trained person and there are no signs of life, no MAP and no pulse:

11. Start CPR see protocol ACAR-04.

Considerations

1. While pulse oximetry can be used in patients with a VAD, the results may not be accurate because of the lack of pulsatile flow.
2. A CO2 value of <20mmHg in an unresponsive, correctly intubated, pulseless patient with a VAD would seem to be a reasonable indicator of poor systemic perfusion and should prompt rescuers to initiate chest compressions.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Sustained Ventricular Tachycardia with a Pulse

A regular or slightly irregular rhythm, heart rate 100 to 200 and wide >0.12 seconds QRS complex.

Definitions:

1. **Sustained Ventricular Tachycardia-** Wide complex QRS rhythm **>100BPM** lasting longer than **30** seconds.
2. **Asymptomatic-** Patient has no complaints related to heart rate.
3. **Mildly Symptomatic-** Patient is symptomatic (CP, SOB, weakness, lightheadedness) and hemodynamically stable.
4. **Grossly Symptomatic-** Patient is symptomatic and hemodynamically unstable (ALOC, significant chest pain, delayed capillary refill or hypotension).
5. **All Joules-** Are in biphasic, use of equivalent monophasic dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. Obtain:
   A. 12 lead ECG.
   B. Pain scale PRN.
   C. Physical assessment.
   D. Skin signs, including capillary refill time.
   E. Blood glucose level, if diabetic.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Dizziness. 2. Shortness of breath. 3. Lightheadedness. 4. Feeling as if your heart is racing (palpitations). 5. Chest pain (angina). 6. Loss of consciousness or fainting.	1. Cardiac arrest. 2. Syncope. 3. Palpitations. 4. Heart disease. 5. Prior synchronized cardioversion. 6. Implanted defibrillator. 7. Family history of early sudden death. Home Meds: 1. NTG. 2. ASA. 3. Beta blockers. 4. Calcium channel blockers.	1. Atrial fibrillation. 2. Aberrant conduction.

Sustained Ventricular Tachycardia with a Pulse

1. Cardiac monitor.
2. Monitor SpO2, if < 94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 lead ECG.
4. IV, NS, TKO.

Treatment #1- Asymptomatic:
1. NS 500mL IVF bolus.

Treatment #2- Mildly Symptomatic:
1. Lidocaine 1mg/kg IVP.
2. Give lidocaine 0.5mg/kg IV if persists after 5 minutes. May repeat 0.5 mg/kg x2, every 5 minutes.

Treatment #3- Grossly Symptomatic:
1. Transport to SRC.
2. NS 500ml rapid IVF bolus, titrate to MAP > 60, max of 2L. To be done in conjunction with synchronized cardioversion.
3. Synchronized cardioversion 100J. If no response, repeat, increasing by 50J, max of 3 shocks.
4. Give lidocaine 1mg/kg IV/IO bolus after synchronized cardioversion.
5. If no response to synchronized cardioversion, give lidocaine 1mg/kg IV/IO, may repeat 0.5mg/kg x 2, every 5 minutes.
6. If IV/IO established, may give midazolam 2mg IV immediately prior to synchronized cardioversion. Do not delay synchronized cardioversion in an unstable patient.

Considerations:
1. If ECG appears polymorphic (Torsades De Pointes) magnesium sulfate 2g, IV/IO, infusion in 250ml NS, over 20 minutes.
2. For suspected TCA overdose see protocol AODP-05.

Base Hospital Orders

1. Additional synchronized cardioversions.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Adult Respiratory

Acute Pulmonary Edema

Pulmonary edema is a condition caused by excess fluid in the lungs. Fluid collection in the numerous air sacs within the lungs cause difficulty breathing.

Definitions:

1. **Acute Pulmonary Edema-** Means an acute onset of respiratory difficulty with SBP >120 and rales or occasional wheezes. May have a history of cardiac disease.
2. **Mild SOB with Pulmonary Edema-** Patient complains of SOB with mild work of breathing (speaking full sentences with difficulty) auscultated rales and no complaints of chest pain.
3. **Moderate SOB with Pulmonary Edema-** Patient has moderate work of breathing (speaking 3-5 word sentences) possible complaints of chest pain and has rales on auscultation.
4. **Severe SOB with Pulmonary Edema-** Patient has severe work of breathing (speaking 1-3 word sentences) ALOC or chest pain, with rales on auscultation and or pink frothy sputum production.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
   E. ETCO2
2. Obtain:
   A. 12 lead ECG.
   B. Blood glucose level on diabetic patients.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Lung sounds.
   F. Skin signs including capillary refill.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Peripheral pitting edema. 2. Dyspnea that worsens with activity or when lying down. 3. Wheezing or gasping for breath. 4. Cold, clammy skin. 5. Anxiety, restlessness. 6. A cough that produces frothy sputum that may be tinged with blood. 7. Blue-tinged lips. 8. A rapid, irregular heartbeat (palpitations). 9. Difficulty breathing with exertion. 10. Swelling in lower extremities.	1. Congestive heart failure. 2. Atrial fibrillation. 3. Myocardial infarction. 4. Coronary artery disease. 5. COPD. 6. Emphysema. 7. Previous intubations secondary to CHF. 8. Conditions related to valve failure. 9. End stage renal diseases. (ESRD) 10. Hemodialysis. Home Meds: 1. Lasix. 2. ASA. 3. Beta blockers.	1. Pneumonia. 2. Smoke inhalation. 3. Altitude sickness. 4. Pulmonary embolism. 5. Flash pulmonary edema. 6. Mitral valve regurgitation. 7. Sepsis. 8. ARDS. 9. Anaphylaxis. 10. Acute bronchospasms.

Acute Pulmonary Edema

1. Cardiac monitor.
2. Monitor SpO2, if < 94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 Lead ECG.

Treatment #1- Mild SOB with pulmonary edema:
1. Transport in position of comfort.

Treatment #2- Moderate SOB with pulmonary edema:
1. Establish IV, NS, TKO.
2. If suspected cardiac origin and SBP >100, NTG 0.4mg, every 3 minutes PRN.

Treatment #3- Severe SOB with pulmonary edema:
1. Establish IV/IO, NS, TKO.
2. CPAP or PPV ventilation if ALOC.
3. If suspected cardiac origin and SBP >100, NTG 0.4mg SL, every 3 minutes PRN.
4. If pulmonary edema present and MAP < 60, make base hospital contact during transport for possible vasopressor use.

Considerations
1. With severe SOB, **DO NOT** delay CPAP or PPV ventilation if ALOC.
2. Consider withholding bronchodilators if patient has wheezing breath sounds and no history of reactive airway disease, consider acute CHF.
3. May treat nausea according to protocol AGEN-04.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

For MAP < 60,

2. Epinephrine 10mcg, **1:100,000**, IV/IO, every 2 minutes, titrate to MAP > 60.

To make **1:100,000** epinephrine:

1. Mix 9ml NS with 1ml of epinephrine **1:10,000.**

Bronchospasms

Bronchospasm occurs when the airways (bronchial tubes) go into spasm and contract. This makes it hard to breathe and causes wheezing (a high-pitched whistling sound). Bronchospasm can also cause frequent coughing without wheezing. Bronchospasm is often due to irritation, inflammation, or allergic reaction of the airways. People with asthma get bronchospasm. However, not everyone with bronchospasm has asthma.

Definitions:

1. **Mild Respiratory Distress-** Means mild wheezing, shortness of breath and/or cough, and ability to speak full sentences.
2. **Moderate Respiratory Distress-** Means spontaneous adequate breathing with significant wheezing/SOB accompanied by any of the following signs: accessory muscle use, nasal flaring, grunting, and/or inability to speak full sentences.
3. **Severe Respiratory Distress-** Means ineffective respirations and/or inadequate tidal volume, which may be accompanied by any of the following signs: accessory muscle use, cyanosis, inability to speak, gasping respirations, and/or decreased level of consciousness.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG for severe distress or chest pain.
   B. Blood glucose level, if diabetic.
   C. Pain scale PRN.
   D. Physical assessment including skin signs.
   E. Lung sounds. (if giving treatment, lung sounds before and after intervention should be noted)

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Respirations <10 or >30 per minute. 2. Rhythm (abnormal pattern, shallow). 3. Effort (labored). 4. Lung sounds (wheezing, stridor). 5. Cough. 6. Fever. 7. Sputum production. 8. Rash. 9. Urticaria. 10. Restlessness.	1. Asthma. 2. COPD. 3. Emphysema. 4. Chemical exposure. 5. Smoking. 6. Previous intubation. Home Meds: 1. Albuterol. 2. Atrovent. 3. Steroids. 4. Home Neb. 5. Home O2. 6. Antihistamines.	1. Smoke inhalation. 2. Allergic reaction. 3. Anaphylaxis. 4. Congestive heart failure. 5. Spontaneous pneumothorax. 6. Pulmonary embolism. 7. Vocal cord dysfunction. 8. Pneumonia. 9. Plural effusion.

Bronchospasms

1. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.

Treatment #1- Mild Bronchospasm:
1. Albuterol 2.5 mg/3ml NS & atrovent 0.5mg/2.5ml via nebulizer with 4-6 LPM O2 x1.

Treatment #2- Moderate Bronchospasm:
1. Albuterol 2.5 mg/3ml NS & atrovent 0.5mg/2.5ml via nebulizer with 4-6 LPM O2 x1.
2. Cardiac monitor.
3. Repeat albuterol 2.5 mg/3 ml NS every 5 minutes as needed.
4. IV, NS, TKO.

Treatment #3- Severe Bronchospasm:
1. Consider CPAP.
2. Albuterol 2.5 mg/3ml NS & atrovent 0.5mg/2.5ml via mask nebulizer or in-line with CPAP x1.
3. Cardiac monitor.
4. Repeat albuterol 2.5mg/3ml NS as needed.
5. 12 lead ECG.
6. IV, NS, TKO.

If no response after initial albuterol or worsening respiratory status.
7. Magnesium sulfate 2g IV/IO in 250 NS, infusion over 20 minutes. DO NOT administer if patient has known kidney disease or on dialysis.

If not responding to magnesium sulfate
8. Administer epinephrine **1:1,000** 0.3mg IM.

Treatment #4- Respiratory Failure from severe bronchospasm
1. Assist ventilations with BVM 100% oxygen and initiate an inline nebulizer treatment with albuterol 2.5mg/3ml NS & atrovent 0.5mg/2.5ml NS.
2. Begin continuous inline albuterol nebulizer therapy until patient status has improved and wheezing has resolved.
3. Cardiac monitor.
4. Administer epinephrine **1:1,000** 0.3mg IM, repeat every 5 minutes as needed.
5. Consider magnesium sulfate 2g IV/IO, in 250ml NS, infusion over 20 minutes.
6. Obtain 12 lead ECG.
7. Only place advanced airway when patient is without gag reflex or unable to ventilate.

Considerations
1. Suction as needed.
2. Titrate oxygen to SpO2 of 92% for patients with a history of COPD.
3. Upper airway obstruction; Relieve obstruction by positioning, suction, abdominal thrusts, or direct removal with Magill forceps.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Smoke Inhalation

Smoke inhalation is the leading cause of death due to fires. It produces injury through several mechanisms, including thermal injury to the upper airway, irritation or chemical injury to the airways from soot, asphyxiation, and toxicity from carbon monoxide (CO) and other gases such as cyanide.

Definitions:

1. **Asymptomatic-** Known significant exposure to smoke with no complaints or asymptomatic.
2. **Mildly Symptomatic-** Known significant exposure to smoke, with signs and symptoms, such as weakness or mild shortness of breath.
3. **Grossly Symptomatic-** Known significant exposure to smoke, with serious signs and symptoms, such as ALOC, severe shortness of breath, unconscious.
4. **Carbon Monoxide-** Is a colorless, odorless, and tasteless poisonous gas that can be fatal when inhaled. CO inhibits the blood's capacity to carry oxygen. CO can be produced when burning any fuel. CO is a byproduct of incomplete combustion.
5. **Smoke Inhalation-** Should be suspected in patients rescued from closed-space fires or exposed to significant amounts of smoke.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level, if diabetic.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Similar to flu with no fever. 2. Dizziness. 3. Severe headaches. 4. Nausea. 5. Sleepiness. 6. Fatigue/weakness. 7. Disorientation/confusion.	1. Exposure to smoke from fire. 2. Exposure to gas and/ chemicals.	1. Anaphylaxis. 2. ARDS. 3. Chemical exposure. 4. Pulmonary edema.

Smoke Inhalation

1. Monitor SpO2.

Treatment #1- Mildly symptomatic:
1. If SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Cardiac monitor.
3. IV, NS, TKO.
4. Consider nebulized saline.
5. If CO poisoning suspected, administer 15 LPM O2 via NRB regardless of SpO2.
6. Treat wheezes according to protocol ARSP-02.

Treatment #2- Grossly symptomatic:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Cardiac monitor.
3. IV, NS, TKO.
4. Consider nebulized saline.
5. If CO poisoning suspected, administer 15 LPM O2 via NRB regardless of SpO2.
6. Treat wheezes according to protocol ARSP-02.
7. Consider CPAP if patient develops pulmonary edema.
8. For MAP < 60 without evidence of fluid overload, NS 500ml IVF bolus, titrate MAP > 60, max 2L.
9. Treat seizure according to protocol ANRO-05.
10. Treat dysrhythmias according to protocol ACAR-01 to 09.
11. If unmanageable airway involvement, transport to closest hospital.

Considerations:
1. Completely remove victim's clothing prior to transport.
2. Evaluate patient for facial burns, hoarseness, black sputum, and soot in the nose or mouth.
3. Pulse oximetry values may be unreliable in smoke inhalation patients.
4. Anticipate deterioration.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Adult Neurological

CVA/TIA

To identify and treat patients suffering from stokes and TIA's, and provide early notification to Primary Stroke Center (PSC).

Definitions:

1. **CVA**- Cerebral Vascular Accident.
2. **TIA**- Transient Ischemic Attack. Patient with stroke-like symptoms that are improving since onset.
3. **RACE**- Rapid Arterial Occlusion Evaluation.
4. **CPSS**- Cincinnati Prehospital Stroke Scale.
5. **LKWT**- Last Known Well Time (Clock time).
6. **AC**- Antecubital Fossa.
7. **EJ**- External Jugular.
8. **PSC**- Primary Stroke Center.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. Cardiac monitor.
   B. 12 lead ECG.
   C. Blood glucose level.
   D. Pain scale PRN.
   E. LAST KNOWN WELL TIME (LKWT) written as time of day (clock time), not as hours or minutes prior to arrival.
   F. Physical assessment.
   G. Pupils.
   H. Stroke scale (Cincinnati Prehospital Stroke Scale & RACE stroke score if indicated).

Objective Findings:

Signs & Symptoms	History	Differentials & Stroke Mimics
1. ALOC. 2. Weakness/Paralysis. 3. Balance/Vertigo/Dizziness. 4. Vision changes. 5. Aphasia/Dysarthria. 6. Syncope. 7. Headache. 8. Nausea and vomiting. 9. Hyper /Hypotension. 10. Seizures.	1. Previous CVA/TIA. 2. Previous trauma. 3. Previous cardiac surgery. 4. HTN. 5. Diabetes. 6. Coronary artery disease. 7. Atrial fibrillation. 8. Medication (i.e. blood thinners). 9. DNR orders / code status.	1. ALOC. 2. ETOH / Drug use. 3. Hypo / Hyperglycemia. 4. Hypoxia. 5. Hypercarbia. 6. Trauma. 7. Metabolic disorders. 8. Inter cranial hemorrhage. 9. Dizziness 10. Syncope. 11. Blurred vision.

PSC Alert Process

Upon recognition of RACE score greater than 5:

1. Initiate transport as soon as feasible.
2. Notify PSC via radio **or** phone of findings:
   A. CPSS.
   B. RACE score.
   C. Blood glucose level.
   D. LKWT (Clock time).
   E. Pertinent history.

CVA/TIA

1. Cardiac monitor
2. Monitor SpO2, if <94% 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 lead ECG.
4. Blood glucose level, if <70 mg/dL, see Protocol ANRO-03.
5. If MAP < 60, NS 500ml IVF bolus, titrate to MAP > 60, max of 2L.
6. Perform CPSS.
7. Perform RACE scale on all patients with **POSITIVE CPSS**.
8. **PROVIDE STROKE ALERT** and transport to stroke center, if patient has a positive CPSS exam with symptoms <24 hours.
9. If patient has a positive CPSS exam with symptoms >24 hours, transport to PSC **WITHOUT** stroke alert.
10. RACE score less than 5; IV, NS, TKO where available.
11. RACE score greater than 5; IV, AC or higher, (EJ after two failed attempts) NS, TKO.

Considerations

1. Accurate LKWT is vital to treatment in the hospital.
2. Limit IV attempts.
3. Look out for atypical presentations and stroke mimics.
4. Provide stroke alert to receiving hospital center as soon as possible.
5. Scene time should be kept to **LESS THAN 15 MINUTES**.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Cincinnati Prehospital Stoke Screen

	Normal	Abnormal
Facial Droop	Both sides of face move equally	One side of face does not move as well
Arm Drift	Can hold arms out equally	One arms moves down
Speech	Uses correct words, no slurring	Uses incorrect words or slurred speech

RACE Stroke Scale

ITEM	INSTRUCTION		Score
FACIAL PALSY	Ask the patient to show their teeth	ABSENT= (Symmetrical movement)	0
		MILD= (Slightly asymmetrical)	1
		MODERATE/SEVERE= (Completely asymmetrical)	2
ARM MOTOR FUNCTION	Extending the arm of the patient 90 degrees if sitting or 45 degrees if supine.	NORMAL/MILD= (Limb held up for more than 10 seconds)	0
		MODERATE= (Limb held up for less than 10 seconds)	1
		SEVERE= (Patient unable to raise arm against gravity)	2
LEG MOTOR FUNCTION	extending the leg of the patient 30 degrees if supine	NORMAL/MILD= (Limb upheld more than 10 seconds)	0
		MODERATE= (Limb upheld less than 10 seconds)	1
		SEVERE= (Patient unable to raise leg against gravity)	2
HEAD AND GAZE DEVIATION	observe eyes and cephalic deviation to one side	ABSENT= (Eye movements to both side are possible)	0
		PRESENT= (Eyes deviation to one side observed)	1
APHASIA (EVALUATE IN RIGHT SIDED WEAKNESS)	Ask the patient to "close your eyes" and "make a fist"	NORMAL= (Performs bot tasks correctly)	0
		MODERATE= (Performs one task correctly)	1
		SEVERE= (Unable to perform either task)	2
AGNOSIA (EVALUATE IN LEFT SIDED WEAKNESS)	Assess for recognition deficit: Does patient recognize effected side? "Whose arm is this?" Can the patient lift both arms and clap?	NORMAL= (Recognizes arm and impairment)	0
		MODERATE= (Unable to recognize arm or impairment)	1
		SEVERE= (Unable to recognize arm and impairment)	2

Hyperglycemia

An excess of glucose in the bloodstream, often associated with diabetes mellitus.

Definitions:

1. **Asymptomatic-** No symptoms or complaints related to blood glucose level.
2. **Mildly Symptomatic-** Showing symptoms of hyperglycemia such as polyuria, polydipsia, tachypnea.
3. **Grossly Symptomatic-** ALOC, confusion, tachypnea.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. Cardiac monitor.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Frequent urination. 2. Increased thirst. 3. Blurred vision. 4. Fatigue. 5. Headache. 6. Fruity-smelling breath. 7. Nausea and vomiting. 8. Shortness of breath. 9. Tachypnea (especially in the absence of a SOB complaint). 10. Dry mouth. 11. Weakness. 12. Confusion. 13. Coma. 14. Abdominal pain.	1. Insulin dependent diabetes. 2. Non-insulin dependent diabetes. 3. Excessive thirst. Home Meds: 1. Insulin. 2. Glucophage. 3. Metformin. 4. Januvia.	1. CVA. 2. ETOH intoxication. 3. Overdose. 4. Shock. 5. Sepsis. 6. DKA. 7. HHNK.

Hyperglycemia

1. Monitor SpO2.
2. Blood glucose level.

Treatment #1- Asymptomatic:
1. If blood glucose level >300 mg/dL, **DO NOT** initiate IV solely for high blood glucose.
2. Notify receiving nurse.

Treatment #2- Mildly Symptomatic:
1. If SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. If blood glucose level >300 mg/dL, consider IV, NS, TKO.
3. Notify receiving nurse.

Treatment #3- Grossly Symptomatic:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. If blood glucose level >300 mg/dL, establish IV/IO.
3. Cardiac monitor.
4. NS 500ml IVF bolus if no evidence of fluid overload (CHF, ESRD, HD). May repeat x 1, max of 1L.
5. Obtain repeat blood glucose after fluid bolus.
6. Notify receiving nurse.

Considerations
1. If ALOC, perform stroke screen. Go to protocol ANRO-01, if positive.
2. If having any chest discomfort perform a 12 ECG lead. If STEMI go to protocol ACAR-03.
3. It is imperative to rule out other causes of ALOC.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed **or** patient has atypical presentation.

Hypoglycemia

Hypoglycemia is a condition caused by a very low level of blood glucose, your body's main energy source.

Definitions:

1. **Asymptomatic -** No symptoms or complaints related to blood glucose level. A/Ox4, GCS 15.
2. **Mildly Symptomatic -** Showing symptoms of hypoglycemia such as confusion, abnormal behavior or poor skin signs.
3. **Grossly Symptomatic -** Loss of consciousness or unconscious, seizure activity.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. An irregular heart rhythm. 2. Fatigue. 3. Pale skin. 4. Shakiness. 5. Anxiety. 6. Sweating. 7. Hunger. 8. Irritability. 9. Confusion. 10. Abnormal behavior. 11. Visual disturbances. 12. Blurred vision. 13. Seizures. 14. Loss of consciousness.	1. Insulin dependent diabetes. 2. Non-insulin dependent diabetes. 3. Malnutrition. 4. Chronic renal disease. 5. Vomiting. Home Meds: 1. Insulin. 2. Glucophage. 3. Metformin. 4. Januvia.	1. CVA. 2. ETOH intoxication. 3. Overdose. 4. Shock. 5. Sepsis. 6. Adrenal Insufficiency. 7. Insulin OD. 8. Malfunction Insulin pump.

Hypoglycemia

1. Monitor SpO2.
2. Blood glucose level.

Treatment #1- Asymptomatic:
1. If blood glucose level <70 mg/dl with diabetes history, administer oral glucose.
2. If blood glucose level <70 mg/dl with **NO** diabetes history and **NO** symptoms **DO NOT** initiate IV or give dextrose solely for blood glucose level <70 mg/dL.
3. Notify receiving nurse.

Treatment #2- Mildly symptomatic with blood glucose level <70 mg/dL:
1. If SpO2 <94%, 1-6 LPM O2 via NC, titrate to 94%.
2. IV, NS, TKO.
3. Administer 25g of dextrose 50% IV, titrate to blood glucose above 70 mg/dL or 100ml of dextrose 10% IV, titrate to blood glucose >70 mg/dL.
4. Recheck blood glucose.
5. Notify receiving nurse.

Treatment #3- Grossly symptomatic with blood glucose level <70 mg/dL:
1. Cardiac monitor.
2. If SpO2 <94%, 1-15 LPM O2 via NC or NRB, titrate to 94%.
3. IV/IO, NS, TKO.
4. Administer 25g of dextrose 50%, IV/IO, titrate to blood glucose level >70 mg/dL or 100ml of dextrose 10% IV/IO, titrate to blood glucose level >70 mg/dl.
5. Recheck blood glucose level.
6. If dextrose 10% administered and blood glucose level remains <70 mg/dL and patient is still grossly symptomatic, administer 25g of D50%.
7. Notify receiving nurse.

Considerations
1. If ALOC continues after dextrose is given, perform stroke screen. Go to protocol ANRO-01, if positive.
2. If having any chest discomfort, consider a 12 ECG. If STEMI go to protocol ACAR-03.
3. Always assess for the presence of an insulin pump, and have patient turn off pump if hypoglycemic.

IF PATIENT IS OBTUNDED WITH POOR IV ACCESS:
1. Place semi-prone position.
2. Place glucose gel onto the end of a tongue depressor.
3. Spread glucose gel on the inside of the lower cheek (buccal area).
4. Promote maximal absorption of glucose product by massaging the outer lower cheek.
5. Continue this practice until the patient becomes able to control their airway.
6. Suction as necessary.

Base Hospital Orders

1. Consult Base Hospital if additional orders as needed or patient has atypical presentation.

New Onset Altered Level of Consciousness Unknown Etiology

A mildly depressed level of consciousness or alertness is described as listless. Someone in this state can be aroused with little difficulty. People who are obtunded have a more depressed level of consciousness and cannot be fully aroused. Those who are not able to be aroused from a sleep-like state are said to be stuporous.

Definitions:

1. **Stroke Screen-** Cincinnati Prehospital Stroke Scale.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment including skin signs and capillary refill.
   E. Stroke screen.
   F. GCS.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Evidence of trauma. 2. Fever. 3. Cough. 4. Fatigue. 5. Shakiness. 6. Skin color changes. 7. Snoring respirations.	1. Recent fall. 2. Recent infections. 3. Change in medications. 4. Stopped medications. 5. Accidental overdose. 6. ETOH abuse. 7. Liver disease. Home Meds 1. Blood thinners. 2. Lactulose. 3. Narcotics. 4. Parkinson medications.	1. Alcohol intoxication. 2. Epilepsy. 3. Hypo/Hyperglycemia. 4. Over/Underdose of medications. 5. Trauma. 6. Sepsis. 7. Shock. 8. Behavioral. 9. CVA/TIA. 10. Hypoxia. 11. Meningitis/encephalitis. 12. Encephalopathy. 13. Hyponatremia. 14. Alzheimer's. 15. Parkinson's.

New Onset Altered Level of Consciousness Unknown Etiology

Treatment:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Monitor CO2 if history of asthma/COPD or using an advanced airway or BVM.
4. Check blood glucose level, if <70 mg/dL, see protocol ANRO-03.
5. Obtain 12 lead ECG. If STEMI see protocol ACAR-03.
6. Perform stroke screen, if positive, see protocol ANRO-01.

If presenting with serious signs and symptoms that do not fit into any other protocol:
7. IV, NS, TKO.
8. If no evidence of fluid overload, treat hypotension or tachycardia with NS 500ml IVF bolus. May repeat PRN, max 2L. Reassess lung sounds and SpO2 before each additional bolus.

Considerations
DO NOT initiate an IV for the presence ALOC alone, consider other causes:
1. **A**lcohol- Maintain airway as needed. If MAP < 60, see protocol ACAR-06.
2. **E**pilepsy- If postictal, maintain airway as needed. If seizing, see protocol ANRO-05.
3. **I**nsulin- If blood glucose level >70 mg/dL, see protocol ANRO-02. If blood glucose level <70 mg/dL, see protocol ANRO-03.
4. **O**verdose/ Underdose - See overdose protocols AODP-01 to 07. If no reversible causes and serious signs and symptoms, consider IV/IO.
5. **T**rauma- See protocol ATRA-01.
6. **I**nfection- See protocol AGEN-01.
7. **P**sychosis- This should be considered only after all other potential causes are ruled out.
8. **S**hock- See protocol ACAR-06.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

EYE		Verbal		Motor	
4	Alert	5	Oriented	6	Spontaneous
3	Verbal	4	Confused	5	Follows Commands
2	Tactile	3	Inappropriate words	4	Localizes
1	None	2	Incomprehensible speech	3	Decorticate Posturing
		1	None	2	Decerebrate Posturing
				1	None

Seizures

A seizure is a sudden, uncontrolled electrical disturbance in the brain. It can cause changes in your behavior, movements, feelings, and in levels of consciousness. In the prehospital setting, our goal is the management of generalized seizure activity that may affect respiratory drive or airway patency.

Definitions:

1. **Tonic Seizures-** Tonic seizures cause stiffening of your muscles. These seizures usually affect muscles in your back, arms, and legs and may cause you to fall to the ground.
2. **Clonic Seizures-** Clonic seizures are associated with repeated or rhythmic, jerking muscle movements. These seizures usually affect the neck, face, and arms.
3. **Tonic-Clonic Seizures-** Tonic-Clonic seizures, previously known as grand mal seizures, are the most dramatic type of epileptic seizure and can cause an abrupt loss of consciousness, body stiffening, and shaking, and sometimes loss of bladder control or biting of the patient's tongue.
4. **Recurrent Seizure-** Witnessed by prehospital personnel to be seizing for >2 minutes **or** patient has two (2) seizures without regaining consciousness.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment including skin signs and capillary refill.
   E. Pupils.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Evidence of trauma. 2. Febrile state. 3. Current seizure activity. 4. Medical information tags, bracelets, or medallions.	1. Recent infection. 2. Fever. 3. Trauma. 4. Environment (heat/cold). 5. Epilepsy. 6. Drug use / ETOH Abuse. Home Meds: 1. Acetazolamide(Acetazolam). 2. Carbamazepine (Tegretol). 3. Clobazam (Frisium). 4. Clonazepam (Rivotril). 5. Diazepam (Valium). 6. Ethosuximide (Zarontin). 7. Gabapentin (Neurontin). 8. Lamotrigine (Lamictal). 9. INH (Kuniazid).	1. CVA. 2. Meningitis / Encephalitis. 3. Intracranial hemorrhage. 4. Electrolyte imbalance. 5. Alcohol withdrawal. 6. VT/VF. 7. Overdose. 8. Metabolic acidosis. 9. Hyperthermia. 10. Hypoxia.

Seizures

1. Cardiac monitor.
2. O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Check blood glucose.
4. IV, NS, TKO.
5. For suspected hyperthermia, See protocol AENV-03.
6. If patient actively seizing, administer midazolam 5mg IV/IM/IO. May repeat in 5 minutes if seizure activity continues. Max dose 10mg.
7. Intranasal route is not preferred; however, if IV/IM/IO is not possible, may give midazolam 5mg IN (2.5mg each nares.) May repeat in 10 minutes if seizure activity continues. Max dose 10mg.

Considerations:

1. Protect patient from further injury e.g. move furniture and ensure safe area for treatment.
2. Spinal stabilization as indicated.
3. **DO NOT** forcibly restrain patient during seizure activity.
4. If narcotic overdose is suspected, refer to protocol AODP-06.
5. If eclampsia suspected, refer to protocol AOBG-02.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. Make base contact for additional medication if seizures continue after maximum dose of midazolam.

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Adult Environmental

Allergic Reaction/Anaphylaxis

Allergic reactions occur when your immune system reacts to a foreign substance ranging from mild to severe.
Anaphylaxis is a severe, potentially life-threatening allergic reaction occurring within seconds or minutes of exposure.

Definitions:

1. **Mild-** Hives, rash to arms or legs, itching, anxiety.
2. **Moderate-** Hives, rash to torso, bronchospasm, nausea.
3. **Severe-** Respiratory distress, wheezing, chest tightness, difficulty swallowing, altered mental status.
4. **Anaphylactic shock-** Signs of hemodynamic instability, tachycardia, ALOC, hypotension, syncope.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment.
   E. Skin assessment.
   F. Lung sounds before and after treatment.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Sneezing. 2. Itching of the nose, eyes or roof of the mouth. 3. Runny, stuffy nose. 4. Swelling of the lips, tongue, face or throat. 5. Hives. 6. Edema at the sting site. 7. Cough, chest tightness, wheezing or shortness of breath. 8. Loss of consciousness. 9. A drop in BP. 10. Urticaria. 11. Lightheadedness. 12. A rapid, weak pulse. 13. Nausea and vomiting. 14. Abdominal pain.	1. Known allergy. 2. Asthma. 3. Eczema. Home Meds: 1. Epi-pen. 2. Diphenhydramine.	1. Bronchospasms. 2. Gastroenteritis.

Allergic Reaction/Anaphylaxis

1. Monitor SpO2, if <94%, O2, 1-15 LPM, NC or NRB, titrate to 94%.
2. If wheezing albuterol 5mg/6ml NS nebulized, PRN.

Treatment #1- Mild reaction:
1. Diphenhydramine 50mg PO.

Treatment #2- Moderate reaction:
1. IV, NS, TKO.
2. Diphenhydramine 50mg PO/IV/IM.

Treatment #3- Severe reaction:
1. Cardiac monitor.
2. IV/IO, NS, TKO.
3. Epinephrine 0.3mg **1:1,000** IM in lateral thigh.
4. Diphenhydramine 50mg IM/IV/IO.
5. Consider CPAP for respiratory distress.

Treatment #4- Anaphylactic shock:
1. Cardiac monitor.
2. Establish large bore IV/IO, NS.
3. Epinephrine 0.3mg **1:1,000** IM, lateral thigh. Repeat x1 in 5 minutes, if symptoms not significantly improved.
4. Diphenhydramine 50mg IM/IV/IO.
5. Consider CPAP for respiratory distress.
6. If MAP < 60, without fluid overload (CHF, ESRD, HD), NS 500ml rapid IVF bolus, titrate to MAP > 60, max 2L.

If after 2L NS, MAP < 60
7. Epinephrine 10mcg **1:100,000** IV/IO, every 2 minutes, titrate to MAP > 60.

If patient becomes:
8. Unresponsive with pulses:
   A. Epinephrine drip infusion of 5mcg/min IV/IO.
9. Unresponsive with no pulses:
   B. Adult cardiac arrest protocol ACAR-04.

Considerations:
1. Attempt to identify allergen if it can be done **SAFELY**.
2. Remove allergen, if possible.
3. If patient has received an EpiPen prior to arrival and is asymptomatic administer diphenhydramine 50mg PO. If patient is mildly symptomatic, administer diphenhydramine 50mg IM/IV.
4. Consider 12 Lead ECG for any patient with possible cardiac history.

To make epinephrine **1:100,000**:
1. Mix 9ml NS with, 1ml of epinephrine **1:10,000.**

To make **epinephrine Infusion** with concentration of epinephrine 4mcg/ml:
1. Add 1mg of epinephrine **1:1,000** to 250ml NS.

Dosage = mcg/min, 60gtts/1ml drip set 5 mcg= **75 drops/min**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Bites & Envenomation

Common poisonous spiders to the Central Valley are the Brown Widow (brown with orange hourglass on belly), Black Widow (black with red hourglass on body) spiders, and the Brown Recluse spider. The only known, indigenous poisonous snake in the Central Valley is the Rattlesnake.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Pain scale PRN.
   C. Physical assessment.
   D. Lung sounds.
   E. Skin signs and capillary refill.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Abrasions. 2. Punctures. 3. Swelling and edema. 4. Pain to site.	1. Working on or around woodpiles or agriculture storage. 2. Hiking.	1. Abscess. 2. Cellulitis. 3. Necrosis. 4. Necrotizing fasciitis. 5. Allergic reaction. 6. Anaphylaxis.

Bites & Envenomation

1. Ensure personal safety.
2. Clean and dress wound as appropriate.
3. Remove rings, watches, or other constricting items.

Treatment #1- Animal bite / Human bite:
1. For possible fracture, see protocol ATRA-01.
2. For complaint of pain, apply ice packs. If pain continues, provide pain management per protocol AGEN-03.

Treatment #2- Insect bite or sting:
1. Scrape away stinger if appropriate.
2. **DO NOT** squeeze venom sac.
3. If allergic reaction or anaphylaxis, see protocol AENV-01.
4. For complaint of pain, apply ice packs. If pain continues, provide pain management per protocol AGEN-03.
5. Consider cardiac monitor.
6. Consider monitoring SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.

Treatment #3- Snake bite:
1. AVOID excessive movement of extremity.
2. Circle erythema at puncture site with ink pen and note time.
3. Monitor distal pulses.
4. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
5. For complaint of pain, **DO NOT** apply ice packs. Provide pain management per protocol AGEN-03.
6. Consider cardiac monitor.

Considerations:
1. Do not apply constricting band or tourniquet.
2. Do not incise snakebites.
3. If dead or captured, have animal control transport snake for identification.
4. If safe, package insect or spider for transport and positive identification.
5. All bites (dog, cat, human, etc.) need to be transported for further evaluation at a hospital for further cleansing and potential antibiotic therapy.
6. Time since envenomation is important as anaphylaxis rarely occurs more than 60 minutes after inoculation.
7. Chemical ice packs should never be in direct contact with patient's skin. Chemical ice pack should be wrapped in towel or other fabric material.

Base Hospital Orders

1. For known and confirmed black widow bite: calcium chloride 8mg/kg, IV/IO, MAX 500mg.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Hyperthermia

Hyperthermia is a condition caused by your body overheating, usually as a result of prolonged exposure to or physical exertion in high temperatures. This most serious form of heat injury, heatstroke, can occur if your body temperature rises to 104° F (40° C) or higher. The condition is most common in the summer months.

Definitions:

1. **Mildly Symptomatic-** Signs or heat cramps and heat exhaustion.
2. **Grossly Symptomatic-** Signs of heatstroke including ALOC or unconsciousness.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment with skin signs.
   E. Lung sounds.
   F. Temperature.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Headache. 2. Chest pain. 3. Cramps. 4. Nausea. 5. Weakness. 6. Abnormal temperature. <u>Heat cramps and heat exhaustion:</u> 1. Temperature normal to slightly elevated. 2. Mental status alert to slightly confused. 3. Skin signs diaphoresis, warm or hot to touch. 4. Muscle cramps and weakness. <u>Heat stroke:</u> 1. High core temperature usually above 104 F. 2. Altered mental status. 3. Skin hot to touch and flushed. 4. Possible seizure activity. 5. Low BP. 6. Tachycardia.	Note: Persons at greatest risk of hyperthermia are: 1. The elderly. 2. Athletes. 3. Persons on medications, which impair the body's ability to regulate heat.	1. Always rule out other causes of ALOC. 2. Drug Induced hyperthermia. 3. Malignant hyperthermia. 4. Rhabdomyolysis. 5. Sepsis. 6. Serotonin syndrome.

Hyperthermia

1. Move patient to cool environment.
2. Remove excess clothing.

Treatment #1- Mildly symptomatic:

1. Spray or sprinkle patient's face with cool (not cold) water and use fan to evaporate.
2. Apply ice packs to palms of hands and soles of feet.
3. If able to swallow safely, cool water PO.
4. Consider IV, NS, TKO.
5. NS 500ml IVF bolus, IV. Hold fluids if evidence of fluid overload.

Treatment #2- Grossly symptomatic:

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Obtain blood glucose level.
4. Ice packs to palms of hands and soles of feet.
5. IV/IO, NS, TKO.
6. NS 500ml IVF bolus, IV, max 2L.
7. If seizing, see seizure protocol ANRO-05.

Considerations:

1. Chemical ice packs should never be in direct contact with patient's skin. Ice pack should be wrapped in towel or other fabric material.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Hypothermia

Hypothermia is a medical emergency that occurs when your body loses heat faster than it can produce heat, causing dangerously low body temperatures. Normal body temperature is around 98.6° F (37° C). Hypothermia occurs as your body temperature falls below 95° F (35° C).

Definitions:

1. **Mildly symptomatic-** Signs and symptoms of hypothermia.
2. **Grossly symptomatic-** Signs and symptoms of hypothermia with ALOC, loss of consciousness or hypotension.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 10 minutes for stable patients
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 Lead ECG.
   B. Blood glucose level.
   C. Pain scale.
   D. Physical assessment.
3. Patient's body temperature.
4. Length of exposure.
5. Air temperature, water temperature.
6. Was patient wet or dry.
7. Time of mental status changes.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Shivering. 2. Slurred speech or mumbling. 3. Slow, shallow breathing. 4. Weak pulse. 5. Lack of coordination. 6. Drowsiness. 7. Confusion or memory loss. 8. Loss of consciousness. 9. Altered mental status. 10. Evidence of local cold injury-blanching, red or wax looking skin especially ears, nose and fingers, burning or numbness in affected areas. 11. Stuporous or comatose. 12. Dilated pupils. 13. Hypotensive or pulseless. 14. Slowed or absent respirations.	1. Trauma. 2. Alcohol consumption. 3. Pre-existing medical problems.	1. Rule out other causes for ALOC. 2. Myxedema (severe hypothyroid). 3. Sepsis. 4. Environmental exposure. 5. Adrenal Insufficiency.

Hypothermia

1. Move patient to warm environment.
2. Remove clothing if wet and cover with warm blankets.
3. Apply heat packs to groin and axilla.

Treatment #1- Mildly symptomatic:
1. Consider IV, NS, TKO.
2. Consider WARM NS 500ml IVF bolus. May repeat x1, max 1L.

Treatment #2- Grossly symptomatic:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Obtain blood glucose level, if <70 mg/dL, see protocol ANRO-03.
4. Consider 12 lead ECG.
5. IV/IO, NS, TKO.
6. WARM NS 500ml IVF bolus IV/IO, if not fluid overloaded. May repeat as needed, max 2L.

Considerations:
1. Do not attempt to thaw out frost bitten areas or apply heat packs to frostbite sites.
2. Chemical heat packs should never be in direct contact with patient's skin. Heat pack should be wrapped in towel or other fabric material.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Adult Trauma

Trauma

Trauma can either be blunt or penetrating, open or closed, or any combination of all.

Definitions:

1. **Blunt Trauma-** Traumatic injury caused by a blunt object or surface.
2. **Penetrating-** Traumatic injury caused when an object enters the body.
3. **Open-** Traumatic injury with a break in the skin.
4. **Closed-** Traumatic injury without a break in the skin.
5. **TBSA-** Total Burn Surface Area.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level, if diabetic.
   C. Pain scale PRN.
   D. Medications such as blood thinners.
   E. Baseline GCS and GCS after treatment.
   F. Physical assessment including skin signs and capillary refill
   G. Lung sounds.
   H. Complete/Head to toe exam.

Objective Findings:

1. Mechanism of injury.
2. Medical history e.g. cardiovascular problems, diabetes, or seizure disorder
3. Check for DCAP-BTLS (Deformity, Contusion/Crepitus, Abrasion, Puncture, Bleeding, Tenderness, Laceration, Swelling).
4. Glasgow coma score.
5. Neurological impairment or focal deficit e.g. paralysis, weakness.
6. Eyes/vision e.g. pupil inequality and reactivity, eye tracking, impaired vision/double vision, stars.
7. Check for paradoxical chest wall movement (flail chest), rib cage, and sternal instability.
8. Check for pelvic instability, abdominal rigidity and guarding. Check for range of motion, distal pulses, sensation, skin color, and associated injuries.

Trauma

1. Place in spinal motion restriction if indicated.
2. See injury specific guidelines.
3. If bleeding, see injury specific guidelines.

Treatment #1- Symptomatic:
1. Monitor SpO2, if <94%, 1-15 LPM via NC or NRB, titrate to 94%.
2. Consider treating for pain. See protocol AGEN-03.

If loss of consciousness:
3. Obtain blood glucose level. If <70 mg/dL, see protocol ANRO-03.
4. Consider stroke screen. If positive, see protocol ANRO-01.

If chest pain:
5. Cardiac monitor.
6. Consider 12 lead ECG. Obtain if concern for medical emergency caused traumatic event or blunt trauma to chest.

Treatment #2- Grossly symptomatic or signs of shock:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Consider treating for pain. See protocol AGEN-03.

If loss of consciousness or ALOC:
4. Obtain blood glucose level. If <70 mg/dL, see protocol ANRO-03.
5. Consider stroke screen. If positive, see protocol ANRO-01.

If chest injury:
6. Consider 12 lead ECG. Obtain if concern for medical emergency caused traumatic event or blunt trauma to chest.
7. Large bore IV x2, NS, TKO.
8. If SBP <90, NS 500ml rapid IVF bolus. Titrate to SBP >90, max of 1L.

For blunt or penetrating trauma to the torso:
9. 2 gm TXA IV/IO over 1 minute or infusion in 100ml NS over 10 min.

Considerations:
1. If brain injury is suspected, elevate the head of the patient as long as no signs of shock are present.
2. Head injured patients that require intubation (No gag reflex and cannot protect own airway AAIR-01) if time allows, pre-medicate head injured patients with fentanyl 2 mcg/kg IVP/IO prior to intubation.
3. Traumatic brain patients are especially sensitive to hypotension and hypoxia.
4. Transport patient in position of comfort if not in spinal precautions. Place pregnant patients in left lateral recumbent position.
5. If concern for spinal cord injury, patient should be laid flat. If patient is without thoracic or lumbar tenderness, may be placed in semi-fowler position no greater than 30 degrees.
6. All patients with a period of unconsciousness should be transported to an emergency department for evaluation.
7. If patient meets Trauma Triage Criteria, transport to approved trauma center.
8. Scene time should be **LESS THAN 10 MINUTES.**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Injury Specific Guidelines

Trauma: Injury Specific Treatments

Treatment for Bleeding Control	Treatment Considerations
1. Direct pressure. 2. If unable to control with direct pressure alone, use hemostatic dressing on wound and pack wound if applicable. 3. Elevate extremity. 4. If bleeding is still not controlled, apply tourniquet.	1. Secure tourniquets as high on arm or leg as possible. 2. Note time of placement. 3. Do not apply bulky dressing to wounds as they can hide bleeding.
Treatment for Eye Injury	**Treatment Considerations**
1. Apply dressing as appropriate. 2. Loosely cover affected and unaffected eye.	1. **DO NOT** attempt to re-insert eye.
Treatment for Tooth Injury	**Treatment Considerations**
1. Keep avulsed teeth in saline soaked gauze. **OR** 2. Commercial tooth saver kit. 3. Transport tooth with patient.	1. **DO NOT** attempt to re-insert teeth. 2. **DO NOT** attempt to remove partially avulsed teeth.
Treatment for Mandible Fracture	**Treatment Considerations**
1. Splint with cravat or bandage.	1. Monitor airway for compromise or difficulty breathing.
Treatment for Impaled Object	**Treatment Considerations**
1. Stabilize with large bulky dressings. 2. Leave in place.	1. Removal of impaled objects should only be considered if object interferes with CPR or airway cannot be managed. 2. Consider base contact for consult.
Treatment for Flail Chest	**Treatment Considerations**
1. Stabilize chest with large bulky dressing.	1. Observe for tension pneumothorax.
Treatment for Open Chest Wound	**Treatment Considerations**
1. Cover wound with loose dressing, **DO NOT** seal. Sucking chest wounds: 2. Immediately cover with gloved hand. 3. Cover with occlusive dressing taped on three sides **OR** 4. Use commercially available chest seal.	1. Continuously monitor patient for tension pneumothorax. 2. Attempt to “burp” the wound by removing occlusive dressing, allowing air to escape and then recovering the wound, prior to needle decompression.
Treatment for Tension Pneumothorax	**Treatment Considerations**
1. Perform needle decompression: A. 2nd or 3rd Intercostal space at midclavicular line.	1. Tension pneumothorax occurs when a patient has: A. Absent or decreased lung sounds. B. Difficulty breathing. C. Hypotension.

Trauma: Injury Specific Treatments	
Treatment for Cardiac Tamponade	Treatment Considerations
1. Cardiac monitor. 2. 12 Lead ECG. 3. If SBP <90, NS 500ml rapid IVF bolus. Titrate to SBP >90, max of 1L.	
Treatment for Cardiac Contusion	Treatment Considerations
1. Cardiac monitor for dysrhythmias. A. V-Tach- see protocol ACAR-09. 2. Obtain 12 lead ECG.	1. Consider 12 lead with blunt chest trauma.
Treatment for Evisceration of Organs	Treatment Considerations
1. Cover eviscerated organs with saline soaked gauze.	1. Frequently assess gauze for dryness and add additional saline if needed. 2. **DO NOT** attempt to reinsert organs.
Treatment for Genital Injuries	Treatment Considerations
1. Cover genitalia with saline soaked gauze.	1. If necessary, apply direct pressure to control bleeding. 2. Treat amputation as extremity amputation.
Treatment for extremity Injuries	Treatment Considerations
1. Check for range of motion, distal pulses, sensation, skin color, and associated injuries. 2. Elevate extremity. 3. Apply cold packs to reduce pain and decrease soft tissue swelling. 4. Splint injured extremity in position found unless precluded by extrication consideration, no palpable pulses, or patient discomfort.	1. Pad all splinted extremities and recheck distal pulses and neurological function every 5 minutes. 2. Do not apply traction or attempt to reduce an open extremity fracture.
Treatment for Mid Shaft Femur Fracture	Treatment Considerations
1. Apply traction splint.	1. Closed mid shaft only.
Treatment for Extremity Amputation	Treatment Considerations
1. Place or cover amputated part with dry sterile dressing. 2. Place in sealed plastic bag or wrap with plastic. 3. Place dressed and wrapped part on top of ice or cold pack.	1. If patient condition allows transport amputated part with patient.
Treatment for Soft Tissue Injuries without serious bleeding	Treatment Considerations
1. Cover open wounds with sterile dressings.	

Trauma: Injury Specific Treatments

Treatment for Burns	Treatment Considerations

1. Remove clothing from burned area if possible without removing skin.
2. Calculate TBSA using rule of nines.
3. Patients with respiratory distress see protocol ARSP-01 to 03.
4. Consider treating for pain. See protocol AGEN-03.

If <20% TBSA:

5. Estimate depth of burn (full thickness, partial thickness, surface burn).
6. Cover with sterile dressing soaked with sterile water.

If >20% TBSA:

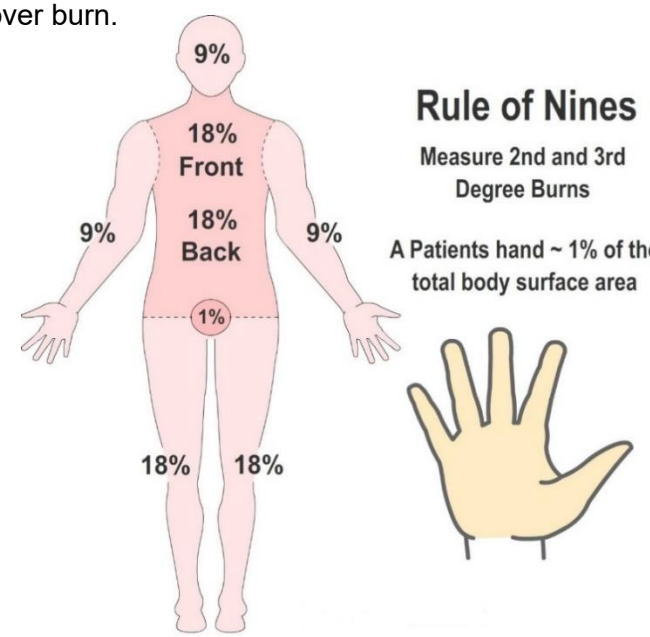
7. Cover with dry sterile burn sheet or cleanest dry sheet.
8. Place patient on dry sterile burn sheet for transport.
9. IV x2, NS, WO, titrate to Parkland Formula.

Chemical:

1. Follow appropriate decontamination or hazmat procedures.
2. Brush off dry powders.
3. Remove contaminated clothing.
4. Irrigate with copious amounts of water.

Thermal and electrical:

1. Stop the burning process.
2. Cool with water for up to thirty (30) minutes, **DO NOT DELAY** transport to approved trauma center.
3. Remove jewelry and non-adhered clothing.
4. Cover burn.



1. Always attempt to identify type and source of burn:
   A. Chemical.
   B. Electrical.
   C. Steam.
   D. Smoke.
   E. Open flame.

Parkland Formula

4 ml x %TBSA x body weight (kg) = Total for 24 hours.
50% given in first eight hours;
50% given in next 16 hours.

Chemical:

1. **DO NOT** attempt to remove tar or other adhered material.
2. If possible, bring chemical Safety Data Sheet (S DS) with patient to hospital.

Thermal and electrical:

1. Avoid prolonged cool water usage due to risk for hypothermia and local cold injury.
2. **DO NOT** use ice water or apply ice or ice packs to patient.
3. **DO NOT** break blisters.

Traumatic Arrest

Loss of cardiac and pulmonary function due to traumatic event.

Definitions:

1. High quality CPR - Use TEAM approach:
   A. 100 to 120 compressions per minute.
   B. **30:2** ratio compression to ventilation ratio.
   C. Compress at least 2 inches.
   D. Allow complete recoil.
   E. Minimize interruptions.
   F. Rotate compressors every 2 minutes.
   G. Pre-charge monitor for defibrillation while CPR is in progress.

Documentation Standards:

1. Every 5 minutes:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   1. Capnography.
   2. Blood glucose.
   3. Physical assessment.

Objective Findings:

Obtain patient history and document the following:

1. Estimated down time.
2. Quickly assess for obvious signs of death:
   A. Decapitation.
   B. Decomposition.
   C. Burnt beyond recognition.
   D. Lividity.
   E. Rigor mortis.
3. Circumstances surrounding the arrest:
   A. Onset (witnessed or unwitnessed).
   B. Preceding symptoms.
   C. Bystander CPR.
   D. Medications.
   E. Environmental factors (hypothermia, inhalation, and asphyxiation).

Traumatic Arrest

- Is there obvious signs of death per EMS Policy No. 5103, or,
- Unwitnessed arrest by First Responder with estimated transport time of more than 20 minutes to the approved trauma center,
  AND
  ECG rhythm is PEA less than 40 bpm or asystole.

NO → **INITIATE IMMEDIATE TRANSPORT** to approved trauma center.

YES → **CEASE EFFORTS**

Treatment- Treat reversible causes upon identification

Reversible Causes:

1. **Hypovolemia-** (History suggesting volume depletion) NS 2L IVF bolus, start 2nd IV.
2. **Hypoxia-** (SpO2 <94%) Maintain ventilations at 24/min, with 100% O2, BVM & OPA. Intubate if CL of 1 or 2, supraglottic airway if CL >3.
3. **Hydrogen Ion-** (Acidosis, crush patient, long down time, dialysis patient) Sodium Bicarbonate 1mEq/kg IV/IO.
4. **Hypoglycemia**- (Blood glucose level <70 mg/dL) Dextrose 10% 10ml/kg IV/IO or Dextrose 50% 25g IV/IO.
5. **Hypocalcemia-** (Long down time, crush injury, dialysis patient) Calcium Chloride 500mg 10% IV/IO.
6. **Hyperkalemia-** (Long down time, crush injury, dialysis patient) Sodium Bicarbonate 1mEq/kg IV/IO.
7. **Hypothermia-** (Body temp below 34°C) Active rewarming with warm IV/IO fluids, start IV if possible, hot packs to neck and groin.
8. **Tension Pneumothorax-** (Absent lung sounds on affected side) Needle decompression.
9. **Tamponade, Cardiac-** If SBP <90, lung sounds are clear and no fluid restrictions exist: NS 2L IVF Bolus, start 2nd IV.
10. **Toxins-** See protocol AODP-01 to 07.
11. **Thrombosis, Pulmonary & Coronary-**
12. **Torsade's De Pointes-** Magnesium Sulfate 2g IV/IO.

Considerations:

1. The goal is high quality CPR.
2. **DO NOT** delay vascular access with IV attempts. Go directly to IO if IV is not established after first attempt.
3. Monitor capnography with BVM & OPA.
4. Oral tracheal intubation should be used as the definitive airway for CL scores of 1 & 2.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed **or** patient has atypical presentation.

Traumatic Arrest

Algorithm - Immediate Transport

Transport

To approved Trauma Center.
Perform ALL treatment enroute.

1. 200 compressions.
2. OPA & BVM at 24/min.
3. Bilateral needle decompression unless isolated head injury.
4. IO/IV
5. NS, Max 2L & 2G TXA IV/IO over 1 min or infusion in 100ml NS over 10 min.
6. Consider advanced airway.

2 Min

Rhythm check #1

V-Fib/V-Tach | Asystole/PEA | ROSC

Shock 200Joules.

1. 200 compressions.

See ROSC protocol ATRA-01.

2 Min

Rhythm check #2

V-Fib/V-Tach | Asystole/PEA | ROSC

Shock 200Joules.

1. 200 compressions.

See ROSC protocol ATRA-01.

1. 200 compressions.
2. Lidocaine 1mg/kg IV/IO, No Repeat.

2 Min

Return to Rhythm check #1

All Joules- are in Biphasic, Use of equivalent Monophasic dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single

Always consider reversible causes and treat when identified.

2 Min

Traumatic Arrest

Treatment - Immediate Transport

If patient meets criteria for Immediate Transport, begin transport to approved Trauma Center. Perform ALL treatment enroute. (0 min of CPR):

1. Start CPR at 100-120 compressions per minute.
2. Insert OPA.
3. Ventilate with BVM at 24 per minute.
4. Perform bilateral needle decompression unless isolated head injury.
5. IV/IO, X2
6. NS, Max 2 L & 2G TXA, IV/IO over 1 min or infusion in 100ml NS over 10 min.
7. Consider advanced airways.

If after 200 compressions, (2 min of CPR):

1. **ROSC-** Initiate transport if not already transporting, see ROSC protocol ATRA-01.
2. **Asystole/PEA-**
   A. Continue CPR.
3. **VFib/VTach-**
   A. Continue CPR.
   B. Shock at 200 joules (or manufacturer's recommendation).

If after additional 200 compressions, (4 min of CPR):

1. **ROSC-** Initiate transport if not already transporting, see ROSC protocol ATRA-01.
2. **Asystole/PEA-**
   A. Continue CPR
3. **VFib/VTach-**
   A. Shock at 200 joules (or manufacturer's recommendation).
   B. Continue CPR.
   C. Lidocaine 1mg/kg IV/IO, once. No repeat.

Always consider reversible causes and treat when identified.

Considerations:
When mechanism of injury does not correlate with clinical condition, suggesting a non-traumatic cause of cardiac arrest, standard resuscitation measures should be followed. See ACAR-04, p. 36.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Obstetrical

Childbirth

Childbirth, the process of delivering a baby and the placenta, membranes, and umbilical cord. During the first stage of labor, the cervix dilates fully. The first stage of labor is divided into two phases: the latent phase and the active phase. In the latent phase, contractions become progressively more coordinated and the cervix dilates. The latent phase averages about 8 hours for a nullipara (a woman having her first baby) and 5 hours for a multipara (a woman having a subsequent baby). In the active phase, the presenting part of the baby descends into the mid pelvis. The active phase averages about 5 hours for a nullipara and 2 hours for a multipara. In the second stage (which is called expulsion), the baby moves out through the cervix and vagina to be born. Expulsion generally lasts 2 hours for a nullipara and 1 hour for a multipara. The third stage of labor begins with the delivery of the baby and ends when the placenta and membranes are expelled.

Definitions:

1. **Imminent delivery-** Means regular contractions, bloody show, low back pain, feels like bearing down, crowning.
2. **Breech presentation-** Means presentation of buttocks or both feet.
3. **Limb presentation-** Means presentation of a single extremity.
4. **Nuchal cord-** Condition where the umbilical cord is around the baby's neck during delivery.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. SpO2.
   B. Blood glucose level PRN.
   C. Pain scale PRN.
   D. Physical assessment.
3. Last menstrual period and possibility of pregnancy.
4. Weeks of pregnancy, estimated due date, any anticipated problems (e.g. pre-eclampsia, lack of prenatal care, expected multiple births).
5. Presence of contractions, cramps, or discomfort.
6. Pertinent past medical history.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Crowning. 2. Bleeding. 3. Abdominal pain. 4. Contractions.	1. Pregnant. 2. Eclampsia. 3. Pre-eclampsia. 4. Multiple birth. Home Meds 1. Pre-natal vitamins. 2. Magnesium Sulfate.	1. Spontaneous abortion. 2. Complicated breech delivery. 3. Braxton's Hicks contractions. 4. Premature ruptured membranes.

APGAR Scale

	0 Points	1 Point	2 Points
Appearance	Cyanotic/pale all over	Peripheral cyanosis only	Pink
Pulse	0	<100	>100
Grimace	No response to stimulus	Weak cry or movement when stimulated	Cry when stimulated
Activity	Floppy	Some flexion	Well flexed and resisting extension
Respirations	Apneic	Slow or irregular respirations	Strong cry

Childbirth

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. IV, NS, TKO when possible.

Treatment #1- Normal Delivery:

1. For imminent delivery, assist mother with delivery, using clean preferably sterile technique:
   A. Control and guide delivery of head and shoulders.
   B. Once delivered, wipe face with clean dry cloth, suction only if needed.
   C. Assess APGAR.
   D. Clamp and cut cord.
   E. Dry and warm neonate.
2. If neonatal resuscitation is needed, see protocol PCAR-01.
3. Perform fundal massage and delivery placenta.
4. Continue to protocol AOBG-04, for further post-partum care.

Treatment #2- Nuchal Cord:

1. Attempt to gently slide cord over baby's head.
2. If cord is tight, clamp and cut cord.

Treatment #3- Breech Delivery:

1. If breech is two feet or buttocks, attempt to deliver as normal delivery.
2. If unable to delivery or other breech types:
   A. Place a gloved hand into the birthing canal to relive pressure on umbilical cord.
   B. Transport.
   C. Place mother in left lateral recumbent.

Treatment #4- Prolapsed Cord:

1. Place in Trendelenburg position.
2. Elevate hips with pillow.
3. If cord has a pulse, cover cord with saline soaked gauze.
4. If cord has no pulse, place a gloved hand into the birthing canal to relive pressure on cord.

Considerations:

1. If undeliverable breech, transport immediately.
2. If prolapsed cord has no pulse, transport immediately.
3. Always assess mother for signs of shock and treat accordingly to protocol AOBG-04.
4. First priority in childbirth is assisting mother with delivery of child.
5. The primary complication of the newborn is hypothermia which can occur in minutes.
6. Ensure newborn is warm and dry.
7. Ensure newborn has a clear airway. Suction with bulb syringe as needed.
8. Keep baby at or below the level of the mother's heart until cord is clamped.
9. Do not pull on the umbilical cord.
10. Consider transport while waiting for placenta to deliver.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Eclampsia & Preeclampsia

Preeclampsia and Eclampsia are diseases of pregnancy that involve the development or worsening of high blood pressure during the second half of pregnancy. Pre-eclampsia may develop into the more severe condition eclampsia. Eclampsia includes symptoms of preeclampsia, along with seizures. These conditions typically occur after 20 weeks of pregnancy. They also may develop shortly after delivery. In very rare situations, they occur before 20 weeks of pregnancy.

Definitions:

1. **Severe Preeclampsia-** means pregnancy 20 weeks or greater with hypertension (SBP >140, diastolic >90), **WITHOUT** change in mental status, visual disturbances, and/or peripheral edema.
2. **Eclampsia-** means pregnancy 20 weeks or greater with seizures, change in mental status, and/or coma, and typically but not always hypertension (SBP >140, diastolic >90).
3. **Post-partum eclampsia-** means within 6 weeks post-partum hypertension (SBP >140, diastolic >90), **WITH** change in mental status, visual disturbances, peripheral edema, seizures, and/or coma.
4. **Gravid fundus-** Is a pregnant uterus with obvious signs of anatomical changes related to pregnancy.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale PRN.
   D. Physical assessment.
3. Last menstrual period and possibility of pregnancy.
4. Duration and amount of any bleeding.
5. Weeks of pregnancy, estimated due date, any anticipated problems (e.g. pre-eclampsia, lack of prenatal care, expected multiple births).
6. Presence of contractions, cramps, or discomfort.
7. Pertinent past medical history
8. Estimated blood loss.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Spontaneous abortion or passage of products of conception. 2. Headaches, blurred vision. 3. Severe abdominal cramps or sharp abdominal pain. 4. Crowning. 5. Painful vaginal bleeding. 6. Painless vaginal bleeding.	1. Eclampsia. 2. Preeclampsia. 3. Multiple Birth. 4. Eclampsia or Preeclampsia with previous pregnancies. 5. Gestational hypertension. Home Meds 1. Prenatal Vitamins. 2. Magnesium Sulfate.	1. Eclampsia. 2. Preeclampsia. 3. Placenta previa. 4. Placenta abruption. 5. Intra cranial hemorrhage.

Eclampsia & Pre-eclampsia

1. Cardiac monitor.
2. Monitor SpO2, if <94%, 1-15 LPM O2 via NC or NRB, titrate to 94%.
3. IV, NS, TKO.

Treatment #1- Eclampsia:
1. Obtain blood glucose level, if <70 mg/dL, see protocol ANRO-03.
2. If seizing (regardless of BP), Magnesium Sulfate 2g IV in 250 ml NS, infusion over 10 minutes.
3. Initiate transport during infusion.
4. If seizure continues after Magnesium Sulfate, see base hospital order below.
5. If seizures continue after 10 minutes, see seizure protocol ANRO-05.
6. For ALOC or visual disturbances, make base hospital contact for Magnesium Sulfate.

Treatment #2- Preeclampsia:
1. Obtain blood glucose level, if <70 mg/dL, see protocol ANRO-03.

Considerations:
1. Transport pregnant patients with Eclampsia or Preeclampsia to closest OB receiving facility.
2. If patient presents in the third trimester or is obviously pregnant, place in left lateral recumbent position.
3. Do not visualize genital region except for known or suspected active bleeding, severe trauma to region or active labor.
4. When possible, have a care giver of same gender as the patient perform evaluations of the pelvis/genital area.

Base Hospital Orders

If ALOC and SBP >140:
1. Magnesium Sulfate 2-4g IV over 10 minutes.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

If seizure continues after initial 2 G
1. Additional 2 G IV over 10 minutes

Obstetrical Emergencies

The first principles of dealing with obstetric emergencies are the same as for any emergency (see to the airway, breathing, and circulation), but remember that in obstetrics there are two patients; the fetus is very vulnerable to maternal hypoxia.

Definitions:

1. **High risk obstetrical-** means a pregnancy in which some condition puts the mother, the developing fetus, or both at higher than normal risk for complications during or after the pregnancy and birth.
2. **Placenta Previa-** Bright red vaginal bleeding without pain during the second half of pregnancy is the main sign of placenta previa. Some women also have contractions.
3. **Placenta Abruptio-** Bright red vaginal bleeding with complaints of back or abdominal pain. Patient may also experience contractions or firmness and rigidity to abdomen.
4. **Spontaneous abortion-** Loss of a fetus before the 20th week of pregnancy. May have vaginal bleeding or passage of fetal tissue, severe cramps, abdominal pain or bleeding that progress from light to heavy.
5. **Ectopic pregnancy-** Implantation of a fertilized egg outside the uterus. May have severe abdominal pain, abnormal vaginal bleeding, nausea and or vomiting.
6. **Gravid fundus-** Is a pregnant uterus with obvious signs of anatomical changes related to pregnancy.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. SpO2.
   C. Blood glucose level PRN.
   D. Pain scale PRN.
   E. Physical assessment.
3. Last menstrual period and possibility of pregnancy.
4. Duration and amount of any bleeding.
5. Weeks of pregnancy, estimated due date, any anticipated problems (e.g. pre-eclampsia, lack of prenatal care, expected multiple births).
6. Presence of contractions, cramps, or discomfort.
7. Pertinent past medical history.
8. Estimated blood loss.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Spontaneous abortion has passage of products of conception. 2. Headaches, blurred vision. 3. Severe abdominal cramps or sharp abdominal pain. 4. Crowning. 5. Painful vaginal bleeding. 6. Painless vaginal bleeding.	1. Eclampsia. 2. Preeclampsia. 3. Multiple Birth. Home Meds 1. Prenatal Vitamins. 2. Magnesium Sulfate.	1. Eclampsia. 2. Preeclampsia. 3. Placenta Previa. 4. Placenta abruptio.

Obstetrical Emergencies

1. Cardiac monitor.
2. Monitor SpO2

Treatment #1- Pregnant without shock:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. If in 3rd trimester and bleeding, establish IV.

IV, NS, TKO.

Treatment #2- Pregnant with shock:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. IV, NS, TKO.
3. If MAP < 60 without evidence of fluid overload, give NS 500ml rapid IVF bolus, may repeat to a max 2L.
4. If MAP < 60with fluid overload, give NS 250ml rapid IVF bolus, may repeat to a max 1L.
5. Consider 2nd IV for refractory hypotension.

Considerations:
1. If patient presents with gravid fundus, place in left lateral recumbent position.
2. Do not visualize genital region except for known or suspected active bleeding, severe trauma to region or active labor.
3. For active bleeding, place bulky dressing externally to absorb blood flow.
4. Do not pack vagina with any material, use external dressings only.
5. When possible, have a care giver of same gender as the patient perform evaluations of the pelvis/genital area.

Base Hospital Orders

Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Postpartum Care

Postpartum emergencies can include headache, eclampsia, infection, heart failure, and hypertension. Failure to recognize and treat these conditions can lead to disastrous consequences for the patient, including stroke, permanent brain damage, or death.

Definitions:

1. **Postpartum bleeding-** Causes of postpartum bleeding include loss of tone in the uterine muscles, a bleeding disorder, or the placenta failing to come out completely, or tearing. Symptoms include vaginal bleeding that doesn't slow or stop.
2. **Perineal trauma-** Vaginal tears during childbirth, also called perineal lacerations or tears, occur when the baby's head is coming through the vaginal opening and is either too large for the vagina to stretch around or the head is a normal size but the vagina doesn't stretch easily. These kinds of tears are relatively common and may or may not have significant bleeding.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. SpO2.
   C. Blood glucose level.
   D. Pain scale.
   E. Physical assessment.
3. Last menstrual period and possibility of pregnancy.
4. Duration and amount of any bleeding.
5. Weeks of pregnancy, estimated due date, any anticipated problems (e.g. pre-eclampsia, lack of prenatal care, expected multiple births).
6. Presence of contractions, cramps, or discomfort.
7. Pertinent past medical history.
8. Estimated blood loss.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Spontaneous abortion has passage of products of conception. 2. Headaches, blurred vision. 3. Severe abdominal cramps or sharp abdominal pain. 4. Crowning. 5. Painful vaginal bleeding. 6. Painless vaginal bleeding.	1. Eclampsia. 2. Preeclampsia. 3. Multiple Birth. Home Meds 1. Prenatal Vitamins. 2. Magnesium Sulfate.	1. Eclampsia. 2. Preeclampsia. 3. Placenta previa. 4. Placenta abruptio.

Post-partum Care

1. Cardiac monitor.
2. Monitor SpO2.

Treatment #1- Postpartum without shock:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Perform fundal massage if bleeding or cramping.
3. Control external bleeding with large bulky dressing.
4. Put infant to breast (as appropriate).
5. For seizure activity see Eclampsia protocol AOBG-02.

Treatment #2- Postpartum with shock:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Perform fundal massage If bleeding or cramping.
3. Put infant to breast (as appropriate).
4. Control external bleeding with large bulky dressing.
5. IV, NS, TKO.
6. If MAP < 60 without fluid overload, NS 500ml rapid IVF bolus. May repeat to max 2L.
7. If MAP < 60 with signs of fluid overload, NS 250ml rapid IVF bolus. May repeat to max 1L.
8. Consider 2nd IV.
9. For persistent hypotension, **AVOID** push dose epinephrine. Contact base hospital.
10. For seizure activity see protocol ANRO-05.

Considerations:
1. Do not visualize genital region except for known or suspected active bleeding, or severe trauma to region.
2. For active bleeding, place bulky dressing externally to absorb blood flow.
3. Do not pack vagina with any material, use external dressings only.
4. When possible, have a caregiver of same gender as the patient perform evaluations of the pelvis/genital area.

Base Hospital Orders

1. If after 1L, NS if MAP < 60, consult base hospital to discuss push dose epinephrine.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Adult Overdose

Acute Dystonic Reactions

Acute dystonic reactions are an extrapyramidal side effect of antipsychotic and certain other medications such as Phenothiazines. Dystonia refers to sustained muscle contractions, frequently causing twisting, repetitive movements, or abnormal postures. They may affect any part of the body. Patients experiencing acute dystonic reactions are often frightened and fearful, and may be in considerable pain.

Definitions:

1. **Symptomatic/Mild Reaction-** Intermittent spasms or sustained involuntary contractions isolated to extremities, tongue or jaw.
2. **Grossly Symptomatic/Severe Reaction-** Intermittent spasms or sustained involuntary contractions affecting back or entire body.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose level.
   D. Pain scale.
   E. Physical assessment.
3. Name of medication.
4. Estimated number of pills or dose.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Inability to move eyes. 2. Muscle spasms of face, neck, body, arms, or legs causing unusual postures or unusual expressions on face. 3. Rapid or worm-like movements of tongue. 4. Sticking out of tongue. 5. Tic-like or twitching movements. 6. Trouble in breathing, speaking, or swallowing. 7. Uncontrolled chewing movements. 8. Uncontrolled movements of arms or legs. 9. Uncontrolled twisting movements of neck, trunk, arms, or leg.	1. Abdominal pain. 2. Nausea and vomiting. 3. Bipolar disorder. 4. Schizophrenia. <u>Common Med Names</u> 1. Prochlorperazine (Compazine, Compro, Procomp). 2. Chlorpromazine (Promapar, Thorazine). 3. Fluphenazine (Permitil, Prolixin). 4. Perphenazine. 5. Trifluoperazine (Stelazine). 6. Thioridazine (Mellaril).	1. Seizure.

Acute Dystonic Reactions

Treatment #1- Symptomatic/Mild Reaction:
1. Consider IV, NS, TKO.
2. If able to swallow safely, diphenhydramine 50 mg PO.
3. If **UNABLE** to swallow safely, diphenhydramine 1mg/kg IM/IV, max of 50mg.

Treatment #2- Grossly Symptomatic/Severe Reaction:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. IV, NS, TKO.
4. Diphenhydramine 1mg/kg IV/IO, max of 50mg.

Considerations:
1. If benzodiazepines have already been administered to treat seizures, **DO NOT** withhold Diphenhydramine.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Beta Blockers Overdose

Beta blockers, also known as beta-adrenergic blocking agents, are medications that are commonly used to reduce BP. Beta blockers work by blocking the effects of the adrenaline.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibility of beta blocker overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals beta blocker overdose and patient is showing signs and symptoms including bradycardia, hypotension, hypothermia, hypoglycemia, seizures.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale.
   D. Physical assessment.
   E. Pupils.
3. Name of medication.
4. Estimated number of pills or liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Hypotension. 2. Bradycardia. 3. AV block. 4. Heart failure. 5. Bronchospasm. 6. Hypoglycaemia. 7. Hyperkalaemia. 8. Stupor. 9. Coma. 10. Seizures.	1. High BP. 2. Irregular heart rhythm (arrhythmia). 3. Heart failure. 4. Chest pain (angina). 5. Heart attacks. 6. Migraine. 7. Certain types of tremors. Home Meds: 1. Acebutolol (Sectral). 2. Atenolol (Tenormin). 3. Bisoprolol (Zebeta). 4. Metoprolol (Lopressor, Toprol-XL). 5. Nadolol (Corgard). 6. Nebivolol (Bystolic). 7. Propranolol (Inderal LA, InnoPran XL).	1. Co-ingestion. 2. Calcium channel blocker OD. 3. Digoxin toxicity. 4. Complete heart block. 5. Renal failure.

Beta Blockers Overdose

1. Cardiac monitor.
2. 12 lead ECG.
3. Monitor SpO2.

Treatment #1- Asymptomatic:
1. If SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Consider, IV, NS, TKO.
3. Blood glucose level every 30 minutes.
4. If blood glucose level <70 mg/dL, see Hypoglycemia protocol ANRO-03.
5. If MAP < 60, NS 500ml IVF bolus, max 1L. Notify receiving hospital of hypotension.

Treatment #2- Symptomatic:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. IV, NS, TKO.
3. Blood glucose level every 15 minutes.
4. If blood glucose level <70 mg/dL, see hypoglycemia protocol ANRO-03.
5. MAP < 60without fluid overload or history of CHF/Dialysis, NS 500ml IVF bolus. May repeat, max 2L.
6. MAP < 60and HR <50 with fluid overload or history of CHF/Dialysis, NS 250ml IVF bolus. May repeat if no worsening fluid overload, max 1L.
7. For refractory hypotension with HR <50, epinephrine 10 mcg, **1:100,000**, IV/IO, every 2 minutes, titrate to MAP > 60.
8. If no response epinephrine & HR <50, initiate transcutaneous pacing.
9. For seizure activity, see protocol ANRO-05.

Considerations
1. Monitor QRS duration closely even in asymptomatic patients.
2. If patient is physically combative, consider involving law enforcement to assist in putting patient in 4-point restraints.

To make epinephrine **1:100,000**:
1. Mix 9ml NS with, 1ml of epinephrine **1:10,000.**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Calcium Channel Blocker Overdose

Calcium channel blockers are used in the treatment of hypertension, angina pectoris, cardiac arrhythmias, and other disorders. These medications are available in both immediate-release and extended-release preparations. The potential toxicity of these agents is substantial, and is often under appreciated by the public.

Definitions:

1. **Asymptomatic**- Patient has admitted or history reveals possibility of calcium channel blocker overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic**- Patient has admitted or history reveals calcium channel overdose and patient is showing signs and symptoms including hypotension, bradycardia, or sudden cardiac collapse.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Pain scale.
   D. Physical assessment.
3. Name of medication.
4. Estimated number of pills or liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Constipation. 2. Headache. 3. Palpitations. 4. Dizziness. 5. Rash. 6. Drowsiness. 7. Flushing. 8. Nausea. 9. Swelling in the feet and lower legs. 10. Bradycardia. 11. Hypotension. 12. Shortness of breath.	1. Hypertension. 2. Angina pectoris. 3. Cardiac arrhythmias. Home meds 1. Amlodipine (Norvasc). 2. Diltiazem (Cardizem, Tiazac, others). 3. Felodipine. 4. Isradipine. 5. Nicardipine. 6. Nifedipine (Adalat CC, Afeditab CR, Procardia). 7. Nisoldipine (Sular). 8. Verapamil (Calan, Verelan).	1. Co-ingestion. 2. Beta blocker OD. 3. Digoxin toxicity. 4. Complete heart block. 5. Renal failure.

Calcium Channel Blocker Overdose

1. Cardiac monitor.
2. 12 lead ECG.
3. Monitor SpO2.

Treatment #1- Asymptomatic:
1. If SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Consider IV, NS, TKO.

Treatment #2- Symptomatic:
1. if SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. IV/IO, NS, TKO.
3. If MAP < 60& HR <50, calcium chloride 20 mg/kg 10% IV/IO, max 2g .
4. If MAP remains <60 without fluid overload or history of CHF/Dialysis, NS 500ml IVF bolus. May repeat, max 2L.
5. If MAP remains <60 and HR <50 with fluid overload or history of CHF/Dialysis, NS 250ml bolus. May repeat if no worsening fluid overload, max 1L
6. After bolus if MAP < 60and HR <50, epinephrine 10 mcg **1:100,000** IV/IO, every 2 minutes, titrate to MAP > 60.
7. If no response to epinephrine, initiate transcutaneous pacing.

Considerations:
1. Monitor QRS duration closely even in asymptomatic patients.
2. Cardiac monitor for presence of AV nodal blocks.
3. If patient is physically combative, consider involving law enforcement to assist in putting patient in 4 point restraints.

To make epinephrine **1:100,000**:
1. Mix 9ml NS, with 1ml of epinephrine **1:10,000.**

Base Hospital Orders

1. Additional normal saline for hypotension.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Acute Drug Intoxication

Acute drug intoxication refers to the immediate and deleterious effects of drugs such as cocaine, amphetamines, PCP or bath salts, on the body. Although acute drug intoxication and drug dependence can be present in the same individual, these syndromes present with different symptoms.

Definitions:

1. **Intoxication**- History reveals or patient is showing signs and symptoms of acute drug intoxication however patient is cooperative.
2. **Intoxication with serious agitation**- History reveals or patient is showing signs and symptoms of acute drug intoxication however, patient is not cooperative, is a safety risk to crews or a safety risk to themselves. Safety risks include physically combative or erratic dangerous behavior.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. 12 lead ECG.
   B. Blood glucose level.
   C. Physical assessment.
   D. Pupils.
   E. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Tachycardia. 2. Hypertension. 3. Dilated pupils. 4. Hyperthermia. 5. Restlessness. 6. Anxiety, panic, paranoia. 7. Erratic behavior. 8. Tremors. 9. Psychosis. 10. Nausea. 11. Agitation.	1. Drug use. 2. Previous OD. Home Meds 1. Methadone.	1. Co-ingestion. 2. Stimulant induced MI. 3. Encephalopathy. 4. Drug induced psychosis.

Acute Drug Intoxication

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-6 LPM via NC, titrate to 94%.

Treatment #1- Intoxication:
1. If chest pain, obtain 12 lead ECG. If STEMI see chest pain protocol ACAR-03.

Treatment #2- Intoxication with serious agitation:
1. If chest pain, obtain 12 lead ECG, if STEMI see chest pain protocol ACAR-03.
2. If ALOC, obtain blood glucose level. If blood glucose level <70 mg/dL, see protocol ANRO-03.
3. Consider IV, NS, TKO, **ONLY IF SAFE TO DO SO**.
4. IF age is between 18 and 55, and patient is **PHYSICALLY COMBATIVE**, midazolam 4mg IM/IN. If outside these ages, make base hospital contact.

Considerations:
1. Safety is the highest priority. Consider law enforcement assistance if patient is agitated.
2. If patient is physically combative consider involving law enforcement to assist in putting patient in 4 point restraints.

Base Hospital Orders

1. Midazolam 2-4mg IM, for patients older than 55 and younger than 18.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Cyclic Antidepressants Overdose

The clinical presentation of cyclic antidepressant overdose is extremely variable. Patients can present alert with normal vital signs or comatose and hypotensive. In any case, rapid onset of symptoms and rapid deterioration are characteristic of cyclic antidepressant overdose.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibly of cyclic antidepressants overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals cyclic antidepressants overdose and patient is showing signs and symptoms related to cyclic antidepressants or is having dysrhythmias, VF/VT, widening QRS, prolonged QT, wide complex tachycardia that's is not VF/VT.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
2. BP.
3. Respirations.
4. Pulse.
5. SpO2.
6. If performed, before and after intervention or if condition changes:
   a. ECG.
   b. Blood glucose level.
   c. Pain scale.
   d. Physical assessment.
   e. Pupils.
7. Name of medication.
8. Estimated number of pills or liquid.
9. Route of administration.
10. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Blurred vision. 2. Dry mouth. 3. Constipation. 4. Weight gain or loss. 5. Rash. 6. Hives. 7. Increased heart rate. 8. Cardiac conduction delays. 9. Dysrhythmias. 10. Hypotension. 11. Respiratory depression. 12. Seizures. 13. Coma.	1. Depression. 2. Previous OD. 3. Panic disorder. 4. Bulimia. 5. Chronic pain. 6. Migraine. 7. Tension headaches. 8. Diabetic neuropathy. 9. Phantom limb pain. 10. Chronic itching. Home meds 1. Amitriptyline. 2. Amoxapine. 3. Desipramine (Norpramin). 4. Doxepin. 5. Imipramine (Tofranil). 6. Nortriptyline (Pamelor). 7. Protriptyline (Vivactil). 8. Trimipramine (Surmontil).	1. Co-ingestion.

Cyclic Antidepressants Overdose

1. Cardiac monitor.
2. Monitor SpO2.
3. Obtain 12 lead ECG.

Treatment #1- Asymptomatic:
1. If SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Consider IV, NS, TKO.

Treatment #2- Symptomatic or dysrhythmias:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. IV/IO, NS, TKO.
3. Sodium bicarbonate 50 mEq IV/IO every 3 min to resolution of ECG changes, max 150 mEq. May make base hospital contact for additional doses.
4. For seizure activity see protocol ANRO-05.
5. If MAP < 60 without fluid overload or history of CHF/Dialysis, NS 500ml IVF bolus. May repeat, max 2L.
6. If MAP < 60 with fluid overload or history of CHF/Dialysis, NS 250ml IVF bolus. May repeat if no worsening fluid overload, max 1L

7. If MAP < 60 after bolus, see protocol ACAR-06.
8. If patient requires assistance with ventilations, hyperventilate, to EtCO2 30-35.

Considerations:
1. Cardiac monitor closely even in asymptomatic patients as tricyclic antidepressant overdose patients deteriorate suddenly and quickly.
2. If patient is on a hold or there is potential for intentional OD, consider 4-point restraints.
3. If patient is physically combative consider involving law enforcement to assist in putting patient in 4 point restraints.

Base Hospital Orders

1. Additional sodium bicarbonate beyond 150mEq.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Opiate Overdose

Physical and mental symptoms that occur after taking too many opioids, a substance found in certain prescription pain medications and illegal drugs like heroin.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibility of opiate overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals opiate overdose and patient is showing signs and symptoms related to opiate overdose, including respiratory depression or apnea.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
   E. EtCO2
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Blood glucose level, if diabetic history or continues to have ALOC.
   C. Physical assessment.
   D. Pupils.
3. Name of medication or substance.
4. Estimated number of pills or liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Lethargy. 2. ALOC. 3. Shortness of breath. 4. Pinpoint pupils. 5. Slow or absent respirations. 6. Hypotension.	1. Short-term pain management. 2. Chronic pain management. 3. Heroin use. Home Meds 1. Hydrocodone (Vicodin®). 2. Oxycodone (OxyContin®, Percocet®). 3. Oxymorphone (Opana®). 4. Morphine (Kadian®, Avinza®). 5. Codeine. 6. Fentanyl.	1. Pontine bleed.

Opiate Overdose

1. Monitor SpO2.
2. Monitor EtCO2.

Treatment #1- Asymptomatic:
1. Consider cardiac monitor.
2. If EtCO2 is elevated, evaluate efficacy of respirations.

Treatment #2- Symptomatic with inadequate respiration:
1. Cardiac monitor.
2. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Support ventilations with BVM and O2 15-20 LPM as needed.
4. IV, NS, TKO or saline lock.
5. Naloxone 0.4mg IV/IO or 2mg IM/IN. Repeat for ineffective respirations or RR <10. Max 4mg. Contact base hospital for additional doses
   DO NOT titrate to level of consciousness or pupil size.

Considerations:
1. Ventilate patient prior to administration of naloxone.
2. Preferred route is IV. However, if unable to start IV, IM/IO/IN are acceptable.
3. In patients with chronic opioid use, naloxone can induce **SEVERE** withdrawals including:
   A. Pulmonary edema.
   B. Seizures.
   C. Arrhythmias.
   D. Hypertension.
4. Always use the lowest dose possible to obtain an improvement in respirations.

Base Hospital Orders

1. Additional naloxone 2mg.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Organophosphates Exposure

Organophosphates are a group of chemicals that poison insects and mammals. Organophosphates are the most widely used insecticides today. They are used in agriculture, the home, gardens, and veterinary practice. Organophosphate work by damaging an enzyme acetylcholinesterase.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibility of organophosphates exposure but patient is showing no signs or symptoms.
2. **Symptomatic-** Patient has admitted or history reveals organophosphates exposure and patient is showing signs and symptoms related to organophosphates exposure, but is still hemodynamically stable.
3. **Grossly Symptomatic-** Patient has admitted or history reveals organophosphates exposure and patient is showing signs and symptoms related to organophosphates exposure, but is **NOT** hemodynamically stable.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Blood glucose level.
   C. Pain scale.
   D. Physical assessment.
3. If safe to identify:
   A. Chemical labels.
   B. Safety data sheet (SDS).
   C. Placards.
   D. Chemical type.
   E. Chemical amount.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Salivation. 2. Lacrimation. 3. Urination. 4. Defecation. 5. Gastrointestinal distress. 6. Emesis.	1. Agricultural setting. 2. Industrial setting. Common Names 1. Parathion. 2. Malathion. 3. Methyl parathion. 4. Chlorpyrifos 5. Diazinon. 6. Dichlorvos. 7. Phosmet. 8. Fenitrothion. 9. Tetrachlorvinphos. 10. Azamethiphos. 11. Azinphos-methyl. 12. Terbufos.	1. Nerve agent exposure.

Organophosphates Exposure or Ingestion

1. Avoid contamination.
2. Cardiac monitor.
3. Monitor SpO2.
4. Consider IV, NS, TKO.

Treatment #1- Mildly symptomatic:
1. if SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. IV/IO NS, TKO.
3. If HR <100, atropine 2mg IV/IO every 10 minutes. Max 4mg.

Treatment #2- Grossly symptomatic:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. IV/IO, NS, TKO.
3. Atropine 2mg IV/IO every 5 minutes. Max of 4mg.
4. For seizure activity see protocol ANRO-05.

Considerations
1. Safety is top PRIORITY.
2. Patient must be grossly decontaminated prior to transport.
3. Patient must be fully decontaminated prior to entering ED.

Base Hospital Orders

1. Additional atropine beyond 4 mg.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Nerve Agent Exposure and EMS *Chempack* use

If *EMS Chempack* is deployed and atropine auto injectors, pralidoxime (2-Pam) auto injectors, and diazepam are available they may be used as follows:
1. Cardiac monitor.
2. Monitor SpO2.
3. Consider IV/IO, NS, TKO.
4. If MAP < 60without fluid overload or history of CHF/Dialysis, NS 500ml IVF bolus. May repeat, max 2L.
5. If MAP < 60with fluid overload or history of CHF/Dialysis, NS 250ml IVF bolus. May repeat if no worsening fluid overload, max 1L.
6. If seizing, diazepam 2.5-10mg slow IVP or 10mg IM. May repeat once, max of 20mg.
7. Atropine and 2-pam Auto injectors according to below chart.

Exposure level	Atropine (2mg Auto Injector)	2-Pam (600mg Auto Injector)
Mild Liquid or Vapor – (Dyspnea Rhinorrhea, Wheezing)	One (1) Auto injector IM (2Mg) every 3-5 min.	If symptomatic after atropine: One (1) Auto Injector IM (600Mg) No repeat.
Moderate – (SLUDGE)	Two (2) Auto injector IM (4Mg) every 3-5 min.	One (1) Auto injector IM (600Mg) may repeat once in 5-10 min.
Severe – (SLUDGE and Seizure activity)	Three (3) Auto injector IM (6Mg) every 3-5 min.	Three (3) Auto injector IM (1.8Gms) No repeat.

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Adult General

Sepsis

Sepsis is the body's overwhelming and life-threatening response to infection. In sepsis, when an infection occurs at any potential site in the body, the immune system's inflammatory response can be overwhelmed leading to SIRS (Systemic Inflammatory Response Syndrome) which causes tissue damage that can lead to organ dysfunction, failure and death.

Definitions:

1. **SIRS Criteria-** possible infection (Abnormal WBC), fever, tachypnea, tachycardia or hypotension.
2. **Asymptomatic- DOES NOT** meet TWO or MORE SIRS Criteria.
3. **Symptomatic Sepsis-** Meets TWO or MORE SIRS criteria, **PLUS** has source of infection and is hemodynamically stable.
4. **Septic Shock-** Meets two or more SIRS criteria and is hemodynamically **UNSTABLE**.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Blood glucose level, if diabetic.
   C. Pain scale.
   D. Physical assessment.
   E. Temp.
   F. Lung Sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. SIRS Criteria A. Temp: >38°C or <36°C. B. HR >90. C. RR >20. 2. Significantly decreased urine output. 3. Abrupt change in mental status. 4. Difficulty breathing. 5. Abdominal pain. 6. Identifiable infection.	1. Evidence of infection. 2. Clotting problems. 3. Abnormal liver or kidney function. 4. Impaired oxygen availability. 5. Electrolyte imbalances. 6. Transplant patient. 7. On active chemotherapy. 8. HIV/AIDs. 9. Chronic steroid use. 10. Indwelling Foley catheter. 11. Indwelling PIC line. Home Meds: 1. Antibiotics. 2. Immunosuppressant medications. 3. Immunomodulatory medications.	1. Pneumonia. 2. Abdominal infection. 3. Kidney infection / failure. 4. Bloodstream infection (bacteremia). 5. Meningitis. 6. Encephalitis. 7. Myocarditis.

Sepsis

1. Cardiac monitor.
2. Monitor SpO2.

Treatment #1- Asymptomatic:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Consider 12 lead ECG.
3. Blood glucose level, if <70 mg/dL, see protocol ANRO-03.
4. If ALOC, perform stroke screen. If positive, see protocol ANRO-01.

Treatment #2- Symptomatic meeting **TWO** or **MORE** SIRS Criteria with identifiable infection:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Obtain 12 lead ECG.
3. Blood glucose level, if <70 mg/dL, see protocol ANRO-03.
4. If ALOC, perform stroke screen. If positive, see protocol ANRO-01.
5. IV, NS, TKO.
6. NS 500ml IVF bolus may repeat x1.

Treatment #3- Shock with **TWO** or **MORE** SIRS Criteria:
1. If SpO2 <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Monitor EtCO2 if using an advanced airway or BVM.
3. Obtain 12 lead ECG.
4. Blood glucose level, if <70 mg/dL, see protocol ANRO-03.
5. If ALOC, stroke screen. If positive, see protocol ANRO-01.
6. IV/IO, NS, TKO.
7. If MAP < 60 without fluid overload or history of CHF/Dialysis, NS 500ml IVF bolus. May repeat, max 2L.
8. If MAP <60 with fluid overload or history of CHF/Dialysis, NS 250ml IVF bolus. May repeat if no worsening fluid overload, max 1L.
9. Epinephrine 10mcg **1:100,000** IV/IO, every 2 minutes, titrate to MAP > 60.

Considerations:
1. If patient is in shock and does not meet TWO or more SIRS Criteria see protocol ACAR-06.
2. **SIRS Criteria:**
   A. Temp: >100.4°F or <96°F.
   B. HR >90.
   C. RR >20.
3. Always have a high index of suspicion of infection in patients on chronic steroids, immunomodulatory medications and immunosuppression medications.

To make epinephrine **1:100,000**:
1. Mix 9ml NS with 1ml epinephrine **1:10,000**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Patients From Out Patient Offices

This protocol is in place to allow paramedics on a 911 / pre hospital call (Not to include IFT) to transport patients that may be currently under anesthesia or having an adverse reaction to out of hospital anesthesia, such as at dental offices or outpatient care facilities.

Definitions:

1. **Local anesthesia**- a type of pain prevention used during minor procedures to numb a small site where the pain is likely to occur without changing the patient's awareness.
2. **General anesthesia**- a medically induced coma with loss of protective reflexes, resulting from the administration of one or more general anesthetic agents.
3. **Nerve and regional blocks**- deliberate interruption of signals traveling along a nerve, often for the purpose of pain relief.
4. **Conscious sedation-** is a combination of medicines to help you relax (a sedative) and to block pain (an anesthetic) during a medical or dental procedure.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.
   G. EtCO2.
3. Type of anesthetic used.
4. Procedure being performed:
   A. Surgical.
   B. Medical.
   C. Dental.
5. Reaction to anesthetic.
6. Treatments administered prior to arrival:
   A. Defibrillations.
   B. Airway management.
   C. Medication administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. ALOC. 2. Unconscious. 3. Apneic. 4. Uncontrolled airway. 5. History of: A. Procedural sedation. B. Local anesthesia. C. General anesthesia. D. Conscious sedation.	1. Outpatient procedure. 2. Dental procedure. Possible Anesthetic drugs: 1. Nitrous oxide. 2. Ativan. 3. Barbiturates: A. Amobarbital. B. Methohexital. C. Thiamylal. 4. Benzodiazepines: A. Diazepam. B. Lorazepam. C. Midazolam. 5. Etomidate. 6. Ketamine. 7. Propofol.	1. CVA/TIA. 2. Hypoglycemia. 3. Seizure.

Patients From Out Patient Offices

Treatment

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC, NRB or BVM, titrate to 94%.
3. Monitor EtCO2 if patient received any sedation or analgesic medications or if using an advanced airway or BVM.
4. Consider IV/IO, NS, TKO.
5. Consider 12 lead, if STEMI see protocol ACAR-03.
6. Blood glucose level, if <70 mg/dL, see protocol ANRO-03.
7. If patient administered narcotics and RR <10, naloxone 0.4mg IV/IO or 2mg IM/IN, Max 4mg.

Titrate to respirations. **DO NOT** titrate to level of consciousness or pupil size.

8. If MAP < 60 without fluid overload or history of CHF/Dialysis, NS 500ml IVF bolus. May repeat, max 2L.
9. If MAP < 60 with fluid overload or history of CHF/Dialysis, NS 250ml IVF bolus. May repeat if no worsening fluid overload, max 1L
10. Epinephrine 10 mcg **1:100,000** IV/IO, every 2 minutes, titrate to MAP > 60.

Considerations:

1. Secure airway as appropriate.
2. Advise doctor on scene they may maintain care if they ride with you to ED and they do not delay transport.
3. Only the base hospital physician can give field personnel orders.
4. Contact the base hospital for any questions or concerns.

To make epinephrine **1:100,000**:

1. Mix 9ml NS with 1ml epinephrine **1:10,000.**

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pain Management

This protocol is intended for the treatment of pain associated with traumatic injuries, burns, or medical conditions that cause significant **ACUTE** pain or **SEVERE Exacerbation** of chronic pain.

Definitions:

1. **Pain-** is a significantly unpleasant sensation, occurring in varying degrees of severity, which results because of injury, disease, or emotional disorder.
2. **Max Single Dose (Max SD)-** is maximum medication given in one administration.
3. **Max Total Dose (Max TD)-** is the most the patient can have overall without a base order.
4. **Mild to moderate pain-** Pain on movement, chronic pain, or pain that is managed with, positioning, ice, stabilization, or immobilization.
5. **Moderate to Severe Pain-** patient pain is unable to be managed with, positioning, ice, stabilization, or immobilization **AND** patient is showing outward signs of being symptomatic secondary to pain. Symptoms may include guarding, grimacing at rest, tachycardia, tachypnea, hypertension, and diaphoresis, etc.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   A. Pulse.
   B. SpO2.
2. If performed, before and after intervention or if condition changes:
   C. ECG.
   D. Blood glucose.
   E. Pain scale.
   F. Physical assessment.
   G. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Guarding. 2. Grimacing. 3. Deformity. 4. Swelling. 5. Diaphoresis. 6. Splinting.	1. Recent traumatic event. 2. Chronic pain.	1. Chronic pain exacerbation. 2. Complex Regional pain. 3. Compartment syndrome. 4. Nerve injury.

Pain management medication guidelines:

Medication	Best use	Contraindications
Ketorolac	Mild to moderate pain	>65Y/O, GI bleed, pregnancy, asthma, Acute coronary syndrome, coagulation disorders, meets trauma triage criteria, anticoagulation medications.
Acetaminophen		Allergy, Liver failure, ETOH Intoxication.
Ibuprofen		Currently taking ASA, or NSAID, GI bleed, Blood thinner, Pregnant.
Morphine	Visceral pain	Hypotension.
Fentanyl	Somatic pain, or patients with hypotension	GI obstruction.

Pain Management

Treatment #1- Mild to Moderate:
1. Elevate as appropriate.
2. Ice as appropriate.
3. Position as appropriate.
4. Stabilize as appropriate.
5. 650mg acetaminophen PO **OR** 400mg ibuprofen PO (withhold if pregnant).

Treatment #2- Moderate to Severe:
1. Consider Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. IV/IO, NS, TKO.
4. If pain scale >5 & symptomatic from pain see dose chart below.
5. Monitor EtCO2.

Considerations:
1. Treatment should not be based on pain scale alone. Use objective signs to support treatment.
2. If SBP<100 consider fentanyl for pain management.
3. IM fentanyl shall only be used for patients with difficult IV access (IN may be considered if patient refuses IM injection).
4. An IO should not be established solely for the purpose of pain management. An IO may be utilized for pain management where indicated, **ONLY** if IO was established for other treatments.

Medication	Max SD	Max TD
Acetaminophen IV		
A. 15mg/kg IV over 15 min, no repeat	15mg/kg	1,000mg
Ketorolac		
A. 15mg IV No repeat **Or** B. 30 mg IM no repeat	15Mg	No repeat
Morphine		
A. 2mg slow IV/IO, every 5 min, **Or** B. 5-10 mg IM, every 30 min.	2 mg IV 10 mg IM	20 mg
Fentanyl		
A. 1 mcg/kg slow, IV/IM/IN/IO, every 5 minutes.	100 mcg	2 mcg/kg, For burns max TD is 3mcg/kg

Base Hospital Orders

1. Medication dose above listed maximums
2. In the presence of any finding listed below
   - A. Allergy or sensitivity to the medication being administered.
   - B. SBP <90.
   - C. RR <12.
   - D. History of loss of consciousness.
   - E. Decreased mental status from patient baseline.
   - F. Pregnancy greater than 20 weeks.
3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Nausea

Nausea may be due to a viral illness (e.g. gastroenteritis), motion sickness, or medication side effects. However, it is important to remember that serious medical conditions also produce nausea or vomiting such as stroke, head injuries, toxic ingestions, bowel obstruction, appendicitis, and acute coronary syndrome. Generally, benign causes of nausea or vomiting do not have any associated pain complaints, or alterations in level of consciousness (LOC).

Definitions:

1. **Contraindications-** Known sensitivity to ondansetron or other 5-HT-3 antagonists e.g.: Granisetron (Kytril), Dolasetron (Anzamet), Palonosetron (Aloxi).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose if history of diabetes.
   D. Pain scale.
   E. Physical assessment.
   F. Abdominal exam.

Objective Findings:

Possible Signs and Symptoms	Comorbidities	Differentials
1. Nausea. 2. Vomiting. 3. Abdominal pain. 4. Diarrhea.	1. Gastritis. 2. Gastroenteritis.	1. AMI. 2. Appendicitis. 3. Gall stones. 4. Kidney stones. 5. Bowel obstruction.

Nausea

Treatment #1- Persistent Mild Nausea:
1. Ondansetron 4mg Oral Disintegrating Tablet (ODT).
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.

Treatment #2- Persistent Moderate to Severe Nausea:
1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Consider 12 lead ECG if concerns for cardiac related complaint.
4. IV, NS, TKO.
5. Ondansetron 4mg IVP over 1 min. May repeat once in 15 minutes **OR** ondansetron 4mg ODT, no repeat.

Ondansetron 4mg, may be given via IO, **IF** IO is established for other treatments. An IO should not be established solely for the purpose of nausea treatment.

Considerations
1. For patients greater than 55 years of age, perform 12-lead ECG.
2. Rapid administration of ondansetron has been associated with syncope.
3. Rare side effects include headache, dizziness, tachycardia, sedation, or hypotension.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Agitation/Behavioral Emergency (AGEN-05)

Agitation or behavioral emergency is an acute, often severe disturbance in mood, thought, or behavior that poses an immediate risk of harm to the patient, others, or the environment, and requires urgent assessment and intervention.

Definitions:

1. Mild/moderate agitation: distressed or agitated but cooperative, able to engage, and willing to take oral medication.
2. Severe agitation: behavior creating an immediate or credible risk of physical harm to the patient, responders, or others.
3. Physical restraint is not required before medication when attempting restraint alone would create unnecessary risk.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   D. BP.
   E. Respirations.
   F. Pulse.
2. If performed, before and after intervention or if condition changes:
   G. ECG.
   H. SpO2.
   I. Blood glucose if history of diabetes.
   J. Pain scale.
   K. Physical assessment.
   L. Abdominal exam.

Objective Findings:

Possible Signs and Symptoms	Comorbidities	Differentials

1. **Restlessness and motor agitation**: pacing, fidgeting, wringing hands, clenching fists, purposeless movements 2. **Emotional signs**: irritability, hostility, inner tension, difficulty focusing . 3. **Verbal behaviors**: excessive or pressured speech, rapid talking, difficulty following conversation 4. **Aggression**: verbal threats, physical assault, destruction of property, or violence toward others 5. **Self-harm risk**: self-injurious actions, suicidal gestures or statements 6. **Altered mental status**: confusion, disorientation, hallucinations, delusions, or psychotic features	1. Cardiovascular disease, 2. Diabetes, 3. psychiatric illness 4. Withdrawal 5. Alzheimer's / Dementia	1. Alcohol intoxication 2. Epilepsy, Postictal 3. Hypoglycemia / Hyperglycemia 4. Overdose / Underdose 5. Uremia 6. Trauma 7. Infection 8. Psychosis 9. Shock
Agitation/Behavioral Emergency		

Treatment #1 - Mild to Moderate Agitation

1. IF age is between 18 and 64 - Olanzapine ODT 5 mg PO.
2. May repeat 5 mg once after 20 minutes if agitation persists without adverse effects.
3. Obtain 12 Lead ECG if known long-QT, ventricular dysrhythmia, concerning syncope, QT-prolonging overdose, significant electrolyte-loss state, or evidence of dysrhythmia.

Contraindications for Olanzapine:

1. Violent behavior requiring immediate control.
2. Patient unwilling or unable to take oral medication.
3. Altered level of consciousness or suspected delirium.
4. Suspected medical, traumatic, or toxicologic cause.
5. Suspected alcohol, opioid, sedative-hypnotic, or other CNS-depressant intoxication.
6. Hypotension/shock or olanzapine hypersensitivity.

Considerations:

1. Goal is sufficient improvement for safe interaction and transport, not elimination of all psychiatric symptoms.
2. Olanzapine Medication should be offered **voluntarily**; it is not to be administered forcibly.

Treatment #2 - Severe Agitation

1. IF age is between 18 and 64, midazolam 2.5 mg IM, or IV/IO 2.5 mg SLOW push.
    a. If received olanzapine no repeat dose.
    b. If pt. did not receive olanzapine, may repeat in 10 min to a max total dose of 5 mg.
2. IF patient is >64 or is clinically frail, midazolam 2.5 mg IM, or 1 mg IV/IO.
    a. If pt did not receive olanzapine max total dose of 2.5 mg.

Considerations:

1. Do not administer midazolam IF respiratory depression, hypotension, or excessive sedation occur.
2. No mandatory waiting interval when an immediate safety threat develops.
3. Do not establish vascular access solely to administer midazolam when IM is safer and faster.
4. IN may be retained only as a secondary option when it can be administered safely and reliably.
5. Anticipate CNS/respiratory depression and hypotension.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. Additional midazolam
3. Olanzapine for patients >64, Max dose 2.5 mg
4. Midazolam for post olanzapine Max 2.5 mg
5. Olanzapine after midazolam Max dose 2.5mg

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Pediatric Airway Management

Pediatric Advanced Airway Management

Definitions:

1. **Pediatric Patient**- twelve (12) years of age or younger and is not taller than a weight-based assessment tape (146.5 cm.).

Documentation Standards:

Supraglottic Airway Confirmation:

1. Capnography value and waveform.
2. Bilateral lung sounds.
3. Minimal epigastric sounds.
4. Positive chest rise.

Every 5 minutes and on Gross Patient Movement:

5. Capnography value and waveform.
6. Bilateral lung sounds.
7. Minimal epigastric sounds.
8. Positive chest rise.

At Transfer of Care:

6. Capnography value and waveform.
7. Bilateral lung sounds.
8. Minimal epigastric sounds.
9. Positive chest rise.
10. Name of receiving paramedic or ED physician.

Pediatric Advanced Airway Management

Indications for Supraglottic Airway:

1. Inability of the patient to protect their airway (coma, decreased level of consciousness with non-intact gag reflex).
2. Inability to adequately ventilate or oxygenate the patient using an OPA and BVM device.
3. Cardiac arrest. Adhere to sequence as specified in EMS Protocol PCAR-03.
4. Failing respirations (irregular and shallow), respiratory arrest.

If patient meets any of above criteria, place supraglottic airway.

Oral Tracheal intubation is outside the paramedic scope of practice in **PEDIATRIC PATIENTS** - twelve (12) years of age or younger and is not taller than a weight-based assessment tape (146.5 cm.).

5. Remove and replace the I-Gel Airway if resistance is met upon initial insertion.
6. After two (2) unsuccessful attempts, place a BLS an airway and transport red lights and sirens to the closest receiving hospital.

Only use pediatric supraglottic airway if unable to maintain airway with BVM and OPA

Considerations:

1. The approved airway management procedure for the unconscious pediatric patient consists of the following: providing BLS airway management skills; correctly assessing the need for an advanced airway; and successfully inserting or an I-Gel Airway **ONLY IF** there is no compliance with BVM and OPA.
2. **DO NOT** delay transport to establish an advanced airway in trauma patients except in the case of complete airway obstruction, as evidenced by a complete inability to ventilate the patient using an OPA and BVM device.
3. If unable to establish an airway due to complete airway obstruction not relieved using an OPA and BVM maneuvers, begin red lights and siren (RLS) transport to closest receiving hospital. During transport, consider insertion of an I-Gel Airway.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Airway Obstruction

Definitions:

1. **Partial Airway Obstruction-** Difficulty breathing but still able to ventilate.
2. **Severe Airway Obstruction-** Poor air exchange increased breathing difficulty, silent cough, cyanosis, and/or inability to speak or breathe.
3. **Weight based assessment tape Pediatric Emergency Tape-** Means a pediatric length based resuscitation tape used to determine drug doses, fluid volumes, defibrillation settings, and equipment sizes. The tape is designed to estimate a child's weight based on length (head to heel). The tape also includes information about abnormal vital signs.
4. **Pediatric Patient-** Means a patient that is twelve (12) years of age or younger and is not taller than a weight-based assessment tape (146.5 cm.).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 10 minutes for stable patients:
   A. BP.
   B. Respirations.
   A. Pulse.
   B. SpO2.
2. If performed, before and after intervention or if condition changes:
   C. ECG.
   D. Blood glucose.
   E. Pain scale.
   F. Physical assessment.
   G. Lung sounds.

Objective Findings

Signs & Symptoms	Comorbidities	Differentials
1. Holding neck (universal choke sign). 2. Silent cough. 3. Stridor. 4. Inability to speak. 5. Drooling.	1. Nothing by mouth (NPO orders). 2. CVA. 3. Brain injury. 4. Choking episode. 5. Coughing while eating.	1. Epiglottitis. 2. Esophageal obstruction. 3. Supraglottic stenosis. 4. Vocal cord dysfunction. 5. Retropharyngeal abscess.

Pediatric Airway Obstruction

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM, NC or NRB, titrate to 94%.

Treatment- Partial Obstruction:
1. Encourage patient to cough.
2. Suction as needed.

Treatment- Complete Obstruction:
1. Initiate back blows and chest thrusts.
2. If conscious and foreign body can be seen when patient opens mouth, remove foreign body with Magill forceps.
3. If unconscious, remove foreign body with direct laryngoscopy and Magill forceps.
4. Assist ventilations with BVM.
5. If unable to remove, attempt to insert supraglottic airway. Go to closest ED with early notification to receiving facility.

Considerations
1. Needle Cricothyrotomy is contraindicated in pediatrics.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Pediatric Cardiac

Neonatal Resuscitation

The goal of neonatal resuscitation is to preserve cerebral and coronary function through meticulous attention to procedure and achieving return of spontaneous circulation (ROSC).

Definitions:

1. High quality CPR - use TEAM approach:
   A. 100-120 compressions per minute.
   B. **3:1** ratio compression to ventilation ratio.
   C. Compress 1/3 depth of chest.
   D. Allow complete recoil.
   E. Minimize interruptions.
   F. Rotate compressors every 2 minutes.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   A. Pulse.
   B. ECG.
   C. SpO2.
2. If performed, before and after intervention or if condition changes:
   D. Blood glucose.
   E. Physical assessment.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. No pulse. 2. Weak pulse. 3. No muscle tone. 4. No cry. 5. Meconium staining.	1. Expected complications. 2. Prolonged delivery. 3. Delivery complications. 4. Mother with significant medical history.	1. Still born. 2. Meconium aspiration. 3. Fetal Hypoxia.

Neonatal Resuscitation

1. Cardiac monitor.
2. Monitor SpO2.
3. Wipe and dry nose and mouth.

Treatment #1- Heart Rate **>100** :
1. Monitor SpO2.
2. If peripheral cyanosis is present place in sniffing position O2 5-10 LPM via blow by.
3. Reassess heart rate every 30-60 seconds.

Treatment #2- Heart Rate **80-100 BPM:**
1. Oxygen 100% via mask or blow by.
2. Stimulate and suction mouth and nose.

If heart rate is <100 BPM, after 30 Seconds of stimulation:
3. Assist ventilations with BVM and 100% oxygen at 40-60 per min.
4. Reassess heart rate and respirations every 15-30 seconds.

Treatment #3- Heart Rate **60-80 BPM:**
1. Assist ventilations with BVM and 100% oxygen at 40-60 per min.

If no improvement after 30 seconds of assisted ventilations:
2. Start CPR, **3:1**, @120 compressions/min.

Treatment #4- Heart Rate **<60 BPM:**
1. Assist ventilations with BVM and 100% oxygen at 40-60 per min.
2. Start CPR, **3:1**, @120 compressions/min.

If no improvement after 60 seconds:
3. IV/IO, NS, TKO.
4. Epinephrine 0.01mg/kg IV/IO, every 6 minutes.

If no improvement after 60 seconds:
5. Consider supraglottic airway only if unable to ventilate with BVM.
6. If heart rate is >80 BPM, stop chest compressions and continue assisting ventilations.

Considerations
1. Note APGAR Scores at: 1, 3, and 5 minutes.
2. Meconium stain amniotic fluid: suction the mouth and nose of only those patients with a non-vigorous cry or inability to protect their own airway. If the patient has a strong cry wipe and dry the mouth and nose. There is no need to aggressively suction.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

APGAR Score	0	1	2
Appearance	Cyanotic/ Pale	Peripheral cyanosis only	Pink
Heart Rate	0	<100	100-140
Grimace	No response to stimulation	Grimace or weak cry	Strong cry
Activity	Absent	Flexed arms or legs	Active
Respirations	Absent	Slow or irregular	Loud cry

Pediatric Bradycardia

Bradycardia is characterized by a decrease in the rate of atrial depolarization due to slowing of the sinus node. It may be secondary to sinus node disease, increased parasympathetic tone **or** drug effects (e.g., digitalis, propranolol or verapamil.) The rhythm is regular **or** slightly irregular with the heart rate is below length based treatment tape low value.

Definitions:

1. **Asymptomatic**- Patient has no complaints related to heart rate.
2. **Mildly symptomatic**- Patient is symptomatic but hemodynamically stable.
3. **Grossly symptomatic**- Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, chest pain or hypotension related to a slow heart rate).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. 12 lead.
   C. SpO2.
   D. Blood glucose.
   E. Pain scale.
   F. Physical assessment.
   G. Skin signs.
   H. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Near fainting or fainting (syncope). 2. Dizziness or lightheadedness. 3. Fatigue. 4. Shortness of breath. 5. Chest pains. 6. Confusion or memory problems. 7. Easily tiring during physical activity.	1. Damage to heart tissues from heart disease **or** heart attack. 2. Heart disorder present at birth (congenital heart defect). 3. Infection of heart tissue (myocarditis). 4. A complication of heart surgery. 5. Imbalance of chemicals in the blood, such as potassium or calcium. 6. Medications, including some drugs for other heart rhythm disorders, high blood pressure and psychosis. Home Meds: 1. Beta blockers.	1. High degree heart block. 2. Decompensated shock. 3. Increased vagal tone. 4. Accidental OD. 5. Lyme disease. 6. Intracranial hemorrhage. 7. Increased ICP.

Pediatric Bradycardia

1. Cardiac monitor.
2. Monitor SpO2.

Treatment #1- Asymptomatic:
1. Consider 12 lead ECG.

DO NOT start IV/IO solely for low HR if patient is asymptomatic.

Treatment #2- Mildly Symptomatic:
1. If SpO2 <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Obtain 12 lead ECG.
3. IV, NS, TKO.
4. If SBP is below length based treatment tape low value, NS 20 ml/kg IVF bolus. Bolus may repeat twice at 20ml/kg.

Treatment #3- Grossly Symptomatic:
1. If SpO2 <94%, 1-15 LPM O2 via NC or NRB, titrate to 94%.
2. Obtain 12 lead ECG.
3. IV/IO, NS, TKO.
4. If SBP is below length based treatment tape low value, NS 20ml/kg IVF bolus. Bolus may repeat twice at 20ml/kg.
5. If history or assessment reveals bradycardia is due to increased vagal tone, atropine 0.02 mg/kg IV/IO, max single dose of 1 mg. Repeat once if needed.
6. ~~If SBP remains below length based treatment tape low value after fluids, **DILUTED** epinephrine 1ml IV/IO, every 3-5 minutes, titrate to normal age-based SBP.~~
7. ~~6.~~ ~~I~~If HR remains <60 BPM after treatment or patient is deteriorating quickly:
8. ~~7.~~ Start CPR

Considerations:
1. Used approved length based treatment tape to determine heart rate.

~~To make **DILUTED** epinephrine:~~
1. ~~Mix epinephrine 0.01 mg/kg **1:10,000** to a total volume of 10ml with NS.~~

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. ~~1.~~ If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.

Pediatric Medical Cardiac Arrest

The goal of cardiac resuscitation is to preserve cerebral and coronary function through meticulous attention to procedure and achieving return of spontaneous circulation (ROSC).

Definitions:

1. **Ventricular Fibrillation (VF)-** Bizarre, rapid, irregular, ineffective rhythm with electrical waveforms varying in size and shape. There is no P wave. QRS complexes are absent.
2. **Pulseless Ventricular Tachycardia (pVT)-** Regular or slightly irregular rhythm. Heart rate 100 to 200, A-V disassociation, QRS complex distorted, wide (> 0.12 seconds) and bizarre. No pulse.
3. **Asystole-** Asystole represents the absence of electrical activity in the heart. There is no rhythm, although an occasional P wave may be seen. Heart rate is less than five ectopic beats per minute.
4. **Pulseless Electrical Activity (PEA)-** The absence of a detectable pulse and the presence of some type of electrical activity other than VF or pVT.
5. **Contraindications for this protocol.**
   A. Traumatic arrest see protocol PTRA-02.
   B. VAD see protocol PCAR-07.

Documentation Standards:

1. Every 5 minutes:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Capnography.
   D. Blood glucose.
   E. Physical assessment.
   F. Pupils.
   G. Lung sounds.
3. Circumstances surrounding the arrest:
   A. Estimated down time.
   B. Onset (witnessed or unwitnessed).
   C. Preceding symptoms.
   D. Bystander CPR.
   E. Medications.
   F. Environmental factors (hypothermia, inhalation, and asphyxiation).

Objective Findings:

Possible Signs and Symptoms	Possible Medical History	Differentials
1. Quickly assess for obvious signs of death: A. Decapitation. B. Decomposition. C. Burnt beyond recognition. D. Lividity. E. Rigor mortis. 2. No pulse. 3. No respiration.	1. Congenital heart defects. 2. Asthma. 3. Food or insect allergies.	1. Respiratory arrest leading cardiac arrest. 2. Drowning. 3. Hypothermia.

Pediatric Medical Cardiac Arrest

Treatments

1. Begin High Quality CPR:
   A. Compressions rate 100 to 120 per minute.
   B. Compress 1/3 depth of chest.
   C. Allow complete recoil.
   D. Minimize interruptions.
2. OPA & BVM with O2,10-15LPM, 15:2 compressions to ventilations.
3. IO
4. NS 20 ml/kg IVF bolus. May repeat x2
5. Initiate epinephrine 0.01 mg/kg 1:10,000 IO as soon as possible and repeat every 6 minutes.
6. Pulse and rhythm check every 2 minutes.
   A. Pre-charge defibrillator before every pulse check.
7. If ROSC achieved, initiate transport, see protocol PCAR-05.

Treatment #1- VF/VT:

1. Initial shock 2 Joules/kg, **ALL** subsequent shocks 4 J/kg. (or manufacturer's recommendation)
2. After 3 shocks, lidocaine 1mg/kg IO. Repeat once if after 5 minutes patient remains in VF/VT.
3. Consider reversible causes.
4. Transport after 15 minutes.

Treatment #2- Asystole/PEA:

1. Continue compressions.
2. Consider reversible causes.
3. Transport after 15 minutes.

Considerations:

1. **EARLY EPINEPHRINE.**
2. Administer medications beginning of compression cycle.
3. Use i-Gel only if unable to maintain airway with OPA/BVM or if patient has a history of drowning or respiratory arrest prior to cardiac arrest.

REVERSIBLE CAUSES

1. **Hypovolemia-** NS 20 ml/kg IVF bolus IO, max 1L.
2. **Hypoxia-** Maintain ventilations every 3-5 seconds at a ratio of 15:2 compressions to ventilations.
3. **Hydrogen Ion-** sodium bicarbonate 1mEq/kg IO.
4. **Hypoglycemia-** dextrose 10% 5ml/kg or dextrose 50% 1ml/kg.
5. **Hypocalcemia-** calcium chloride 20mg/kg IO.
6. **Hyperkalemia-** sodium bicarbonate 1mEq/kg.
7. **Hypothermia-** Active rewarming with warm IO fluids, start IV if possible, hot packs to neck and groin.
8. **Tension Pneumothorax-** Needle decompression.
9. **Tamponade, Cardiac-** NS 20ml/kg IVF bolus IO, max 1L.
10. **Toxins-** See protocol PODP-01 to 07.
11. **Torsade's de pointes-** magnesium sulfate 25mg/kg IO, max 2g.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Non Traumatic Shock

Shock is a syndrome, which is characterized by inadequate tissue perfusion. Shock can have a variety of underlying causes, including hypovolemia, sepsis, cardiogenic, and anaphylaxis.

Definitions:

1. **Asymptomatic-** Patient has no complaints.
2. **Mildly Symptomatic-** Patient has tachycardia, delayed capillary refill and may have low blood pressure with normal level of consciousness.
3. **Grossly Symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, mottled skin or hypotension delayed capillary refill).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Compensated shock: Initial often missed stage of shock characterized by normal to slightly decreased BP and tachycardia. 2. Decompensated shock: hypotension and tachycardia. 3. Irreversible shock: hypotension and bradycardia.	1. GI bleeding. 2. Vomiting. 3. Diarrhea. 4. Allergic reaction. 5. Septicemia. 6. Anti-hypertensive O.D.	1. Myocardial infarction. 2. Septic shock. 3. DKA. 4. Dehydration. 5. Myocarditis. 6. Cardiomyopathy.

Pediatric Non Traumatic Shock

Treatment #1- Mildly Symptomatic:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-6 LPM, NC, titrate to 94%.
3. IV, NS, TKO.
4. If BP is below length based treatment tape low value, NS 20ml/kg IVF bolus. May repeat bolus twice.

Treatment #3- Grossly Symptomatic:
1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 Lead.
4. IV/IO, NS, TKO.
5. If SBP is below length based treatment tape low value, NS 20ml/kg IVF bolus. May repeat bolus twice
6. ~~If SBP remains below length based treatment tape low value, **DILUTED** epinephrine 1ml IV/IO, every 3-5 minutes, titrate to normal age-based SBP.~~

Considerations:
1. Patients that appear to be mildly symptomatic can be in the compensatory stage of shock.
2. Delayed capillary refill is one of the earliest signs of shock. Fluids should be administered for delayed capillary refill.
3. Strongly consider checking blood glucose level in these patients. If they are hyperglycemic, only initial bolus should be given to avoid cerebral edema

~~To make **DILUTED** epinephrine:~~
~~Mix epinephrine 0.01mg/kg **1:10,000** to a total volume of 10ml with NS.~~

Base Hospital Orders

1. Additional NS 10ml/kg IVF bolus.
2. ~~1.~~ If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.
3. ~~**DILUTED** epinephrine 1ml IV/IO, every 2 minutes,~~
4. ~~-~~Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Return of Spontaneous Circulation

The presence of a palpable pulse **AND/OR** BP for at least 30 seconds after cardiac arrest.

Definitions:

1. **Medical Cardiac Arrest-** Cardiac arrest with no trauma.
2. **Traumatic Arrest-** Cardiac arrest secondary to blunt or penetrating trauma.
3. **STEMI Receiving Facility-** Facility approved by SJCEMSA to receive patients with ST elevation myocardial infarctions.

Documentation Standards:

1. Every THREE 3 minutes:
   A. BP.
   B. Respirations.
   A. Pulse.
   B. SpO2.
   C. ECG.
2. If performed, before and after intervention or if condition changes:
   D. 12 Lead.
   E. Blood glucose.
   F. Pain scale.
   G. Physical assessment.
   H. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Breathing. 2. Coughing. 3. Movement. 4. Palpable pulse. 5. Measurable BP.	1. Congenital heart defects. 2. Metabolic disorder.	1. Sepsis. 2. Hypoxia. 3. Drowning. 4. Arrhythmia. 5. Hyperkalemia.

Pediatric Return of Spontaneous Circulation

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-20 LPM NC, NRB, or BVM, titrate to 94%.
3. Monitor EtCO2 if using a supraglottic airway or BVM.
4. 12 Lead ECG
5. IV/IO, NS, TKO.

Treatment #1- Arrest Rhythm VF/VT and SBP below length based treatment tape low value:
1. Lidocaine 1 mg/kg IV/IO if not already given during arrest.
2. NS 20 ml/kg IVF bolus. Do not repeat.
3. ~~If SBP is below length based treatment tape low value after bolus, **DILUTED** epinephrine 1ml of IV/IO every 2 minutes. Titrate to length based treatment tape SBP low value.~~
4. ~~3.~~ If V-Tach persists lidocaine 0.1 mg/kg IV/IO. Make base hospital contact for additional doses, max total dose of 1 mg/kg.

Treatment #2- Arrest Rhythm Asystole/PEA and SBP below length based treatment tape low value:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-20 LPM, NC, NRB, or BVM, titrate to 94%.
3. Monitor EtCO2 if using supraglottic airway or BVM.
4. 12 Lead.
5. IV/IO, NS, TKO.
6. NS 20 ml/kg IVF bolus.
7. If low HR, see Bradycardia protocol PCAR-02.

~~If SBP is below length based treatment tape low value after bolus~~
8. ~~**DILUTED** epinephrine 1ml IV/IO, every 2 minutes, titrate to length based treatment tape low value.~~

Considerations:
1. All movements should be done delicately.

~~To make **DILUTED** epinephrine:~~
~~1. Mix epinephrine 0.01mg/kg **1:10,000** to a total volume of 10ml with NS.~~

Base Hospital Orders

1. If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.
2. ~~1.~~ Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Supraventricular Tachycardia

Supraventricular tachycardia (SVT), also called paroxysmal supraventricular tachycardia, is defined as an abnormally fast heartbeat.

Definitions:

1. **Asymptomatic-** Patient has no complaints related to heart rate.
2. **Mildly symptomatic-** Patient is symptomatic but hemodynamically stable.
3. **Grossly Symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, chest pain or hypotension related to a SVT).
4. **All Joules-** are in biphasic, use of equivalent monophasic dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. 12 lead.
   C. SpO2.
   D. Blood glucose.
   E. Pain scale.
   F. Physical assessment.
   G. Skin signs.
   H. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. A fluttering in chest. 2. Rapid heartbeat (palpitations). 3. Shortness of breath. 4. Lightheadedness or dizziness. 5. Sweating. 6. A pounding sensation in the neck. 7. Fainting (syncope) or near fainting.	1. Congenital heart defect. 2. Hemodialysis. Home Meds: 1. Beta blockers. 2. Calcium channel blockers. 3. Amiodarone. 4. Sotalol.	1. Atrial fibrillation. 2. Atrial flutter. 3. Dehydration. 4. Sepsis. 5. Drug use.

Pediatric Supraventricular Tachycardia

1. Cardiac monitor.
2. Monitor SpO2, if < 94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 lead ECG.

Treatment #1- Asymptomatic:

1. **DO NOT** start IV solely for high HR if patient is asymptomatic.

Treatment #2- Mildly Symptomatic:

1. IV (AC or Higher), NS, TKO.
2. Perform Valsalva's Maneuver.
3. If SBP is below length based treatment tape low value, NS 20 ml/kg rapid IVF bolus.
4. If no response after 2 minutes, adenosine 0.1 mg/kg rapid IVP followed with 10ml NS IV. Max of 6mg. May repeat adenosine 0.2 mg/kg rapid IVP, followed with 10ml NS IV. Max of 12mg.

Treatment #3- Grossly Symptomatic:

1. IV (AC or Higher), NS, TKO.
2. If SBP is below length based treatment tape low value NS 20 ml/kg rapid IVF bolus.
3. If no response after 2 minutes, adenosine 0.2 mg/kg rapid IVP, followed with 10ml NS IV.
4. If no response after 2 minutes to adenosine, synchronized cardioversion 1 J/kg. May repeat at 2 J/kg.
5. Just prior to synchronized cardioversion, give midazolam 0.1 mg/kg IV/IM. Max **TOTAL** dose of 2mg,

OR

6. Midazolam 0.2 mg/kg IN (Half in each nostril). Max **TOTAL** dose of 2mg.

Considerations:

1. Consider pediatric normal values for heart rate. Infants may have heart rates as high as 220/minute and children may have heart rates as high as 180/minute in the presence of fever, anxiety, and/or pain.
2. Used approved length based treatment tape to determine heart rate.

Base Hospital Orders

1. Additional synchronized cardioversions.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Ventricular Assist Device (VAD) Failure

The following are key points to remember from this American Heart Association Scientific Statement about cardiopulmonary resuscitation (CPR) in adults and children with mechanical circulatory support (MCS).

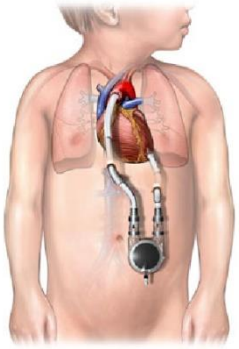
Definitions:

1. **LVAD-** Left Ventricular Assist Device.
2. **RVAD-** Right Ventricular Assist Device.
3. **BiVAD-** Biventricular Assist Device.
4. **Pulsatile-** Will have pulsing or rhythmic sound and possible radial pulse, EtCO2 will read accurately.
5. **Continuous flow-** Most common, located in patient's thorax, will have no peripheral pulses. Utilize monitor generated MAP to assess perfusion EtCO2 will read accurately.
6. **HeartMate II-** The most commonly implanted device.
7. **HeartWare-** Older version but still common.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP and MAP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. EtCO2 if using and supraglottic airway or BVM.
   D. Blood glucose level.
   E. Pain scale.
   F. Physical assessment.
   G. Lung sounds.
   H. Capillary refill







Pediatric Ventricular Assist Device (VAD) Failure

Treatment:

1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Monitor MAP.
4. Assess capillary refill.
5. Monitor EtCO2 if using and advanced airway or BVM.
6. 12 lead.
7. Blood glucose level, If >70 mg/dL, see protocol PNRO-02.
8. Assess the device to see if it is working:
   A. Gather Information regarding the type of device, the implantation hospital, and/or the VAD Coordinator contact telephone number.
   B. Telephone number may be available by a tag on the device, on the refrigerator, or on a medical alert bracelet.
   C. If a caregiver is present, utilize his/her knowledge. Listen to their directions regarding VAD device management until you are able to contact the VAD Coordinator. The VAD Coordinator can help you decide the best course of action regarding assessment of the equipment. **NOTE: Only the base hospital is legally allowed to give orders regarding patient care.**
9. If the patient has a **continuous flow VAD** (non-pulsatile/pulseless), auscultate the left upper quadrant of the patient's abdomen for the "hum" of the VAD, which can help direct the appropriate actions.
10. A **pulsatile VAD** will make an audible sound without auscultation. Pulsatile VADs are usually older devices which pump blood via pulsatile mechanism, generating a peripheral pulse.
11. Determine if the device has power.
    A. If the device has power, you will see a green light on the HeartMate II, the most commonly implanted device
    B. On the HeartWare device, the display will clearly tell you the Liters per Minute (LPM) of blood flow.
12. Check the VAD for secure connections and that the batteries are charged and functional.

If a VAD is definitively confirmed by a trained person and there are no signs of life, no MAP and no pulse, and EtCO2 <20mmHg

13. Start CPR see protocol PCAR-03.

Considerations

1. While pulse oximetry can be used in patients with a VAD, the results may not be accurate because of the lack of pulsatile flow.
2. A EtCO2 <20mmHg in an unresponsive, correctly intubated, pulseless patient with a VAD would seem to be a reasonable indicator of poor systemic perfusion and should prompt rescuers to initiate chest compressions.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Sustained Ventricular Tachycardia with a Pulse

A regular or slightly irregular rhythm, heart rate 100 to 200 and wide >0.12 seconds QRS complex.

Definitions:

1. **Sustained Ventricular Tachycardia-** Runs of ventricular tachycardia lasting longer than 30 seconds.
2. **Asymptomatic-** Patient has no complaints related to heart rate.
3. **Mildly Symptomatic-** Patient is symptomatic but hemodynamically stable.
4. **Grossly Symptomatic-** Patient is symptomatic and **NOT** hemodynamically stable. (Must have ALOC, chest pain or hypotension related to a VT).
5. **All Joules-** Are in monophasic, use of equivalent Biphasic dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. 12 lead.
   C. SpO2.
   D. Blood glucose level.
   E. Pain scale.
   F. Physical assessment.
   G. Skin signs.
   H. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Dizziness. 2. Shortness of breath. 3. Lightheadedness. 4. Feeling as if your heart is racing (palpitations). 5. Chest pain (angina). 6. Loss of consciousness or fainting.	1. Congenital heart defect. 2. Hemodialysis. Home Meds: 1. Beta Blockers. 2. Calcium Channel blockers. 3. Amiodarone. 4. Sotalol.	1. Aberrancy. 2. Hyperkalemia. 3. Tricyclic antidepressant overdose.

Pediatric Sustained Ventricular Tachycardia with a Pulse

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
3. 12 lead ECG.
4. IV, NS, TKO.

Treatment #1- Asymptomatic:
1. Lidocaine 0.5mg/kg IV.

If V-Tach persists:
2. Lidocaine 0.5mg/kg IV, No repeat.

Treatment #2- Mildly Symptomatic:
1. Lidocaine 1mg/kg IV.

If V-Tach persists:
2. Lidocaine 0.5mg/kg IV, every 5 minutes, max total dose of 3mg/kg.

Treatment #3- Grossly Symptomatic:
1. midazolam 0.1mg/kg IV/IM, max total dose of 2mg,

OR

2. Midazolam 0.2mg/kg IN, (Half in each nostril), max total dose of 2mg.
3. Synchronized cardioversion 1 J/kg.

If no cardioversion:
4. Synchronized cardioversion 2 J/kg.

Considerations:
1. Do not delay synchronized cardioversion for IV access and premedication with midazolam.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Pediatric Respiratory

Pediatric Bronchospasms

Bronchospasm occurs when the airways (bronchial tubes) go into spasm and contract. This makes it hard to breathe and causes wheezing (a high-pitched whistling sound). Bronchospasm can also cause frequent coughing without wheezing. Bronchospasm is often due to irritation, inflammation, or allergic reaction of the airways. People with asthma get bronchospasm. However, not everyone with bronchospasm has asthma.

Definitions:

1. **Mild Respiratory Distress-** means mild wheezing, shortness of breath and/or cough, and ability to speak full sentences.
2. **Moderate Respiratory Distress-** means spontaneous breathing and adequate tidal volume with significant wheezing/SOB accompanied by any of the following signs: accessory muscle use, nasal flaring, grunting, and/or inability to speak full sentences.
3. **Severe Respiratory Distress-** means ineffective ventilations and/or inadequate tidal volume, which may be accompanied by any of the following signs: accessory muscle use, cyanosis, inability to speak, gasping respirations, and/or decreased level of consciousness.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   A. Pulse.
   B. SpO2.
2. If performed, before and after intervention or if condition changes:
   C. ECG.
   D. Blood glucose if history of diabetes.
   E. Pain scale.
   F. Physical assessment.
   G. Lung sounds before and after treatment.
   H. Capillary refill

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Respirations <10 or >30 per minute, rhythm (abnormal pattern, shallow), effort (labored). 2. Lung sounds (wheezing, stridor), cough, fever, spitting/coughing up blood or pink froth, barking. 3. Rash. 4. Urticaria. 5. Restlessness. 6. Fever. 7. Sputum production.	1. Asthma. Home Meds: 1. Albuterol. 2. Atrovent.	1. Smoke inhalation. 2. Allergic reaction. 3. Anaphylaxis. 4. Respiratory distress syndrome. 5. Pulmonary hemorrhage. 6. Pneumonia.

Pediatric Bronchospasms

1. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Capillary refill.

Treatment #1- Mild Bronchospasm:
1. Albuterol 2.5mg/3ml NS, via nebulizer, repeat as needed.

Treatment #2- Moderate Bronchospasm:
1. Cardiac monitor.
2. Albuterol 2.5mg/3ml NS & atrovent 0.5mg/2.5ml NS via nebulizer, do not repeat atrovent administration without BHO.
3. Repeat albuterol 2.5mg/3ml NS every 5 minutes as needed.
4. Consider IV, NS, TKO.

Treatment #3- Severe Bronchospasm:
1. Cardiac monitor.
2. Albuterol 2.5 mg/3ml NS & atrovent 0.5mg/2.5ml NS via nebulizer, do not repeat atrovent.
3. Repeat albuterol 2.5mg/3ml NS every 5 minutes as needed
4. 12 Lead ECG.
5. IV, NS, TKO.

If significant wheezes and SOB after albuterol 10mg:
6. Magnesium Sulfate 75 mg/kg, max single dose 2g, IV/IO, in 250ml NS, infusion over 20 minutes.

If patient **DOES NOT** show signs of improvement or is deteriorating rapidly:
7. Epinephrine 0.01 mg/kg **1:1,000** IM, Max dose of 0.5mg.

If necessary, assist ventilations with BVM 100% oxygen and initiate an inline nebulizer treatment with albuterol 2.5mg/3ml.

Considerations:
1. Suction as needed.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. Additional Dose of atrovent, 0.5mg/2.5ml NS, via nebulizer.
3. Additional dose epinephrine 0.01 mg/kg 1:1000 IM, max dose of 0.5mg IM

Pediatric Croup

Croup refers to an infection of the upper airway, which obstructs breathing and causes a characteristic barking cough.

Definitions:

1. **Croup without stridor-** Is characterized by a brassy or "barking" cough and hoarseness. The focus of treatment should be on keeping the patient calm.
2. **Croup with stridor-** Stridor is a harsh, crowing, or vibratory sound of variable pitch that results from turbulent airflow caused by partial obstruction of the respiratory passages. Audible without a stethoscope, stridor always warrants immediate attention because it may be the first sign of a serious or life-threatening process.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   A. Pulse.
   B. SpO2.
2. If performed, before and after intervention or if condition changes:
   C. ECG.
   D. Blood glucose level.
   E. Pain scale.
   F. Physical assessment.
   G. Lung sounds.
3. Vaccine history.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Barking cough. 2. Raspy voice. 3. Fever. 4. Hoarse voice. 5. Tachypnea. 6. Lethargy.	1. Recent illness. 2. Upper respiratory infection. Home Meds: 1. Steroids (Dexamethasone, Prednisone).	1. Epiglottitis. 2. Smoke inhalation. 3. Allergic reaction. 4. Anaphylaxis. 5. Foreign body airway obstruction.

Pediatric Croup

Treatment #1- Without Stridor:
1. Keep patient calm.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC, NRB or blow by, titrate to 94%.

Do not use humidified O2 or nebulized saline.

Treatment #2- With Stridor:
1. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB or blow by, titrate to 94%.
2. Consider cardiac monitor.

If HR <200 and no cardiac history:
3. 2.25% racemic epinephrine 0.5mL in 2.5 mL NS via nebulizer.

OR
4. Epinephrine 2.5 mg **1:1,000** via nebulizer.

Considerations:
1. Suction as needed.
2. Keep patient calm as symptoms can worsen with agitation.
3. If signs of allergic reaction, see protocol PENV-01.
4. If signs of foreign body airway obstruction, see protocol PAIR-02.
5. If wheezing, see protocol PRSP-01.

Base Hospital Orders

1. Racemic epinephrine or nebulized epinephrine if patient has a cardiac history.
2. Additional dose of racemic epinephrine or nebulized epinephrine
3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Epiglottitis

Epiglottitis is a potentially life-threatening condition that occurs when the epiglottis swells, blocking the flow of air into your lungs. A number of factors can cause the epiglottis to swell such as burns from hot liquids, direct injury to your throat and various infections.

Definitions:

1. **Epiglottitis without stridor-** Potentially life-threatening condition that occurs when the epiglottis swells, blocking the flow of air into your lungs. The primary goal for presentation of epiglottis with no stridor is keeping patient calm and transporting smoothly. Patient may present with a history of infection and may be drooling or have difficulty swallowing.
2. **Epiglottitis with stridor -** Patients at this stage have audible high pitched respirations secondary swelling in the upper airway. Great care should be taken to avoid respiratory failure. Keep patient calm and transport smoothly.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose level.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds before.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Fever. 2. Severe sore throat. 3. Abnormal, high-pitched sound when breathing in (stridor). 4. Difficult and painful swallowing. 5. Drooling. 6. Anxious, restless behavior. 7. Position of comfort may be sitting up or leaning forward.	1. Recent illness. 2. Recent upper airway infection. Home Meds: 1. Antibiotics (Cipro, PCN).	1. Smoke inhalation. 2. Allergic reaction. 3. Anaphylaxis.

Pediatric Epiglottitis

Treatment #1- Without Stridor:
1. Keep patient calm.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.

If can be done without increasing agitation or crying:
3. Consider nebulized NS or humidified O2.

Treatment #2- With Stridor:
1. Keep patient calm.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Consider cardiac monitor.
4. Epinephrine **1:1,000** 2.5mg nebulized

OR

5. 2.25% racemic epinephrine 0.5 mL mix in 2.5 mL NS via nebulizer.

If respiratory failure:
6. Ventilate with BVM and oral airway
7. Administer racemic epinephrine or epinephrine **1:1,000** via inline nebulizer.

Do not attempt to visualize airway:
8. Place supraglottic airway **ONLY IF UNABLE TO VENTILATE** with BVM and oral airway.

Considerations:
1. Suction as needed.
2. Keep patient calm as symptoms can worsen with agitation.
3. If signs of allergic reaction, see protocol PENV-01.
4. If signs of foreign body airway obstruction, see protocol PAIR-02.
5. If wheezing, see protocol PRSP-01.
6. Supraglottic airway can cause additional inflammation and must be used sparingly.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Smoke Inhalation

Smoke inhalation is the leading cause of death due to fires. It produces injury through several mechanisms, including thermal injury to the upper airway, irritation or chemical injury to the airways from soot, asphyxiation, and toxicity from carbon monoxide (CO) and other gases such as cyanide.

Definitions:

1. **Asymptomatic-** Known significant exposure to smoke with no complaints or symptoms.
2. **Mildly Symptomatic-** Known significant exposure to smoke, with signs and symptoms, such as weakness or mild shortness of breath.
3. **Grossly Symptomatic-** Known significant exposure to smoke, with serious signs and symptoms, such as ALOC, severe shortness of breath, unconscious.
4. **Carbon Monoxide-** Is a colorless, odorless, and tasteless poisonous gas that can be fatal when inhaled. CO inhibits the blood's capacity to carry oxygen. CO can be produced when burning any fuel. CO is a byproduct of incomplete combustion.
5. **Smoke Inhalation-** Suspected in patients rescued from fires or exposed to smoke.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Pain scale.
   C. Physical assessment.
   D. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Symptoms of CO poisoning: A. Similar to flu with no fever. B. Dizziness. C. Severe headaches. D. Nausea. E. Sleepiness. F. Fatigue/weakness. G. Disorientation/confusion.	1. Exposure closed space fires.	1. Pulmonary edema. 2. CO poising.

Pediatric Smoke Inhalation

Treatment #1- Asymptomatic:
1. Monitor SpO2, if <94% 1-6 LPM O2 via NC, titrate to 94%.

Treatment #2- Mildly Symptomatic:
1. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Cardiac monitor.

If suspected CO poisoning and SpO2 >94%:
3. Administer O2 at 15LPM via NRB.
4. IV, NS, TKO.

If wheezing:
5. See protocol PRSP-01.

If SBP is below length based treatment tape low value, and lung sounds are clear:
6. NS 20ml/kg IVF bolus, may repeat x2.

Treatment #3- Grossly Symptomatic:
1. Monitor SpO2, if <94% 1-15 LPM O2 via NC or NRB, titrate to 94%.
2. Cardiac monitor.

If suspected CO poisoning and SpO2 >94%:
3. O2 at 15LPM via NRB.
4. IV, NS, TKO.

If wheezing:
5. See protocol PRSP-01.

If SBP is below length based treatment tape low value, and lung sounds are clear:
6. NS 20ml/kg IVF bolus, may repeat twice.

If seizing:
7. See protocol PNRO-04.

If dysthymias occur:
8. See protocols PCAR-01 to 08.

Considerations:
1. Completely remove victim's clothing prior to transport.
2. Evaluate patient for facial burns, hoarseness, black sputum, and soot in the nose or mouth.
3. Pulse oximetry values may be unreliable in smoke inhalation patients.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Pediatric Neurologic

Pediatric Hyperglycemia

An excess of glucose in the bloodstream, often associated with diabetes mellitus.

Definitions:

1. **Asymptomatic-** No symptoms or complaints related to blood glucose level.
2. **Mildly Symptomatic** Showing symptoms of hyperglycemia such as polyuria, polydipsia and dehydration.
3. **Grossly Symptomatic-** ALOC, confusion.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Frequent urination. 2. Increased thirst. 3. Blurred vision. 4. Fatigue. 5. Headache. 6. Fruity-smelling breath. 7. Nausea and vomiting. 8. Shortness of breath. 9. Dry mouth. 10. Weakness. 11. Confusion. 12. Coma. 13. Abdominal pain.	1. Insulin dependent diabetes. 2. Non-insulin dependent diabetes. Home Meds: 1. Insulin. 2. Glucophage.	1. CVA. 2. ETOH intoxication. 3. Overdose. 4. Sepsis. 5. Dehydration. 6. DKA. 7. Hyperosmolar hyperglycemic nonketotic state HHNK.

Pediatric Hyperglycemia

Treatment #1- Asymptomatic:
1. Obtain blood glucose level.

If blood glucose level >180 mg/dL:
2. **DO NOT** initiate IV solely for high blood glucose.
3. Notify receiving nurse/physician.

Treatment #2- Mildly Symptomatic:
1. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
2. Obtain blood glucose level.

If blood glucose level >300 mg/dL
3. IV, NS, TKO.

If no fluid restriction exists and lungs are clear:
4. NS 10 ml/kg IVF bolus. Do not repeat.

Treatment #2- Grossly Symptomatic:
1. Cardiac monitor.
2. Monitor SpO2, if <94% 1-15 LPM O2 via NC or NRB, titrate to 94%.
3. Obtain blood glucose level.

If Blood glucose level >300 mg/dL:
4. IV, NS, TKO

If no fluid restriction exists and lungs are clear:
5. NS 10ml/kg IVF bolus. May repeat 10 ml/kg IVF bolus x 1 if capillary refill is delayed.

Considerations:
1. It is imperative to rule out other causes of ALOC.
2. In pediatric patients with hyperglycemia, aggressive fluid resuscitation can cause cerebral edema.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Hypoglycemia

Hypoglycemia is a condition caused by a very low level of blood glucose, your body's main energy source.

Definitions:

1. **Asymptomatic-** No symptoms or complaints related to blood glucose level.
2. **Mildly Symptomatic-** Showing symptoms of hypoglycemia such as confusion abnormal behavior or poor skin signs.
3. **Grossly Symptomatic-** Loss of consciousness or unconscious, seizure activity.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. An irregular heart rhythm. 2. Fatigue. 3. Pale skin. 4. Shakiness. 5. Anxiety. 6. Sweating. 7. Hunger. 8. Irritability. 9. Confusion. 10. Abnormal behavior. 11. Visual disturbances. 12. Blurred vision. 13. Seizures. 14. Loss of consciousness.	1. Insulin dependent diabetes 2. Non-insulin dependent diabetes. 3. Malnutrition. Home Meds: 1. Insulin. 2. Glucophage.	1. CVA. 2. ETOH intoxication. 3. Overdose. 4. Shock. 5. Sepsis.

Pediatric Hypoglycemia

1. Obtain blood glucose.

Treatment #1- Asymptomatic:
1. If blood glucose <70 mg/dL with diabetes history: Administer oral glucose.
2. If patient has **NO DIABETES HISTORY** administer oral glucose and notify receiving facility.

Treatment #2- Mildly Symptomatic:
1. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.

If less than 70 mg/dL: IV, NS, TKO.

Child >2 years of age
2. Consider oral glucose.
3. Dextrose 50% 1ml/kg IV/IO, titrate to blood glucose level >70 mg/dL,
   OR
4. Dextrose 10% 5ml/kg IV/IO, titrate to blood glucose level >70 mg/dL.

Child <2 years of age
5. Dextrose 10% 5ml/kg IV/IO, titrate to blood glucose level >70 mg/dL.

Treatment #3- Grossly Symptomatic:
1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Obtain blood glucose level.

If blood glucose level <70 mg/dL:
4. IV/IO, NS, TKO.

Child >2 years of age
5. Dextrose 50% 1ml/kg IV/IO, titrate to blood glucose level >70 mg/dl,
   OR
6. Dextrose 10% 5ml/kg IV/IO, titrate to blood glucose level >70 mg/dl.

Child <2 years of age
7. Dextrose 10% 5ml/kg IV/IO, titrate blood glucose level >70 mg/dl.

Considerations:
1. Dextrose 10% is the preferred concentration in pediatric patients.
2. If ALOC continues after Dextrose, go to protocol PNRO-03.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric New Onset A.L.O.C. Unknown Etiology

A mildly depressed level of consciousness or alertness may be classed as lethargy. Someone in this state can be aroused with little difficulty. People who are obtunded have a more depressed level of consciousness and cannot be fully aroused. Those who are not able to be aroused from a sleep-like state are said to be stuporous. Scales such as the Glasgow coma scale have been designed to measure the level of consciousness.

Definitions:

1. **New Onset-** No medical history that would cause a chronic altered level a of conscious or a decrease in patients normal level of consciousness.
2. **CPSS-** Cincinnati Prehospital Stroke Scale.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Stroke screen.
   G. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Evidence of trauma. 2. Fever. 3. Cough. 4. Fatigue. 5. Shakiness. 6. Skin color changes. 7. Snoring respirations.	1. Recent fall. 2. Recent infections. 3. Chang in medications. 4. Stopped medications 5. Accidental overdose. 6. ETOH abuse. 7. Liver disease. Home Meds 1. Lactulose. 2. Narcotics or pain meds.	1. Alcohol intoxication. 2. Epilepsy. 3. Hypo/Hyperglycemia. 4. Over/Underdose. 5. Trauma. 6. Sepsis. 7. Shock. 8. Behavioral.

Pediatric New Onset A.L.O.C. Unknown Etiology

Treatment #1-

1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via BVM, NC or NRB, titrate to 94%.
3. Monitor EtCO2 if using an supraglottic airway or BVM.
4. Obtain blood glucose level, if <70 mg/dL, see protocol PNRO-02. If blood glucose level >200 mg/dL, see protocol PNRO-01.
5. 12 lead ECG.

If presenting with serious signs and symptoms that do not fit into any other protocol:

6. IV, NS, TKO.

Considerations

1. **A**lcohol - Maintain airway as needed. If SBP below length based treatment tape low value, see protocol PCAR-04.
2. **E**pilepsy - If postictal, maintain airway as needed. If seizing, see protocol PNRO-04.
3. **I**nsulin - If blood glucose level >70 mg/dL, see protocol PNRO-01. If blood glucose level <70 mg/dL, see protocol PNRO-02.
4. **O**verdose/ Underdose - See protocols PODP-01 to 07. If no reversible causes and serious signs and symptoms, consider IV/IO.
5. **T**rauma - See protocol PTRA-01.
6. **I**nfection - See protocol PGEN-05.
7. **P**sychosis - This should be considered only after all other potential causes are ruled out.
8. **S**hock - See protocol PCAR-04.
9. **S**troke/Intracranial hemorrhage - assess pupil equality, presence of headache, posturing, abnormal neuro exam – alert receiving hospital of abnormal findings.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Glasgow Coma Scale				
Score		Child 4-14	Child 1-3	Infant <1 Year
4	EYE	Spontaneous	Spontaneous	Spontaneous
3		To Speech	To Speech	To Speech
2		To Pain	To Pain	To Pain
1		None	None	None
5	Verbal	Age appropriate orientation	Speaks and Social	Coos and babbles
4		Confused or disoriented	Disoriented, Consolable	Irritable cry's
3		Inappropriate Words	Inappropriate Words, Inconsolable	Cry's to pain
2		Incompressible speech	Incompressible speech, agitated	Moans to pain
1		None	None	None
6	Motor	Follows Commands	Moves Spontaneously	Moves Spontaneously
5		Localizes	Moves purposefully	Moves purposefully
4		Withdraws	Withdraws to Pain	Withdraws to Pain
3		Decorticate Posture	Abnormal Flexion	Abnormal Flexion
2		Decerebrate poster	Abnormal Extension	Abnormal Extension
1		None	None	None

Pediatric Seizures

A seizure is a sudden, uncontrolled electrical disturbance in the brain. It can cause changes in your behavior, movements, or feelings, and in levels of consciousness. In the prehospital setting, our goal is the management of generalized seizure activity that may affect respiratory drive or airway patency.

Definitions:

1. **Tonic Seizures-** Tonic seizures cause stiffening of your muscles. These seizures usually affect muscles in your back, arms, and legs and may cause you to fall to the ground.
2. **Clonic Seizures-** Clonic seizures are associated with repeated or rhythmic, jerking muscle movements. These seizures usually affect the neck, face, and arms.
3. **Tonic-Clonic Seizures-** Tonic-Clonic seizures, previously known as grand mal seizures, are the most dramatic type of epileptic seizure and can cause an abrupt loss of consciousness, body stiffening, and shaking, and sometimes loss of bladder control or biting your tongue.
4. **Recurrent Seizure-** Seizure witnessed by prehospital personnel lasting >2 minutes **OR** patient having two (2) or more seizures without regaining consciousness.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Blood glucose.
   C. Pain scale.
   D. Physical assessment
   E. Pupils.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Evidence of trauma. 2. High temperature (febrile state). 3. Current seizure activity. 4. Medical information tags, bracelets, or medallions.	1. Recent infection. 2. Fever. 3. Trauma. 4. Environment (heat/cold). 5. Epilepsy. Home Meds: 1. Acetazolamide(Acetazolam). 2. Carbamazepine (Tegretol). 3. Clobazam (Frisium). 4. Clonazepam (Rivotril). 5. Diazepam (Valium). 6. Ethosuximide (Zarontin). 7. Gabapentin (Neurontin). 8. Lamotrigine (Lamictal).	1. CVA. 2. Tetany. 3. Meningitis. 4. Encephalitis. 5. Hypertension. 6. Drug OD.

Pediatric Seizures

1. Cardiac monitor.
2. 2-15 LPM via NC or NRB, titrate to 94%.

Treatment #1- Recurrent Seizure Treatment:

3. Obtain blood glucose level, if <70 mg/dL, see protocol PNRO-02. If >200 mg/dL, **AVOID** fluids and notify receiving facility
4. If febrile, start active cooling measures, avoid midazolam unless seizure is >5 minutes. See protocol PGEN-05.
5. IV, NS, TKO.
6. Midazolam 0.1 mg/kg IV/IM/IO, max of 5 mg,

OR

7. Midazolam 0.2 mg/kg IN (half in each nostril), max of 5mg.

Treatment #2- Continued Seizure Activity:

If after **5** minutes, initial dose has **NOT** lessened or stopped seizure activity:

1. Midazolam 0.1 mg/kg IV/ IM/IO, max total dose of 10 mg,

OR

2. Midazolam 0.2 mg/kg IN (Half in each nostril), max total dose of 10 mg.

If patient is showing signs of respiratory compromise secondary to seizure activity:

3. Support ventilations with BVM and OPA.
4. Suction as needed.

Considerations:

1. Protect patient from further injury – move furniture and ensure safe area for treatment.
2. Spinal stabilization as indicated.
3. **DO NOT** forcibly restrain patient during seizure activity.
4. If narcotic overdose is suspected, refer to protocol PODP-06.

Base Hospital Orders

1. Make base contact for additional medication if seizures continue after maximum dose of midazolam.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Pediatric Environmental

Pediatric Allergic Reaction/Anaphylaxis

Allergic reactions occur when your immune system reacts to a foreign substance and can range from mild to severe.
Anaphylaxis is a severe, potentially life-threatening allergic reaction. It can occur within seconds or minutes of exposure.

Definitions:

1. **Mild-** Hives, rash to arms or legs, itching, anxiety.
2. **Moderate-** Hives, rash to torso, bronchospasm, wheezing, nausea, delayed capillary refill.
3. **Severe-** Respiratory distress, chest tightness, difficulty swallowing, altered mental status.
4. **Anaphylactic shock-** Signs of hemodynamic instability, tachycardia, ALOC, hypotension, syncope.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
   D. SpO2.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. Blood glucose level.
   C. Pain Scale.
   D. Physical assessment.
   E. Skin assessment.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Sneezing. 2. Itching of the nose, eyes or roof of the mouth. 3. Runny, stuffy nose. 4. Swelling of the lips, tongue, face or throat. 5. Hives. 6. Edema at the sting site. 7. Cough, chest tightness, wheezing or shortness of breath. 8. Loss of consciousness. 9. A drop in BP. 10. Urticaria. 11. Lightheadedness. 12. A rapid, weak pulse. 13. Nausea and vomiting.	1. Known allergy. 2. Asthma. Home Meds: 1. Epi-pen. 2. Diphenhydramine.	1. Asthma. 2. Toxic exposure.

Pediatric Allergic Reaction/Anaphylaxis

Treatment #1- Mild Reaction:
1. Age >2 years of age, diphenhydramine 1mg/kg PO, max of 50 mg.

Treatment #2- Moderate Reaction:
1. Consider IV, NS, TKO.
2. Diphenhydramine 1mg/kg PO/IV/IM, max 50mg.
3. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
4. If wheezing, albuterol 2.5 mg/3ml NS via nebulizer, repeat as needed.

Treatment #3- Severe Reaction:
1. Monitor SpO2, if <94%, 1-15 LPM O2 via NC or NRB, titrate to 94%.
2. Cardiac monitor.
3. IV/IO, NS, TKO.
4. Epinephrine 0.01 mg/kg **1:1,000** IM in lateral thigh, max 0.3mg.
5. Diphenhydramine 1 mg/kg IM/IV/IO, max dose of 50mg.
6. If wheezing, albuterol 2.5 mg/3ml NS via nebulizer, repeat as needed.
7. If stridor, 2.25% racemic epinephrine 0.5mL nebulized in 2.5mL NS.

Treatment #4- Anaphylactic Shock:
1. Monitor SpO2, if <94% 1-15 LPM O2 via NC or NRB, titrate to 94%.
2. Cardiac monitor.
3. IV/IO, NS, TKO.
4. Epinephrine 0.01 mg/kg **1:1,000** IM to lateral thigh, max 0.5mg.
5. If wheezing, albuterol 2.5 mg/3ml NS via nebulizer, repeat as needed.
6. Diphenhydramine 1 mg/kg IM/IV/IO, max dose of 50mg.
7. If stridor, 2.25% racemic epinephrine 0.5mL Nebulized in 2.5mL NS.
8. If SBP is below length based treatment tape low value, without evidence of fluid overload NS 20ml/kg IVF bolus, may repeat x2.
   ~~If after 3 fluid boluses and SBP is below length based treatment tape low value, **DILUTED** epinephrine 1ml IV/IO every 3-5 minutes as needed, titrate to length based appropriate SBP, normal mental status or brisk capillary refill.~~

If patient becomes unresponsive with no pulses:
9. Epinephrine 0.01 mg/kg **1:10,000** IV/IO, max of 0.5mg then go to Pediatric cardiac arrest protocol PCAR-03.

Considerations:
1. Attempt to identify allergen if it can be done SAFELY.
2. Remove allergen if possible.
3. If patient or Optional Skill EMT-B gives epi auto injector prior to arrival and patient is:
   A. Asymptomatic: give diphenhydramine 1mg/kg PO, max dose 50mg.
   B. Mildly symptomatic: give diphenhydramine 1 mg/kg IM/IV, max dose of 50mg.

~~To make **DILUTED** epinephrine:~~
~~Mix epinephrine 0.01mg/kg 1:10,000 to a total volume of 10ml with NS.~~

Base Hospital Orders

1. If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.

~~1. To increase diluted epinephrine pushes to every 2 minutes~~

2. Consult Base Hospital if additional orders are needed **or** patient has atypical presentation.

Pediatric Bites & Envenomation

Common poisonous spiders to the Central Valley are the brown widow (brown with orange hourglass on belly) and black widow (black with red hourglass on body) spiders and the brown recluse spider. The only indigenous poisonous snake in the Central Valley is the rattlesnake.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Abrasions. 2. Punctures. 3. Swelling and edema. 4. Pain to site.	1. Working on or around woodpiles or agriculture storage. 2. Hiking.	1. Abscess. 2. Cellulitus. 3. Necrosis. 4. Necrotizing fasciitis. 5. Allergic reaction. 6. Anaphylaxis.

Pediatric Bites & Envenomation

Treatment #1- Animal Bite:
1. Ensure personal safety.
2. Clean and dress wound as appropriate.
3. For possible fracture, see protocol PTRA-01.
4. For complaint of pain, apply ice packs.
5. If pain continues, consider pain management see protocol PGEN-03.

Treatment #2- Insect Bite or Sting:
1. Ensure personal safety.
2. Scrape away stinger if appropriate; **DO NOT** squeeze venom sac.
3. If allergic reaction or anaphylaxis, see protocol PENV-01.
4. For complaint of pain apply ice packs.
5. If pain continues, consider pain management see protocol PGEN-03.
6. Consider cardiac monitoring if tachycardic or bradycardic heart rates per child age.
7. Consider monitoring SpO2, if <94%, O2 1-6 LPM, NC, titrate to 94%.

Treatment #3- Snake Bite:
1. Ensure personal safety.
2. Clean and dress wound as appropriate.
3. Remove rings, watches, or other constricting items.
4. AVOID excessive movement of extremity.
5. Circle erythema around puncture site with ink pen and note time.
6. Monitor distal pulses.
7. Monitor SpO2, if <94% 1-15 LPM O2 via NC or NRB, titrate to 94%.
8. For complaint of pain **DO NOT** apply ice packs.
9. Consider pain management see protocol PGEN-03.
10. Consider cardiac monitoring if tachycardic or bradycardic heart rates per child age.

Considerations:
1. Do not apply constricting band or tourniquet.
2. Do not incise snakebites.
3. If dead or captured, have animal control transport snake for identification.
4. If safe, package insect or spider for transport and positive identification.
5. All bites (dog, cat, human, etc.) need to be transported for further evaluation at a hospital for further cleansing and potential antibiotic therapy.
6. Time since envenomation is important as anaphylaxis rarely occurs more than 60 minutes after inoculation.
7. Chemical ice packs should never be in direct contact with patient's skin. Ice pack should be wrapped in towel or other fabric material.

Base Hospital Orders

1. For known and confirmed black widow bite:
   A. Calcium chloride 8mg/kg, IV/IO, max 500mg.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Hyperthermia

Hyperthermia is a condition caused by your body overheating, usually as a result of prolonged exposure to or physical exertion in high temperatures. Heatstroke, the most serious form of heat injury, can occur if your body temperature rises to 104°F (40°C) or higher. The condition is most common in the summer months.

Definitions:

1. **Mildly Symptomatic-** Signs of heat cramps and heat exhaustion.
2. **Grossly symptomatic-** Heat stroke.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Temperature.
   G. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Headache. 2. Chest pain. 3. Cramps. 4. Nausea. 5. Weakness. 6. Abnormal temperature. <u>Heat cramps and heat exhaustion:</u> 1. Temperature normal to slightly elevated. 2. Mental status alert to slightly confused. 3. Skin signs diaphoresis, warm or hot to touch. 4. Muscle cramps and weakness. <u>Heat stroke:</u> 1. High core temperature usually above 104°F. 2. Altered mental status. 3. Skin hot to touch and flushed. 4. Possible seizure activity. 5. Low BP. 6. Tachycardia.	Note: Persons at greatest risk of hyperthermia are: 1. The immune suppressed. 2. Athletes. 3. Persons on medications, which impair the body's ability to regulate heat.	1. Always rule out other causes of ALOC.

Pediatric Hyperthermia

Treatment #1- Mildly Symptomatic:
1. Move patient to cool environment.
2. Remove excess clothing.
3. Spray or sprinkle patient's face with cool (not cold) water and use fan to evaporate.
4. Ice packs to palms of hands and soles of feet.
5. If able to swallow safely, cool water PO.
6. Consider IV, NS, TKO.
7. If no fluid restrictions exist and lungs are clear NS 20ml/kg IVF bolus IV, max 2,000 ml.

Treatment #2- Grossly Symptomatic:
1. Move patient to cool environment.
2. Remove excess clothing.
3. Cardiac monitor.
4. Monitor SpO2, if <94%, O2 1-15 LPM via NC or NRB, titrate to 94%.
5. Obtain blood glucose level.
6. Ice packs to palms of hands and soles of feet.
7. IV/IO, NS, TKO.
8. If no fluid restrictions exist and lungs are clear, NS 20ml/kg IVF bolus IV/IO, Max 2,000 ml.
9. If seizing, see seizure protocol PNRO-04.

Considerations:
1. Chemical ice packs should never be in direct contact with patient's skin and should be wrapped in towel or other fabric material.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Hypothermia

Hypothermia is a medical emergency that occurs when your body loses heat faster than it can produce heat, causing a dangerously low body temperature. Normal body temperature is around 98.6°F (37°C). Hypothermia occurs as your body temperature falls below 95°F (35°C).

Definitions:

1. **Mildly Symptomatic-** Signs and symptoms of hypothermia.
2. **Grossly symptomatic-** Signs and symptoms of hypothermia with ALOC, loss of consciousness or hypotension.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.
   G. Patient's body temperature.
3. Length of exposure.
4. Air temperature, water temperature?
5. Was patient wet or dry?
6. Time of mental status changes?

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Shivering. 2. Slurred speech or mumbling. 3. Slow, shallow breathing. 4. Weak pulse. 5. Lack of coordination. 6. Drowsiness. 7. Confusion or memory loss. 8. Loss of consciousness. 9. Altered mental status. 10. Evidence of local cold injury-blanching, red or wax looking skin especially ears, nose and fingers, burning or numbness in affected areas. 11. Stuporous or comatose. 12. Dilated pupils. 13. Hypotensive or pulseless, slowed or absent respirations.	1. Trauma. 2. Alcohol consumption, medications. 3. Pre-existing medical problems. 4. Recent illness.	1. Rule out other causes for ALOC. 2. Severe sepsis. 3. Environmental exposure. 4. Drug use.

Pediatric Hypothermia

Treatment #1- Mildly Symptomatic:
1. Move patient to warm environment.
2. Remove clothing if wet and cover with warm blankets.
3. Apply heat packs to groin and axillary.
4. Consider IV, NS, TKO.
5. If no fluid restrictions exist and lungs are clear, consider **WARM** NS 20 ml/kg IVF bolus, no repeat.

Treatment #2- Grossly Symptomatic:
1. Move patient to warm environment.
2. Remove clothing if wet and cover with warm blankets.
3. Apply heats packs to groin and axillary.
4. Cardiac monitor.
5. Monitor SpO2, if <94% O2, 1-15 LPM via NC or NRB, titrate to 94%.
6. Obtain blood glucose level, if >70 mg/dL, see protocol PNRO-02. If >200 mg/dL see protocol PNRO-01.
7. Consider 12 lead EKG.
8. IV/IO, NS, TKO.
9. If no fluid restrictions exist and lungs are clear **WARM** NS 20 ml/kg IVF bolus, may repeat x2, max total dose 2,000 ml.

Considerations:
1. **DO NOT** attempt to thaw out frost bitten areas or apply heat packs to frostbite sites.
2. Chemical heat packs should never be in direct contact with patient's skin. Heat pack should be wrapped in towel or other fabric material.
3. Drive with caution and avoid bumps and hard shocks in all patient movements.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Pediatric Trauma

Pediatric Trauma

Trauma can either be blunt or penetrating, open or closed, or any combination of all.

Definitions:

1. **Blunt Trauma-** Traumatic injury caused by a blunt object or surface.
2. **Penetrating-** Traumatic injury caused when an object enters the body.
3. **Open-** Traumatic injury with a break in the skin**.**
4. **Closed-** Traumatic injury without a break in the skin.
5. **TBSA-** Total burn surface area.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.
   G. Head to toe exam.

Objective Findings:

1. Mechanism of injury.
2. Medical history of cardiovascular problems, diabetes, or seizure disorder.
3. Check for DCAP-BTLS (Deformity, Contusion / Crepitus, Abrasion, Puncture, Bleeding, Tenderness, Laceration, Swelling).
4. Glasgow coma score.
5. Neurological impairment or focal deficit – paralysis, weakness.
6. Eyes/vision – pupil inequality and reactivity, eye tracking, impaired vision – double vision, stars.
7. Check for paradoxical chest wall movement (flail chest), rib cage, and sternal instability.
8. Check for pelvic instability, abdominal rigidity and guarding.
9. Check for range of motion, distal pulses, sensation, skin color, and associated injuries.

Pediatric Trauma

Treatment #1 Asymptomatic:
1. If bleeding, see injury specific guidelines.
2. Place in spinal motion restriction if indicated.
3. See injury specific guidelines starting on PTRA-02.

Treatment #2- Symptomatic:
1. If bleeding, see injury specific guidelines.
2. Place in spinal motion restricting if indicated.
3. Monitor SpO2, if <94% 1-6 LPM O2 via NC, titrate to 94%.
4. See injury specific guidelines.
5. Consider treating for pain. See protocol PGEN-03.
6. If ALOC, loss of consciousness, obtain blood glucose level.
7. If chest pain Cardiac monitor.
8. Consider 12 lead ECG.

Treatment #3- Grossly Symptomatic or Signs of Shock:
1. If bleeding, see injury specific guidelines.
2. Place in spinal motion restricting if indicated.
3. Patients with ineffective respirations, support ventilations with BVM and airway adjunct.
4. Suction as needed.
5. TRANSPORT.
6. Cardiac monitor.
7. Monitor SpO2, if <94%, 1-15 LPM O2 via NC or NRB, titrate to 94%.
8. Consider treating for pain. See protocol PGEN-03.
9. If loss of consciousness or ALOC obtain blood glucose level, If <70 mg/dL, see protocol PNRO-03.
10. If chest injury, consider 12 Lead.
11. 2 large bore IV, NS, TKO.
12. If SBP is below length based treatment tape low value, lung sounds are clear and no fluid restrictions exist NS 20ml/kg IVF bolus, may repeat x1.
13. See injury specific guidelines.

Considerations:
1. Continually assess for signs of shock.
2. If brain injury is suspected, elevate the head of the patient as long as no signs of shock are present.
3. Significant internal thoracic and abdominal trauma may occur without any signs of injury.
4. Transport patient in position of comfort if not in spinal precautions. Place pregnant patients in left lateral recumbent position.
5. Avoid supraglottic airway unless no gag is present and unable to ventilate with BVM and OPA.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Injury Specific Guidelines

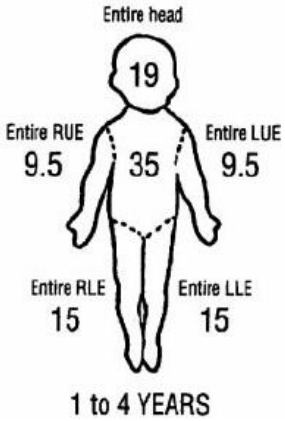
Trauma: Injury Specific Treatments	
Treatment for Bleeding Control	Treatment Considerations
1. Direct pressure. 2. If unable to control with direct pressure alone, use hemostatic dressing on wound and pack wound if applicable. 3. Elevate extremity 4. If bleeding still not controlled, apply tourniquet.	1. Secure tourniquets as high on arm or leg as possible. 2. Note time of placement.
Treatment for Eye Injury	Treatment Considerations
1. Apply dressing as appropriate. 2. Loosely cover affected and unaffected eye.	1. **DO NOT** attempt to re insert eye.
Treatment for Tooth Injury	Treatment Considerations
1. Keep avulsed teeth in saline soaked gauze, **OR** 2. Commercial tooth saver kit. 3. Transport tooth with patient.	1. **DO NOT** attempt to re-insert teeth. 2. **DO NOT** attempt to remove partially avulsed teeth.
Treatment for Mandible Fracture	Treatment Considerations
1. Splint with cravat or bandage.	1. Monitor airway compromise or difficulty breathing.
Treatment for Impaled Object	Treatment Considerations
1. Stabilize with large bulky dressings. 2. Leave in place.	1. Removal of impaled objects should only be considered if object interferes with CPR or airway cannot be managed. 2. Consider base contact for consult.
Treatment for Flail Chest	Treatment Considerations
1. Stabilize chest with large bulky dressing.	
Treatment for Open Chest Wound	Treatment Considerations
1. Cover wound with loose dressing, do not seal. Sucking chest wounds: 2. Immediately cover with gloved hand. 3. Cover with occlusive dressing taped on three sides, **OR** 4. Use commercially available chest seal.	1. Continuously monitor patient for tension pneumothorax. 2. Attempt to “burp” the wound by removing occlusive dressing, allowing air to escape and then recovering the wound, prior to needle decompression.
Treatment for Tension Pneumothorax	Treatment Considerations
1. Perform needle decompression: A. 2nd or 3rd intercostal space mid clavicular.	1. Tension pneumothorax occurs when a patient has: A. Absent or decreased lung sounds. B. Difficulty breathing. C. Hypotension.

Trauma: Injury Specific Treatments	
Treatment for Cardiac Tamponade	Treatment Considerations
1. Cardiac monitor. 2. 12 Lead ECG. If SBP is below length based treatment tape low value, lung sounds are clear and no fluid restrictions exist: 3. 20ml/kg NS Bolus, titrate to length based treatment tape low value, may repeat x1.	
Treatment for Cardiac Contusion	Treatment Considerations
1. Cardiac monitor for dysrhythmias: A. V-Tach- see protocol PCAR-08.	1. Consider 12 lead with blunt chest trauma.
Treatment for Evisceration of Organs	Treatment Considerations
1. Cover eviscerated organs with normal saline soaked gauze.	1. Frequently assess gauze for dryness and add additional normal saline if needed. 2. **DO NOT** attempt to reinsert organs.
Treatment for Genital Injuries	Treatment Considerations
1. Cover genitalia with saline soaked gauze.	1. If necessary, apply direct pressure to control bleeding. 2. Treat amputation as extremity amputation.
Treatment for Extremity Injuries	Treatment Considerations
1. Check for range of motion, distal pulses, sensation, skin color, and associated injuries. 2. Elevate extremity. 3. Apply cold packs to reduce pain and decrease soft tissue swelling. 4. Splint injured extremity in position found unless precluded by extrication consideration, no palpable pulses, or patient discomfort.	1. Pad all splinted extremities and recheck distal pulses and neurological function every 5 minutes. 2. **DO NOT** apply traction or attempt to reduce an open extremity fracture.
Treatment for Mid Shaft Femur Fracture	Treatment Considerations
1. Apply traction splint.	
Treatment for Extremity Amputation	Treatment Considerations
1. Place/cover amputated part in/with dry sterile dressing. 2. Place in sealed plastic bag or wrap with plastic. 3. Place dressed and wrapped part on top of ice or cold pack.	1. If patient condition allows, transport amputated part with patient. Chemical ice packs should never be in direct contact with patient's skin. Ice pack should be wrapped in towel or other fabric material.
Treatment for Soft Tissue Injuries	Treatment Considerations
1. Cover open wounds with sterile dressings.	

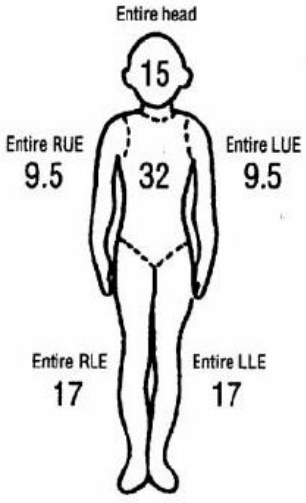
Trauma: Injury Specific Treatments

Treatment for Burns	Treatment Considerations
1. Remove clothing from burned area if possible without removing skin. 2. Patients with respiratory distress see protocol PRSP-01 to 04. If <20% TBSA: 3. Estimate depth of burn (full thickness, partial thickness, surface burn). 4. Calculate TBSA using rule of nines, see chart below. 5. Cover with sterile dressing soaked with sterile water. If >20% TBSA: 6. Cover with dry sterile burn sheet or cleanest dry sheet. 7. Place patient on dry sterile burn sheet for transport. 8. IV, NS, titrate fluids to Parkland Formula. 9. Transport to trauma center. If **AIRWAY** is compromised, or **LOW SPO2**, go to **NEAREST ED.** **Chemical** 1. Follow appropriate decontamination or hazmat procedures. 2. Brush off dry powders. 3. Remove contaminated clothing. 4. Irrigate with copious amounts of water. **Thermal and Electrical** 1. Stop the burning process. 2. Cool with water for up to 30 minutes. 3. Remove jewelry and non-adhered clothing. 4. Cover burn.	1. Always attempt to identify type and source of burn: A. Chemical. B. Electrical. C. Steam. D. Smoke. E. Open flame. **Parkland Formula** **2. 4 ml x %TBSA x body weight (kg) = Total for 24 hours.** **3. 50% given in first 8 hours; 50% given in next 16 hours.** **Chemical** 4. **DO NOT** attempt to remove tar or other adhered material. 5. If possible, bring chemical Safety Data Sheet (SDS) with patient to hospital. **Thermal and electrical** 6. Avoid prolonged cool water usage due to risk for hypothermia and local cold injury. 7. **DO NOT** use ice water or apply ice or ice packs to patient. 8. **DO NOT** break blisters.

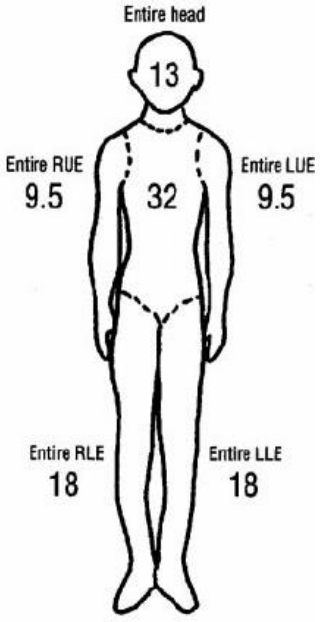
Rule of Nines Burn Chart



1 to 4 YEARS



5 to 9 YEARS



10 to 14 YEARS

Pediatric Traumatic Arrest

Loss of cardiac and pulmonary function due to traumatic event.

Definitions:

1. High Quality CPR- Use TEAM approach:
   A. 100 to 120 compressions per minute.
   B. **15:2** ratio compression to ventilation ratio.
   C. Compress at least 1/3 the depth of the chest.
   D. Allow complete recoil.
   E. Minimize interruptions.
   F. Rotate compressors every 2 minutes.
   G. Pre-charge monitor for defibrillation while CPR is in progress.

Documentation Standards:

1. Every 5 minutes:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Capnography.
   D. Blood glucose.
   E. Physical assessment.
   F. Lung sounds.

Objective Findings:

1. Obtain patient history and document the following:
   A. Estimated down time.
   B. Quickly assess for obvious signs of death:
      i. Decapitation.
      ii. Decomposition.
      iii. Burnt beyond recognition.
      iv. Lividity.
      v. Rigor mortis.
   C. Circumstances surrounding the arrest:
      i. Onset (witnessed or unwitnessed).
      ii. Preceding symptoms.
      iii. Bystander CPR.
      iv. Medications.
      v. Environmental factors (hypothermia, inhalation, and asphyxiation).

Pediatric Trauma Arrest

Treatment- Treat reversible causes upon identification.

Reversible Causes

1. **Hypovolemia-** (history suggesting volume depletion)
   Start 2nd IV, NS 20ml/kg bolus IV/IO, repeat x2.
2. **Hypoxia-** (SpO2 <94%)
   Maintain ventilations at 8-10 minutes, with 100% O2, BVM & OPA.
   If unable to ventilate, insert supraglottic airway.
3. **Hydrogen Ion-** (acidosis, long down time, dialysis patient)
   Sodium bicarbonate 1mEq/kg IV/IO. Max 50mEq.
4. **Hypoglycemia-** (Blood glucose level <70 mg/dL)
   dextrose 10% 5 ml/kg IV/IO,
   OR
   dextrose 50% 1 ml/kg IV/IO.
5. **Hypocalcemia-** (long down time, dialysis patient)
   Calcium chloride 10%, 10mg/kg IV/IO, max 1 gm.
6. **Hyperkalemia-** (long down time, dialysis patient)
   sodium bicarbonate 1mEq/kg IV/IO, max 50mEq.
7. **Hypothermia-** (body temp <34°C)
   Active rewarming with warm IV/IO fluids, hot packs to neck and groin.
8. **Tension Pneumothorax-** (absent lung sounds on affected side)
   Needle decompression.
9. **Tamponade, Cardiac-**
   If SBP is below length based tape low level:
   NS 20 ml/kg IVF bolus IV/IO, may repeat x2.
10. **Toxins-**
    See protocol PODP-01 to 07.
11. **Torsade's De pointes-**
    Magnesium sulfate 25mg/kg IV/IO, max 2g.

Considerations:

1. The goal is high quality CPR.
2. **DO NOT** delay vascular access with IV attempts. Go directly to IO.
3. Monitor capnography with BVM & OPA.
4. Transport immediately. After spinal motion restriction, perform all treatment enroute.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Trauma Arrest

Treatment

Transport
To approved Trauma Center perform ALL treatment enroute

1. 200 compressions
2. OPA & BVM,
3. Bilateral needle decompression
4. NS 20ml/kg IO/IV bolus, may repeat x2.
5. Consider advanced airway

2 Min.

Rhythm check #2

V-Fib / pV-Tach	Asystole / PEA	ROSC

Shock 2 Joules/kg

1. 200 compressions

See protocol PTRA-01.

2 Min.

Rhythm check #1

V-Fib/V-Tach	Asystole/PEA	ROSC

Shock 4 Joules/kg

1. 200 compressions
2. Lidocaine 1mg/kg IV/IO, max 3mg/kg, No Repeat

1. 200 compressions

See protocol PTRA-01.

2 Min.

Return to Rhythm check #1

All Joules- are in Biphasic, use of equivalent Monophasic dose if equipped to do so is appropriate. Follow manufacturer's recommendations for single shocks.

Always consider reversible causes and treat when identified

2 Min.

Pediatric Overdose

Pediatric Acute Dystonic Reactions

Acute dystonic reactions are an extrapyramidal side effect of antipsychotic and certain other medications such as phenothiazines. Dystonia refers to sustained muscle contractions, frequently causing twisting, repetitive movements, or abnormal postures. They may affect any part of the body. Patients experiencing acute dystonic reactions are often frightened and fearful, and may be in considerable pain.

Definitions:

1. **Symptomatic/Mild Reaction-** Intermittent spasms or sustained involuntary contractions isolated to extremities, tongue or jaw.
2. **Grossly Symptomatic/Severe Reaction-** Intermittent spasms or sustained involuntary contractions affecting back or entire body.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.
3. Name of medication.
4. Estimated number of pills or dose.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Inability to move eyes. 2. Muscle spasms of face, neck, body, arms, or legs causing unusual postures or unusual expressions on face. 3. Rapid or worm-like movements of tongue. 4. Sticking out of tongue. 5. Tic-like or twitching movements. 6. Trouble breathing, speaking, or swallowing. 7. Uncontrolled chewing movements. 8. Uncontrolled movements of arms or legs. 9. Uncontrolled twisting movements of neck, trunk, arms, or leg.	1. Abdominal pain. 2. Nausea and vomiting. 3. Bipolar disorder. 4. Schizophrenia. Common Med Names 1. Prochlorperazine (Compazine, Compro, Procomp). 2. Chlorpromazine (Promapar, Thorazine). 3. Fluphenazine (Permitil, Prolixin). 4. Perphenazine. 5. Trifluoperazine (Stelazine). 6. Thioridazine (Mellaril).	1. Seizure.

Pediatric Acute Dystonic Reactions

Treatment #1- Symptomatic/Mild Reaction:
1. Monitor SpO2, if <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Diphenhydramine 1mg/kg PO, max of 50mg.

Treatment #2- Grossly Symptomatic/Severe Reaction:
1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM NC or NRB, titrate to 94%.
3. IV, NS, TKO.
4. Diphenhydramine 1mg/kg IV, max of 50mg,

OR

5. Diphenhydramine 1mg/kg PO, max of 50mg.

Considerations:
1. If benzodiazepines have already been administered to treat seizures, **DO NOT** withhold diphenhydramine.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Beta Blockers Overdose

Beta blockers, also known as beta-adrenergic blocking agents, are medications that are commonly used to reduce BP. Beta blockers work by blocking the effects of the adrenaline.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibly of beta blocker overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals beta blocker overdose and patient is showing signs and symptoms related to beta blockers.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Pupils.
   G. Lung sounds.
3. Name of medication.
4. Estimated number of pills or amount of liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Hypotension. 2. Bradycardia. 3. AV block. 4. Heart failure. 5. Bronchospasm. 6. Hypoglycemia. 7. Hyperkalemia. 8. Stupor. 9. Coma. 10. Seizures.	1. High BP. 2. Irregular heart rhythm (arrhythmia). 3. Heart failure. 4. Chest pain (angina). 5. Heart attacks. 6. Migraine. 7. Certain types of tremors. Home Meds: 1. Acebutolol (Sectral). 2. Atenolol (Tenormin). 3. Bisoprolol (Zebeta) 4. Metoprolol (Lopressor, Toprol-XL). 5. Nadolol (Corgard). 6. Nebivolol (Bystolic). 7. Propranolol (Inderal LA, InnoPran XL).	1. Co-ingestion. 2. Calcium channel OD. 3. Digoxin toxicity. 4. Complete heart block. 5. Renal failure.

Pediatric Beta Blockers Overdose

1. Cardiac monitor.
2. 12 Lead ECG.
3. Monitor SpO2, if < 94% 1-15 LPM O2 via NC or NRB, titrate to 94%.

Treatment #1- Asymptomatic:
1. Consider, IV, NS, TKO.
2. Blood glucose level every 15 minutes.
3. If blood glucose level <70 mg/dL, administer oral glucose, titrate to blood glucose level >70 mg/dL,

OR

4. Dextrose 10% 5 ml/kg IV, titrate to blood glucose level >70 mg/dL.

Treatment #2- Symptomatic:
1. IV, NS, TKO.
2. Blood glucose level every 15 minutes.
3. If blood glucose level <70 mg/dL, dextrose 10% 5 ml/kg IV/IO, titrate to blood glucose level >70 mg/dL,
4. If SBP is below length based treatment tape low value without evidence of fluid overload, NS 20 ml/kg IVF bolus, may repeat x2.
5. If SBP remains below length based treatment tape low value, see base hospital order below.
6. For seizure activity, see protocol PNRO-04.

Considerations:
1. Monitor QRS duration closely even in asymptomatic patients.
2. If patient is on a hold or there is potential for intentional OD consider 4 point restraints.
3. If patient is physically combative, consider involving law enforcement to assist in putting patient in 4 point restraints.

~~To make **DILUTED** epinephrine:~~
~~Mix epinephrine 0.01 mg/kg **1:10,000** to a total volume of 10ml with NS.~~

Base Hospital Orders

1. Additional 10ml/kg, NS, IV/IO.
2. If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.
2. ~~DILUTED epinephrine 1 ml IV/IO every 3-5 minutes.~~

3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Calcium Channel Blocker Overdose

Calcium channel blockers are used in the treatment of hypertension, angina pectoris, cardiac arrhythmias, and other disorders. These medications are available in both immediate-release and extended-release preparations. The potential toxicity of these agents is substantial, and is often under appreciated by the public.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibly of calcium channel blocker overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals calcium channel overdose and patient is showing signs and symptoms related to calcium channel.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose level.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.
3. Name of medication.
4. Estimated number of pills or amount of liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Constipation. 2. Headache. 3. Palpitations. 4. Dizziness. 5. Rash. 6. Drowsiness. 7. Flushing. 8. Nausea. 9. Swelling in the feet and lower legs. 10. Bradycardia. 11. Hypotension. 12. Shortness of breath.	1. Hypertension. 2. Angina pectoris. 3. Cardiac arrhythmias. Home Meds: 1. Amlodipine (Norvasc). 2. Diltiazem (Cardizem, Tiazac, others). 3. Felodipine. 4. Isradipine. 5. Nicardipine. 6. Nifedipine (Adalat CC, Afeditab CR, Procardia). 7. Nisoldipine (Sular). 8. Verapamil (Calan, Verelan).	1. Co- ingestion. 2. Beta blocker OD. 3. Digoxin toxicity. 4. Complete heart block. 5. Renal failure.

Pediatric Calcium Channel Blocker Overdose

1. Cardiac monitor.
2. 12 lead ECG.
3. Monitor SpO2 if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.

Treatment #1- Asymptomatic:
1. Consider, IV, NS, TKO.

Treatment #2- Symptomatic:
1. IV/IO, NS, TKO
2. Calcium chloride 10% 20 mg/kg IV/IO over 3-5 minutes max 2g.
3. If SBP is below length based treatment tape low value, lung sounds are clear, NS 20ml/kg IVF bolus, may repeat x2.
4. If SBP remains below length based treatment tape low value, lung sounds are clear and no fluid restrictions exist, see base order below.

Considerations:
1. Monitor QRS duration closely even in asymptomatic patients.
2. Monitor ECG for presence of AV nodal blocks.
3. If patient is on a hold or there is potential for intentional OD, consider 4 point restraints.
4. If patient is physically combative consider involving law enforcement to assist in putting patient in 4 point restraints.

~~To make **DILUTED** epinephrine:~~
~~Mix epinephrine 0.01mg/kg 1:10,000 to a total volume of 10ml with NS.~~

Base Hospital Orders

1. Additional NS 10ml/kg IVF bolus.
2. If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.
2. ~~DILUTED epinephrine 1ml IV/IO every 3-5 minutes, titrate to length based treatment tape SBP low value.~~

3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Acute Drug Intoxication

Acute drug intoxication refers to the immediate and deleterious effects of drugs such as cocaine, amphetamines, PCP or bath salts, on the body. Although acute drug intoxication and drug dependence can be present in the same individual, these syndromes present with different symptoms.

Definitions:

1. **Intoxication**- History reveals or patient is showing signs and symptoms of acute drug intoxication however patient is cooperative.
2. **Intoxication with serious agitation**- History reveals or patient is showing signs and symptoms of acute drug intoxication however, patient is not cooperative, is a safety risk to crews or a safety risk to themselves. Safety risks include physically combative or erratic dangerous behavior.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose level.
   D. Physical assessment.
   E. Pupils.
   F. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Tachycardia. 2. Hypertension. 3. Dilated pupils. 4. Hyperthermia. 5. Restlessness. 6. Anxiety, panic, paranoia. 7. Erratic behavior. 8. Tremors. 9. Psychosis. 10. Nausea. 11. Agitation.	1. Drug use. 2. Previous OD. Home Meds: 1. Methadone.	1. Co-ingestion. 2. Stimulant induced MI. 3. Encephalopathy. 4. Drug induced psychosis.

Pediatric Acute Drug Intoxication

Treatment #1- Intoxication:

1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. If chest pain obtain 12 lead EKG.
4. If ALOC blood glucose level, if <70 mg/dL, see protocol PNRO-02.

Considerations:

1. Safety is the highest priority. Consider law enforcement assistance if the patient is agitated.
2. If patient is physically combative consider involving law enforcement to assist in putting the patient in 4 point restraints.

Base Hospital Orders

1. Midazolam 0.05 mg/kg IM/IN, max of 2mg for serious agitation.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Cyclic Antidepressants Overdose

The clinical presentation of cyclic antidepressant overdose is extremely variable. Patients can present alert with normal vital signs or comatose and hypotensive. In any case, rapid onset of symptoms and rapid deterioration are characteristic of cyclic antidepressant overdose.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibly of cyclic antidepressants overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals cyclic antidepressants overdose and patient is showing signs and symptoms related to cyclic antidepressants or is having dysrhythmias.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose level.
   D. Pain scale.
   E. Physical assessment.
   F. Pupils.
   G. Lung sounds.
3. Name of medication.
4. Estimated number of pills or amount of liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Blurred vision. 2. Dry mouth. 3. Constipation. 4. Weight gain or loss. 5. Rash. 6. Hives. 7. Increased heart rate. 8. Cardiac conduction delays. 9. Dysrhythmias. 10. Hypotension. 11. Respiratory depression. 12. Seizures. 13. Coma.	1. Depression. 2. Previous OD. 3. Panic disorder. 4. Bulimia. 5. Chronic pain. 6. Migraine. 7. Tension headaches. 8. Diabetic neuropathy. 9. Phantom limb pain. 10. Chronic itching. Home Meds: 1. Amitriptyline. 2. Amoxapine. 3. Desipramine (Norpramin). 4. Doxepin. 5. Imipramine (Tofranil). 6. Nortriptyline (Pamelor). 7. Protriptyline (Vivactil). 8. Trimipramine (Surmontil).	1. Co-ingestion.

Pediatric Cyclic Antidepressants Overdose

1. Cardiac monitor.
2. Monitor SpO2, if <94%, 1-15 LPM O2 via NC or NRB, titrate to 94%.
3. 12 lead ECG.

Treatment #1- Asymptomatic:
1. Consider IV, NS, TKO.

Treatment #2- Symptomatic or has Dysrhythmias:
1. IV/IO, NS, TKO.
2. If QRS complex is greater than 0.10 ms, sodium bicarbonate 1mEq/kg IV/IO, max single dose 50 mEq. Repeat until QRS <0.10ms
3. For seizure activity, see protocol PNRO-04.
4. If SBP is below length based treatment tape low value, and lung sounds are clear, NS 20ml/kg IVF bolus, may repeat x2.
5. If SBP remains below length based treatment tape low value, see base hospital order below.
6. If assisting ventilations hyperventilate.
7. Monitor EtCO2 if using a supraglottic airway or BVM.

Considerations:
1. Monitor ECG closely even in asymptomatic patients as TCA overdose patients deteriorate suddenly and quickly.
2. If patient is on a hold or there is potential for intentional OD consider 4 point restraints.
3. If patient is physically combative consider involving law enforcement to assist in putting patient in 4 point restraints.

~~To make **DILUTED** epinephrine:~~
~~Mix epinephrine 0.01mg/kg **1:10,000** to a total volume of 10ml with NS.~~

Base Hospital Orders

1. Additional NS 10ml/kg IVF bolus.
2. If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.
~~2. DILUTED epinephrine 1ml IV/IO every 3-5 minutes, titrate to length based treatment tape SBP low value.~~

3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Opiate Overdose

Physical and mental symptoms that occur after taking too many opioids, a substance found in certain prescription pain medications and illegal drugs like heroin.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibility of opiate overdose but patient is showing no signs or symptoms of overdose.
2. **Symptomatic-** Patient has admitted or history reveals opiate overdose and patient is showing signs and symptoms related to opiate overdose, including respiratory depression or apnea.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose if diabetic history or continues to have ALOC.
   D. Physical assessment.
   E. Pupils.
   F. Lung sounds.
3. Name of medication.
4. Estimated number of pills or amount of liquid.
5. Route of administration.
6. Time of administration.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Lethargy. 2. ALOC. 3. Shortness of breath. 4. Pinpoint pupils. 5. Slow or absent respirations. 6. Hypotension.	1. Short-term pain management. 2. Chronic pain management. 3. Heroin use. Home Meds: 1. Hydrocodone (Vicodin®). 2. Oxycodone (OxyContin®, Percocet®). 3. Oxymorphone (Opana®). 4. Morphine (Kadian®, Avinza®). 5. Codeine. 6. Fentanyl.	1. Pontine stroke. 2. Co-ingestion. 3. Hypoxia. 4. Hypothermia. 5. Seizure.

Pediatric Opiate Overdose

1. Cardiac monitor.
2. Monitor EtCO2.
3. Monitor SpO2.

Treatment #1- Symptomatic with Inadequate Respiration:

1. If SpO2 <94%, 1-15 LPM via NC, NRB or BVM, titrate to 94%.
2. Ventilate with BVM and OPA for bradypnea or ineffective respirations.
3. IV/IO, NS, TKO or saline lock.
4. Naloxone 0.4-2mg IV/IO, max 2mg,

OR

5. Naloxone 0.1 mg/kg IM or IN (half in each nostril), max 4 mg.

Titrate to normal respiration rate based on length based tape,
DO NOT titrate to level of consciousness or pupil size.

Considerations:

1. Ventilate patient prior to administration of Naloxone.
2. USE LOWEST DOSE OF NALOXONE AVAILABLE TO PREVENT WITHDRAWAL.
3. Preferred route is IV. However, if unable to start IV, IN and SL are acceptable.

Base Hospital Orders

1. Additional naloxone 2mg.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Naloxone Pediatric Dose Chart	
Weight KG/lbs.	**Dose**
5kg / 11lbs.	0.5mg
10kg / 22 lbs.	1.0mg
15kg / 33 lbs.	1.5.mg
20kg / 44 lbs.	2.0mg DO NOT EXCEED 2MG

Pediatric Organophosphates Exposure

Organophosphates are a group of chemicals that poison insects and mammals. Organophosphates are the most widely used insecticides today. They are used in agriculture, the home, gardens, and veterinary practice. Organophosphate work by damaging an enzyme acetylcholinesterase.

Definitions:

1. **Asymptomatic-** Patient has admitted or history reveals possibility of organophosphates Exposure but patient is showing no signs or symptoms.
2. **Symptomatic-** Patient has admitted or history reveals organophosphates exposure and patient is showing signs and symptoms related to organophosphates exposure, but is still hemodynamically stable.
3. **Grossly Symptomatic-** Patient has admitted or history reveals organophosphates Exposure and patient is showing signs and symptoms related to organophosphates Exposure, but is **NOT** hemodynamically stable.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain Scale.
   E. Physical assessment.
   F. Lung sounds.
3. If safe to identify:
   A. Chemical labels.
   B. Safety data sheet.
   C. Placards.
   D. Chemical type.
   E. Chemical amount.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Salivation. 2. Lacrimation. 3. Urination. 4. Defecation. 5. Gastrointestinal distress. 6. Emesis.	1. Agricultural setting. 2. Industrial setting. <u>Common Names</u> 1. Parathion. 2. Malathion. 3. Methyl parathion. 4. Chlorpyrifos. 5. Diazinon. 6. Dichlorvos. 7. Phosmet. 8. Fenitrothion. 9. Tetrachlorvinphos. 10. Azamethiphos. 11. Azinphos-methyl. 12. Terbufos.	1. Nerve agent exposure.

Pediatric Organophosphates Exposure or Ingestion

1. Avoid contamination.
2. Cardiac monitor.
3. Monitor SpO2, O2 if <94%, 1-15 LPM via NC or NRB, titrate to 94%.

Treatment #1- Asymptomatic:
1. Consider IV, NS, TKO.

Treatment #2- Mildly Symptomatic:
1. IV/IO NS, TKO.
2. If HR <100 bpm, atropine 0.05 mg/kg IV/IO every 5 minutes, max 4 mg.

Treatment # 3- Grossly Symptomatic:
1. IV/IO NS, TKO.

Atropine 0.05 mg/kg, every 5 minutes, max of 4 mg. Base hospital contact for further atropine.

Considerations:
1. Safety is top **PRIORITY**.
2. Patient must be grossly decontaminated prior to transport.
3. Patient must be fully decontaminated prior to entering ED.

Base Hospital Orders

1. Additional atropine beyond 4 mg Max dose.
2. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Nerve Agent Exposure

If *EMS Chempack* is deployed and atropine auto injectors, pralidoxime (2-Pam) auto linjectors, and are available they **MAY NOT BE USED** on **pediatrics**, diazepam can be used as outlined below:

1. Cardiac monitor.
2. Monitor SpO2, if <94% 1-15 LPM O2 via NC or NRB, titrate to 94%.
3. Consider IV/IO, NS, TKO.

If SBP is below length based treatment tape low value, lung sounds are clear and no fluid restrictions exist:

4. NS 20 ml/kg IVF bolus, may repeat x2. Titrate treatment tape low value.

Seizure activity:

5. Diazepam 0.1 mg/kg IV/IM, max total dose of 5mg.

OR

6. Diazepam 0.2 mg/kg IN (half in each nostril), max total dose of 5mg.
7. Atropine 0.05 mg/kg every 5 minutes, max of 4mg.
8. Do not administer 2-Pam auto injector.

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Pediatric General

Pediatric Brief, Resolved, Unexplained, Event

Brief, Resolved, Unexplained Event (BRUE) indicates an episode that is frightening to the observer (may think the infant has died). Occurs in a child younger than 1 year of age and lasts less than 1 minute. These events usually occur in infants less than 12 months old; however, any child less <2 years old who exhibits the symptoms listed below should still be evaluated for BRUE.

Definitions:

1. Must have resolved and patient back to baseline and has one or more of the following:
   A. Central cyanosis or pallor (discoloration of face, gums and/or trunk).
   B. Absent, decreased or irregular breathing.
   C. Marked change in tone (hypertonia or hypotonia).
   D. Altered level of responsiveness.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Lung sounds.
   F. Complete physical exam.
3. The general appearance of the child.
4. Skin color.
5. Extent of interaction with environment.
6. Evidence of trauma.
7. Medical history if any.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. Cyanosis or pallor. 2. Absent, decreased or irregular breathing. 3. Marked change in tone (hyper- or hypotonia). 4. Altered responsiveness 5. No explanation for the event after full history and exam.	1. Family history of sudden death. 2. Family history of infant death. 3. Born ≥32 weeks gestation 4. Post-conception age ≥45 weeks.	1. Hypoglycemia. 2. Seizure. 3. Poisoning. 4. Overdose. 5. Choking. 6. Arrhythmia. 7. Sepsis.

Pediatric Brief, Resolved, Unexplained, Event

Treatment

1. Consider Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. Assess capillary refill.

Consider and treat any identifiable causes:

4. Blood glucose level, if >70 mg/dL, see protocol PNRO-02.
5. For seizure activity see protocol PNRO-04.
6. For signs of shock see protocol PCAR-04.

Considerations:

1. Must have resolved and patient back to baseline
2. Assume the history given is accurate.
3. Consider and treat any identifiable causes.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Nausea

Nausea may be due to a viral illness (such as gastroenteritis), motion sickness, or medication side effects. It is important to remember that serious medical conditions also produce nausea or vomiting such as stroke, head injuries, toxic ingestions, bowel obstruction, appendicitis, and acute coronary syndrome. Generally, benign causes of nausea or vomiting do not have any associated pain complaints, or alterations in level of consciousness (LOC).

Definitions:

1. **Contraindications-** Known sensitivity to ondansetron or other 5-HT-3 antagonists e.g.: Granisetron (Kytril), Dolasetron (Anzamet), Palonosetron (Aloxi).

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose if history of diabetes.
   D. Pain scale.
   E. Physical assessment.
   F. Abdominal exam.
   G. Lung sounds.

Objective Findings:

Possible Signs & Symptoms	Comorbidities	Differentials
1. Nausea. 2. Vomiting. 3. Abdominal pain. 4. Diarrhea.	1. Gastritis. 2. Gastroenteritis.	1. Appendicitis. 2. Bowel obstruction.

Pediatric Nausea

Treatment #1- Persistent Mild Nausea:
1. Weight of 8-15 kg ondansetron 2 mg oral disintegrating tablet (ODT).
2. Weight >15 kg ondansetron 4 mg ODT.
3. Obtain blood glucose level.

Treatment #2- Persistent Moderate to Severe Nausea:
1. Cardiac monitor.
2. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
3. IV, NS, TKO.
4. Obtain blood glucose level.

5. Weight of 8-15kg ondansetron 2 mg IV over 1 minute.

OR

6. Weight >15kg ondansetron 4 mg IV over 1 minute.

Ondansetron 4mg, may be given via IO, **IF** IO is established for other treatments. An IO should not be established solely for the purpose of nausea treatment.

Considerations:
1. Rapid administration of ondansetron has been associated with syncope.
2. Rare side effects include headache, dizziness, tachycardia, sedation, or hypotension.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Pain Management

This protocol is intended for the treatment of pain associated with traumatic injuries, burns, or medical conditions that cause significant **ACUTE** pain or **SEVERE exacerbation** of chronic pain.

Definitions:

1. **Pain-** is a significantly unpleasant sensation, occurring in varying degrees of severity, due to injury, disease, or emotional distress.
2. **Max Single Dose (Max SD)**- is maximum medication given in one administration.
3. **Max total Dose (Max TD)-** is the most the patient can have overall without a base order
4. **Mild to Moderate pain-** Pain on movement, chronic pain, or pain that is managed with, positioning, ice, stabilization, or immobilization.
5. **Moderate to Severe Pain-** patient pain is unable to be managed with, positioning, ice, stabilization, or immobilization and patient is showing outward signs of being symptomatic secondary to pain. Symptoms may include guarding, grimacing at rest, tachycardia, tachypnea, hypertension, and diaphoresis, etc.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Lung sounds.

Objective Findings:

Possible signs and symptoms	Comorbidities	Differentials
1. Guarding. 2. Grimacing. 3. Deformity. 4. Swelling. 5. Diaphoresis. 6. Splinting.	1. Recent traumatic event. 2. Chronic pain.	1. Chronic pain exacerbation. 2. Complex regional pain. 3. Compartment syndrome. 4. Arterial occlusion. 5. Nerve injury.

Pain management medication guidelines:

Medication	Best use	Contraindications
Acetaminophen	Mild to moderate pain due	Allergy, Liver failure, ETOH intoxication
Ibuprofen		Currently taking ASA, or NSAID, GI Bleed, on blood thinners
Morphine	Visceral pain	Hypotension
Fentanyl	Somatic pain, patients with hypotension	GI obstruction,

Pediatric Pain Management

Treatment #1- Mild to Moderate:
1. Consider SpO2, if <94%, O2 1-6 LPM via NC, titrate to 94%.
2. Elevate as appropriate.
3. Ice as appropriate.
4. Position as appropriate.
5. Stabilize as appropriate.
6. Acetaminophen 15 mg/kg, PO, max 650 mg (withhold if had in last 4 hours).

OR

7. Ibuprofen 10mg/kg PO, max 400mg, do not give to children age <6 months old (withhold if had in last 6 hours).

Treatment #2- Moderate to Severe Pain:
1. Monitor SpO2, if <94% O2 1-15 LPM via NC or NRB, titrate to 94%.
2. IV/IO, NS, TKO.
3. Consider monitoring EtCO2.
4. If pain scale greater than 5 and symptomatic from pain, see dose chart below.

Considerations:
1. Treatment should not be based on pain scale alone, use objective signs to support
2. If SBP is low, consider fentanyl for pain management.
3. If pain scale greater than 5 and symptomatic from pain. An IO SHOULD NOT be established solely for the purpose of pain management. An IO may be utilized for pain management where indicated, only if IO was established for other treatments. (For example, a burn patient's IO that was established for fluid replacement may be also used for pain medications).

Morphine		
Burns, Trauma & Other	Max SD	Max TD
1. 0.1 mg/kg slow push IV/IO, every 5 minutes, **OR** 2. 0.1 mg/kg IM, every 30 minutes.	2 mg	10 mg
Fentanyl		
Trauma & Other	Max SD	Max TD
1. 1 mcg/kg slow push IV/IO, every 5 minutes, **OR** 2. 1 mcg/kg IN (half per nostril), every 5 minutes.	50 mcg	2 mcg/kg
Burn	Max SD	Max TD
1. 1 mcg/kg slow push IV/IO, every 5 minutes, **OR** 2. 1 mcg/kg IN (half per nostril), every 5 minutes.	50 mcg	3 mcg/kg

Base Hospital Orders

1. Medication dose above listed maximums.
2. In the presence of any finding listed below.
   A. Allergy or sensitivity to the medication being administered.
   B. SBP below length based treatment tape low value.
   C. Respirations less than 12.
   D. History of loss of consciousness.
   E. Decreased mental status.
   F. Pregnancy greater than 20 weeks.
3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Pediatric Patients from Out Patient Offices

This protocol is in place to allow paramedics on a 911/pre hospital call (Not to include IFT) to transport patients that may be currently under anesthesia or having an adverse reaction to out of hospital anesthesia, such as at dental offices or outpatient care facilities.

Definitions:

1. **Local anesthesia** - a type of pain prevention used during minor procedures to numb a small site where the pain is likely to occur without changing the patient's awareness.
2. **General anesthesia** - a medically induced coma with loss of protective reflexes, resulting from the administration of one or more general anesthetic agents.
3. **Nerve and regional blocks** - deliberate interruption of signals traveling along a nerve, often for the purpose of pain relief.
4. **Conscious sedation-** is a combination of medicines to help you relax (a sedative) and to block pain (an anesthetic) during a medical or dental procedure.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood Glucose.
   D. Pain Scale.
   E. Physical assessment.
   F. Lung sounds.
3. Type of anesthetic used.
4. Procedure being performed.
5. Reaction to anesthetic.
6. Treatments administered prior to arrival.
   A. Shock.
   B. Airway management.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. ALOC. 2. Unconscious. 3. Apneic. 4. Uncontrolled airway. 5. Patients that have received: A. Procedural sedation. B. Local anesthesia. C. General anesthesia.	1. Outpatient procedure. 2. Dental procedure. Possible Anesthetic Drugs: 1. Nitrous oxide. 2. Ativan. 3. Barbiturates: A. Amobarbital. B. Methohexital. C. Thiamylal. 4. Benzodiazepines: A. Diazepam. B. Lorazepam. C. Midazolam. 5. Etomidate. 6. Ketamine. 7. Propofol.	1. CVA/TIA. 2. Hypoglycemia. 3. Seizure.

Pediatric Patients from Out Patient Offices

Treatment

1. Cardiac monitor.
2. Monitor SpO2, if <94%, O2 1-15 LPM via NC/NRB/BVM, titrate to 94%.
3. Monitor EtCO2 if patient received any sedation or analgesic medications or if using an advanced airway or BVM.
4. Consider IV/IO, NS, TKO.
5. 12 lead ECG.
6. Obtain blood glucose level, if <70 mg/dL, see protocol PNRO-02.
7. If SBP is less than length based tape, lung sounds are clear and no fluid restrictions exist, see protocol PCAR-04.
8. If patient was administered narcotics and respirations are depressed, naloxone 0.4- 2mg IV/IN/IM/SL max 4 mg. Titrate to respiration of 12-20 per minute. **DO NOT** titrate to level of consciousness.

Considerations:

1. Secure airway as appropriate.
2. As soon as feasible, advise doctor on scene they may maintain care if they ride with you to ED and they do not delay transport.
3. Only the Base Hospital Physician can give field personal orders.
4. Contact the base hospital for any questions or concerns.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Sepsis

Sepsis is the body's overwhelming and life-threatening response to infection. When an infection occurs at any potential site in the body, the immune system's inflammatory response can be overwhelmed leading to SIRS (Systemic Inflammatory Response Syndrome) which causes tissue damage that can lead to organ dysfunction, failure and death.

Definitions:

1. **SIRS Criteria-**possible infection (abnormal WBC), fever, tachypnea, tachycardia or hypotension.
2. **Asymptomatic- DOES NOT** meet TWO or MORE SIRS criteria.
3. **Symptomatic-** Meets TWO or MORE SIRS criteria, hemodynamically stable and **ALOC.**
4. **Septic Shock-** Meets TWO or MORE SIRS criteria and is hemodynamically **UNSTABLE**.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose.
   D. Pain scale.
   E. Physical assessment.
   F. Temp.
   G. Lung sounds.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. SIRS Criteria: A. Temp: >100.4 F. or <96F. B. Tachycardia. C. Tachypnea. 2. Significantly decreased urine output. 3. Abrupt change in mental status. 4. Difficulty breathing. 5. Abdominal pain. 6. Identifiable infection.	1. Evidence of infection. 2. Clotting problems. 3. Abnormal liver or kidney function. 4. Impaired oxygen availability. 5. Electrolyte imbalances. Home Meds: 1. Antibiotics.	1. Pneumonia. 2. Abdominal infection. 3. Kidney infection. 4. Bloodstream infection (bacteremia).

Sepsis

1. Monitor SpO2, if <94%, O2 1-15 LPM via NC/NRB, titrate to 94%.

Treatment #1- Asymptomatic (fever only):
1. Consider cardiac monitor.
2. Acetaminophen 15 mg/kg PO, max dose 650 mg. (Withhold if had in last 4 hours)

Treatment #2- Symptomatic Meets TWO or more SIRS Criteria:
1. Cardiac monitor.
2. Consider 12 lead ECG.
3. Obtain blood glucose level, if >70 mg/dL, see protocol PNRO-02. If >200 mg/dL, see protocol PNRO-01.
4. If ALOC, see protocol PNRO-03.
5. IV, NS, TKO.
6. NS 20ml/kg IVF bolus. May repeat once for delayed capillary refill.
7. If fever and able to swallow acetaminophen 15 mg/kg PO, max single dose 650 mg. (Withhold if had in last 4 hours)

OR

8. If greater than 6 months old, Ibuprofen 10mg/kg PO, max dose 400 mg. (Withhold if had in last 6 hours)

Treatment #3- Shock meets two or more SIRS Criteria and Hemodynamically UNSTABLE:
1. Cardiac monitor.
2. Monitor EtCO2 if using a supraglottic airway or BVM.
3. Obtain blood glucose level, if >70mg/dL, see protocol PNRO-02. If >200 mg/dL, see protocol PNRO-01.
4. If ALOC, perform CPSS if positive, see protocol PNRO-03.
5. If fever and able to swallow acetaminophen 15 mg/kg, PO, max single dose 500mg. (Withhold if had in last 4 hours)
6. IV/IO, NS, TKO.
7. If SBP is below length based treatment tape low value, lung sounds are clear and no fluid restrictions exist NS 20ml/kg IVF bolus, may repeat twice if blood glucose level <200 mg/dL without base hospital order. Titrate to mental status, capillary refill and SBP.

Considerations:
1. If patient is in shock and does not meet TWO or more SIRS Criteria, see protocol PCAR-04.
2. **SIRS** Criteria:
   a. Temp: >100.4F or <96F.
   b. Tachycardia.
   c. Tachypnea.

~~To make **DILUTED** epinephrine:~~
~~Mix epinephrine 0.01mg/kg **1:10,000** to a total volume of 10ml with NS.~~

Base Hospital Orders

1. Additional NS 10ml/kg IVF bolus.
2. If SBP remains below Aged Based low value after fluids, epinephrine, 1 mcg/kg, IV/IO, every 3-5 minutes, titrate to normal age-based SBP.
~~2. DILUTED epinephrine 1mL IV/IO, every 3-5 minutes.~~

3. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

Agitation/Behavioral Emergency (PGEN-06)

Agitation or behavioral emergency is an acute, often severe disturbance in mood, thought, or behavior that poses an immediate risk of harm to the patient, others, or the environment, and requires urgent assessment and intervention.

Definitions:

1. Mild/moderate agitation: distressed or agitated but cooperative, able to engage, and willing to take oral medication.
2. Severe agitation: behavior creating an immediate or credible risk of physical harm to the patient, responders, or others.
3. Physical restraint is not required before medication when attempting restraint alone would create unnecessary risk.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose if history of diabetes.
   D. Pain scale.
   E. Physical assessment.
   F. Abdominal exam.

Objective Findings:

Signs & Symptoms	Comorbidities	Differentials
1. **Restlessness and motor agitation**: pacing, fidgeting, wringing hands, clenching fists, purposeless movements 2. **Emotional signs**: irritability, hostility, inner tension, difficulty focusing . 3. **Verbal behaviors**: excessive or pressured speech, rapid talking, difficulty following conversation 4. **Aggression**: verbal threats, physical assault, destruction of property, or violence toward others 5. **Self-harm risk**: self-injurious actions, suicidal gestures or statements **Altered mental status**: confusion, disorientation, hallucinations, delusions, or psychotic features	1. Cardiovascular disease, 2. Diabetes, 3. psychiatric illness 4. Withdrawal 5. Alzheimer's / Dementia	1. Alcohol intoxication 2. Epilepsy, Postictal 3. Hypoglycemia / Hyperglycemia 4. Overdose / Underdose 5. Uremia 6. Trauma 7. Infection 8. Psychosis 9. Shock

Agitation/Behavioral Emergency

*****All pharmaceutical management for patients under 18 require base hospital contact*****

Treatment #1 - Mild to Moderate Agitation

1. IF age is greater than 13 - Olanzapine ODT 5 mg PO.
2. May repeat 5 mg once after 20 minutes if agitation persists without adverse effects.
3. Obtain 12 Lead ECG if known long-QT, ventricular dysrhythmia, concerning syncope, QT-prolonging overdose, significant electrolyte-loss state, or evidence of dysrhythmia.

Contraindications for Olanzapine:

1. Violent behavior requiring immediate control.
2. Patient unwilling or unable to take oral medication.
3. Altered level of consciousness or suspected delirium.
4. Suspected medical, traumatic, or toxicologic cause.
5. Suspected alcohol, opioid, sedative-hypnotic, or other CNS-depressant intoxication.
6. Hypotension/shock or olanzapine hypersensitivity.

Considerations:

1. Goal is sufficient improvement for safe interaction and transport, not elimination of all psychiatric symptoms.
2. Olanzapine Medication should be offered **voluntarily**; it is not to be administered forcibly.

Treatment #2 - Severe Agitation

1. IF age is greater than 13, midazolam 2.5 mg IM, or IV/IO 2.5 mg SLOW push.
    a. If received olanzapine no repeat dose.
    b. If pt. did not receive olanzapine, may repeat in 10 min to a max total dose of 5 mg.
2. IF patient is >64 or is clinically frail, midazolam 2.5 mg IM, or 1 mg IV/IO.
    a. If pt did not receive olanzapine max total dose of 2.5 mg.

Considerations:

1. Do not administer midazolam IF respiratory depression, hypotension, or excessive sedation occur.
2. No mandatory waiting interval when an immediate safety threat develops.
3. Do not establish vascular access solely to administer midazolam when IM is safer and faster.
4. IN may be retained only as a secondary option when it can be administered safely and reliably.

Anticipate CNS/respiratory depression and hypotension.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.

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Interfacility Transport

Monitoring Mechanical Ventilators – ALS (IFT-01)

PURPOSE: The purpose of this protocol is to authorize paramedics to use and monitor preset mechanical ventilators during interfacility transport.

POLICY:

I. ALS Ambulance providers must apply to and be approved by the San Joaquin County EMS Agency (SJCEMSA) prior to initiating service to perform monitoring of preset mechanical ventilators during interfacility transports.

II. The monitoring of preset mechanical ventilators is restricted to San Joaquin County accredited paramedics that have successfully completed a training program approved by the SJCEMSA for the monitoring of preset mechanical ventilators during interfacility transports.

III. Patients that are candidates for paramedic transport will have preexisting mechanical ventilation established. Prehospital personnel may not initiate mechanical ventilator use.

IV. Preset Mechanical Ventilators

In accordance with the provisions of this policy, a paramedic may transport a patient who is on mechanical ventilation only when following these parameters:

A. A completed interfacility transfer form signed by the transferring physician must be obtained prior to transport.

B. The transferring physician must provide orders for maintaining mechanical ventilation during transport and certify that the patient is stable for transfer or that the benefits of transport outweigh the risks of transport.

C. Patient is placed on capnography, cardiac and pulse oximetry monitors and monitored continuously during transport.

D. Vital signs will be monitored and documented no less than every 10 minutes during patient transport.

E. Paramedics shall not make mechanical ventilator setting changes unless parameters of changes are outlined in the sending physician's orders.

F. If any complications related to mechanical ventilation arise during transport mechanical ventilation is to be discontinued and patient is to be ventilated with a bag valve mask.

G. If complications arise during transport and mechanical ventilation is stopped, transport shall be diverted to nearest emergency department.

V. Continuous Quality Improvement

All calls involving the transfer of patients with preexisting mechanical ventilation shall be reviewed through the ambulance provider's CQI program to determine compliance with policy and transferring physician orders. Findings and data will be submitted to the SJCEMSA quarterly.

Monitoring Potassium Chloride Infusions – ALS

PURPOSE: The purpose of this protocol is to authorize paramedics to monitor and adjust infusions of potassium chloride during interfacility transfers.

POLICY:

I. ALS Ambulance providers must apply to and be approved by the San Joaquin County EMS Agency (SJCEMSA) prior to initiating service to perform monitoring potassium chloride infusions during interfacility transports.

II. The monitoring of potassium chloride infusions is restricted to San Joaquin County accredited paramedics that have successfully completed a training program approved by the SJCEMSA for the monitoring of potassium chloride infusions during interfacility transports.

III. Patients that are candidates for paramedic transport will have preexisting potassium chloride infusions. Prehospital personnel may not initiate potassium chloride infusions.

IV. Potassium Chloride Infusions

In accordance with the provisions of this policy, a paramedic may transport a patient who has a preexisting intravenous (IV) solution containing potassium chloride only when following these parameters:

A. A completed interfacility transfer form signed by the transferring physician must be obtained prior to transport. The transferring physician must provide orders for maintaining the potassium chloride infusion during transport and certify that the patient is stable for transfer or that the benefits of transport outweigh the risks of transport.

B. Patient is placed on cardiac and pulse oximetry monitors and monitored continuously during transport.

C. Infusion rates shall be maintained as ordered by the transferring physician not to exceed 10mEq/hr max concentration of 40mEq/liter.

D. Fluid boluses and medications shall not be administered using the IV line infusing potassium chloride.

E. Vital signs will be monitored and documented no less than every 10 minutes during patient transport.

F. Monitor patient for adverse effects during transport including:
   1. Cardiovascular: dysrhythmias, cardiac arrest.
   2. Respiratory: depression, arrest.
   3. Gastrointestinal: nausea, vomiting, diarrhea, abdominal pain.
   4. Neurological: paresthesia of extremities, muscular paralysis, confusion.
   5. IV infiltration: monitor IV site as infiltration may cause necrosis. If patient complains of burning or irritation at the insertion site, the I.V. should be checked for patency and the infusion rate slowed or

discontinued.

V. Continuous Quality Improvement

All calls involving the transfer of patients with preexisting potassium chloride infusions shall be reviewed through the ambulance provider's CQI program to determine compliance with policy and transferring physician orders. Findings and data will be submitted to the SJCEMSA quarterly.

VI. General Information on Potassium Chloride

A. Potassium is an essential macromineral in human nutrition with a wide range of biochemical and physiological roles. Among other things, it is important in the transmission of nerve impulses, the contraction of cardiac, skeletal and smooth muscle, the production of energy, the synthesis of nucleic acids, the maintenance of intracellular tonicity and the maintenance of normal blood pressure.

B. Indications for the use of potassium chloride
   1. The treatment of potassium depletion in patients with hypokalemia when oral replacement is not feasible.
   2. Treatment of digitalis intoxication.

C. Contraindications:
   1. Renal impairment with oliguria or azotemia.
   2. Untreated Addison's disease.
   3. Hyperadrenalism associated with adrenogenital syndrome.
   4. Extensive tissue breakdown as in severe burns.
   5. Adynamia episodica hereditaria.
   6. Hyperkalemia of any etiology.

D. Precautions:
   1. Pregnancy.
   2. Chronic renal disease.
   3. Adrenal insufficiency.
   4. Any other condition which impairs potassium excretion.
   5. Potassium should be used with caution in diseases associated with heart blocks.

E. Adverse Effects:
   1. Fever.
   2. Venous thrombosis, infection at injection site.
   3. Extravasation, phlebitis, pain at injection site.
   4. Hypervolemia.
   5. Hyperkalemia.
   6. Abdominal pain.
   7. Nausea/Vomiting.
   8. Paresthesias of the extremities.
   9. ECG abnormalities.
   10. Mental confusion.
   11. Hypotension.

F. Interactions:

1. Cardiac arrest can occur with high potassium conditions, such as chronic renal failure, burns, acidosis, dehydration, and potassium sparing diuretic usage.
2. Drug interactions causing elevation of potassium can occur with ACE inhibitors (used to treat high blood pressure) and certain diuretics (aldactone and triamterene).

G. Standard Dosages for potassium chloride infusions:

1. For serum potassium level >2.5mEq/L an IV infusion is administered continuously at 10mEq/hr in a concentration up to 40mEq/L. With maximum dose of 200mEq per day.

Monitoring Heparin Infusions – ALS

PURPOSE: The purpose of this protocol is to authorize paramedics to monitor intravenous heparin infusions during interfacility transport.

POLICY:

I. ALS Ambulance providers must apply to and be approved by the San Joaquin County EMS Agency (SJCEMSA) prior to monitoring heparin infusions during interfacility transports.

II. The monitoring of heparin infusions is restricted to San Joaquin County accredited paramedics that have successfully completed a training program for monitoring heparin infusions and the use of infusion pumps.

III. Patients that are candidates for paramedic transport are limited to those with preexisting heparin infusions. Prehospital personnel may not initiate heparin infusions.

IV. Paramedics may restart heparin infusions if the heparin infusion is interrupted due to infiltration, accidental disconnection of the intravenous (IV) line, malfunctioning pump, etc. All lines must be restarted in accordance with the transferring physician's orders. Paramedics will ensure new IV line is patent prior to re-starting the infusion.

V. Heparin Infusions

The following parameters shall apply in all cases where paramedics transport patients with preexisting heparin drips:

A. Patient shall be placed on cardiac, blood pressure and pulse oximetry monitors and monitored continuously during transport.

B. A completed interfacility transfer form signed by the transferring physician must be obtained prior to transport. The transferring physician must provide orders for maintaining the heparin infusion during transport and certify that the patient is stable for transfer or that the benefits of transport outweigh the risks of transport.

C. Infusion fluid must be D5W, NS or ½ NS.

D. Medication concentration shall not exceed 100 units/ml of IV fluid or 50,000 units (e.g. 25,000 units/250ml or 50,000 units/500ml).

E. Infusion rates must remain constant during transport except for the discontinuation the infusion.

F. Infusion rates shall be maintained as ordered by transferring physician. Vital signs shall be monitored and documented every 15-20 minutes during transport.

VI. Continuous Quality Improvement

All calls involving the transfer of patients with preexisting heparin infusions shall be reviewed through the ambulance provider's CQI program to determine compliance with policy and transferring physician orders. Findings and data will be submitted to the SJCEMSA quarterly.

VII. General Information on Heparin

A. Heparin is an anticoagulant which acts to: prevent the conversion of fibrinogen to fibrin, prevent the conversion of prothrombin to thrombin, inactivate Factor X and enhance the inhibitory effects of antithrombin III.

B. Pharmacokinetics:

1. SC: Onset 20-60 minutes; duration 8-12 hours.
2. IV: Onset immediate; peak 5 minutes; duration 2-6 hours.
3. Metabolized in the liver and the spleen.
4. Excreted in urine.
5. Half-life of 1.5 hours.

C. Indications for the use of heparin:

1. In preventing additional clot formation or growth in DVT, MI, pulmonary embolism, DIC, stroke or arterial thrombosis.
2. Prophylactically to keep IV lines open (e.g. heparin flushes and locks).
3. Prophylactically before open heart surgery.
4. Prophylactically post DVT, PE and MI to prevent clotting.
5. Atrial fibrillation to prevent embolization.
6. As an anticoagulant in transfusion and dialysis.

D. Contraindications:

1. Allergy to heparin.
2. Bleeding disorders: hemophilia, etc.
3. Blood dyscrasias such as leukemia with bleeding.
4. Peptic ulcer disease.
5. Severe hypertension.
6. Severe hepatic disease.
7. Severe renal disease.
8. Subacute bacterial endocarditis.
9. Active bleeding from any site.

E. Precautions:

1. Pregnancy (class C).
2. Alcoholism (due to decreased liver function).
3. Elderly (due to decrease liver and renal function and increased injury capability).

F. Adverse Effects:

1. Hemorrhage from any site. May manifest as easy bruising, petechiae, epistaxis, bleeding gums, hemoptysis, hematuria, melena.
2. Fever and or chills (due to allergy).
3. Abdominal cramps, nausea, vomiting, diarrhea (due to allergy).
4. Anorexia (secondary to above).
5. Rash and or uticaria (due to allergy).

G. Interactions:

1. Oral anticoagulants (coumadin, warfarin) increase the actions of heparin.
2. Salicylates (aspirin) increase the actions of heparin.
3. Corticosteriods increase the actions of heparin.
4. Corticosteriods actions are decreased.
5. Dextran increases the action of heparin.
6. Nonsteriodal anti-inflammatory drugs (ibuprofen, Aleve, Midol, naprosyn, toradol, voltaren, feldene, indocin, clinoril) increase the actions of heparin.
7. Diazepam: Action increase by heparin.

H. Standard Dosages and Routes:

1. DVT/PE prophylaxis: 5,000 units subcutaneous every 8-12 hours.
2. Active Clot Suppression:
   a. Loading dose:
      i. Adult: 5000-7000 units IVP.
      ii. Child: 50-100 units/kg IVP.
   b. Maintenance:
      i. Adult: 1000-1600 units per hour IV titrated to PTT/ACT/INR level.
      ii. Child: 15-25 units per hour IV titrated to PTT/ACT/INR level.

I. Special Considerations:

1. Avoid IM injections or other procedures which may cause bleeding.
2. Overdoses are treated in hospital with protamine sulfate 1:1 solution (protamine is not authorized for paramedic use.)

Monitoring Nitroglycerin Infusions – ALS

PURPOSE: The purpose of this protocol is to authorize paramedics to monitor and adjust intravenous nitroglycerin infusions in adult patients during interfacility transport.

POLICY:

I. ALS Ambulance providers must apply to and be approved by the San Joaquin County EMS Agency (SJCEMSA) prior to monitoring nitroglycerin infusions during interfacility transports.

II. The monitoring of nitroglycerin infusions is restricted to San Joaquin County accredited paramedics that have successfully completed a training program approved by the SJCEMSA for monitoring nitroglycerin and the use of infusion pumps.

III. Patients that are candidates for paramedic transport are limited to those with preexisting nitroglycerin infusions. Prehospital personnel may not initiate nitroglycerin infusions.

IV. Paramedics may restart nitroglycerin infusions if the nitroglycerin infusion is interrupted due to infiltration, accidental disconnection of the intravenous (IV) line, malfunctioning pump, etc. All IV lines must be restarted in accordance with the transferring physician's orders. Paramedics will ensure new IV line is patent prior to restarting the infusion.

V. Nitroglycerin Infusions

The following parameters shall apply in all cases where paramedics transport patients with preexisting nitroglycerin drips:

A. Patient shall be placed on cardiac, blood pressure and pulse oximetry monitors and monitored continuously during transport.

B. A completed interfacility transfer form signed by the transferring physician must be obtained prior to transport. The transferring physician must provide orders for maintaining the nitroglycerin infusion during transport and certify that the patient is stable for transfer or that the benefits of transport outweigh the risks of transport.

C. Nitroglycerin infusions must be regulated by a mechanical intravenous infusion pump. If pump failure occurs and cannot be corrected, the paramedic will stop the nitroglycerin infusion and notify the transferring hospital.

D. Infusion fluid shall be D5W or NS.

E. Nitroglycerin infusion concentration shall be 25 mg/250ml or 50 mg/250ml.

F. Regulation of the drip rate will be within parameters as defined by the transferring physician, but in no case will changes be in greater than 5 mcg/minute increments every 10 minutes.
G. In cases of hypotension (SBP <90), the medication drip will be discontinued and the transferring hospital and base hospital will be notified.
H. Infusion rates shall be maintained as ordered by the transferring physician.
I. Vital signs shall be monitored and documented every 10 minutes during transport or every 5 minutes if an increase in the drip rate is ordered by the base physician.

VI. Continuous Quality Improvement

All calls involving the transfer of patients with preexisting nitroglycerin infusions shall be reviewed through the ambulance provider's CQI program to determine compliance with policy and transferring physician orders. Findings and data will be submitted to the SJCEMSA quarterly.

VII. General Information on Nitroglycerin

A. Nitroglycerin is a vasodilating agent that belongs to a group of drugs referred to as nitrates. Nitroglycerin acts to: relax vascular smooth muscle; vasodilate both arteries and veins (especially veins); increase venous pooling; decrease venous return to the heart; increase arterial relaxation; decrease systemic vascular resistance; decrease cardiac workload; decrease cardiac oxygen consumption; dilate the large coronary arteries; and lower diastolic more than systolic blood pressure.

B. Pharmacokinetics:
1. SL: Onset 1-3 minutes; duration 30 minutes.
2. Transdermal (patch): Onset 0.5 - 1 hour; duration 12-24 hours.
3. Transdermal (ointment): Onset 0.5-1 hour; duration 2-12 hours.
4. PO (sustained release): Onset 20-40 minutes; duration 3-8 hours.
5. IV: Onset usually immediate; duration is variable.
6. Metabolized by the liver.
7. Excreted in urine.
8. Half-life of 1-4 minutes.

C. Indications for the use of Nitroglycerin
1. Sublingual:
   a. Relief of acute anginal pain or related ischemic symptoms.
   b. Congestive Heart Failure (CHF) to decrease myocardial workload.
2. Intravenous:
   a. Diagnosed MI or unstable angina pectoris, even in the absence of chest pain, to decrease myocardial workload.

b. Relief of persistent ischemic chest pain that does not respond to other medications.
c. Hypertension when associated with diagnosed MI or unstable angina pectoris (not used solely for blood pressure control).

D. Contraindications:
1. Allergy to nitrates.
2. Increased intracerebral pressure such as in cases of stroke, head trauma or intracerebral bleeding.
3. Hypotension.
4. Hypovolemia.
5. Treatment of hypertension without progressively worsening signs of organ damage, ischemia or neurologic deficit.

E. Precautions:
1. Pregnancy.
2. Glaucoma patients (can increase intraocular pressure).
3. Lactation (fetal effects in animal studies).
4. May require decreased dosing in patients with liver disease.

F. Adverse Effects:
1. Hypotension.
2. Headache (from vasodilation).
3. Dizziness and syncope (from hypotension).
4. Nausea/Vomiting.
5. Tachycardia (in response to hypotension).
6. Paradoxical bradycardia (in rare instances).
7. Pallor, sweating (from hypotension).
8. Flushing, sweating (from vasodilation).
9. Rash, if allergic to nitrates.

G. Interactions:
1. Alcohol combined with nitroglycerin can worsen hypotension.
2. Aspirin can increase serum nitrate concentrations.
3. Calcium channel blockers combined with nitroglycerin can worsen orthostatic hypotension.
4. ß-blockers, diuretics (anti-hypertensives) can increase actions of nitroglycerin.

H. Standard Dosages for Nitroglycerin drips:
1. For diagnosed patients with ischemic symptoms:
a. Continuous IV Infusion: starting at 10-20 mcg/min and increased by 5 or 10 mcg every 5-10 minutes until the desired hemodynamic or clinical response is achieved. Most patients respond to 50-200 mcg/min and the lowest possible

dose should be used. When indicated, rates should be decreased in 10 minute intervals.

I. Special Considerations:
   1. Glass infusion bottles and non-polyvinyl tubing must be used as plastics will absorb nitroglycerin and alter the dose administered.
   2. Do not use in-line filters.
   3. Attach drip to port closest to catheter insertion.

Sedation of Intubated Patients during ALS Interfacility Transfer

PURPOSE: The purpose of this protocol is to authorize paramedics to use midazolam for sedation of intubated patients during interfacility transfers.

POLICY:

I. ALS Ambulance providers must apply to and be approved by the San Joaquin County EMS Agency (SJCEMSA) prior to initiating service to use midazolam for sedation of intubated patients during interfacility transports.

II. The use of midazolam for sedation of intubated patients is restricted to San Joaquin County accredited paramedics that have successfully completed a training program approved by the SJCEMSA for the use of midazolam for sedation of intubated patients during interfacility transports.

III. Patients that are candidates for paramedic transport will have preexisting sedation. Prehospital personnel may not initiate midazolam for sedation of intubated patients.

IV. Procedure:
- A. Inclusion Criteria:
  1. Patient with advanced airway, 20 minutes or longer after RSI.
- B. Exclusion Criteria:
  1. Unstable Patients
     - a. Pulse <50 or >100 bpm
     - b. SBP <100 or >200
     - c. DBP <50 or >100
     - d. Patient sedation unable to be managed with only midazolam.
  2. Place patient in soft restraints.
  3. Monitor and document:
     - a. ECG.
     - b. Pulse Oximetry.
     - c. Capnography.
     - d. Blood pressure every 5 minutes.
     - e. Heart Rate every 5-10 minutes.
- C. Max allowable dose 0.01mg/kg IV/IO Every 10 minutes.

VI. Continuous Quality Improvement

All calls involving the transfer of patients with midazolam use for sedation of intubated patients during interfacility transports, shall be reviewed through the ambulance provider's CQI program to determine compliance with policy and transferring physician orders. Findings and data will be submitted to the SJCEMSA quarterly.

Monitoring Magnesium Sulfate Infusions – ALS

PURPOSE: The purpose of this protocol is to authorize paramedics to monitor magnesium sulfate Infusions during interfacility transfers.

POLICY:

I. ALS Ambulance providers must apply to and be approved by the San Joaquin County EMS Agency (SJCEMSA) prior to initiating service to monitor magnesium sulfate during interfacility transports.

II. Monitoring magnesium sulfate infusions is restricted to San Joaquin County accredited paramedics that have successfully completed a training program approved by the SJCEMSA to monitor magnesium sulfate during interfacility transports.

III. Patients that are candidates for paramedic transport will have preexisting sedation. Prehospital personnel may not initiate magnesium sulfate infusion.

IV. Procedure:
- A. Patient shall be placed on cardiac, blood pressure and pulse oximetry monitors and monitored continuously during transport.
- B. A completed interfacility transfer form signed by the transferring physician must be obtained prior to transport. The transferring physician must provide orders for maintaining magnesium sulfate infusions during transport and certify that the patient is stable for transfer or that the benefits of transport outweigh the risks of transport.
- C. Magnesium sulfate infusions must be regulated by a mechanical intravenous infusion pump. If pump failure occurs and cannot be corrected, the paramedic will stop the magnesium sulfate infusions infusion and notify the transferring hospital.
- D. Regulation of the drip rate will be within parameters as defined by the transferring physician, with a max of 2g per hour.
- E. Infusion rates shall be maintained as ordered by the transferring physician.
- F. Vital signs shall be monitored and documented every 10 minutes during transport.

VII. <u>General information on magnesium sulfate Infusions</u>
- A. Mechanism of Action
  1. Depresses CNS, blocks peripheral neuromuscular transmission, produces anticonvulsant effects; decreases amount of acetylcholine released at end-plate by motor nerve impulse.
  2. Slows rate of SA node impulse formation in myocardium and prolongs conduction time.
  3. Promotes movement of calcium, potassium, and sodium in and out

of cells and stabilizes excitable membranes.

4. Promotes osmotic retention of fluid in colon, causing distention and increased peristaltic activity, which subsequently results in bowel evacuation.

B. Absorption:
   1. Onset (anticonvulsant): IV, immediate; IM, 1 hr.
   2. Duration (anticonvulsant): IV, 30 min; IM, 3-4 hr.

C. Contraindications:
   1. Hypersensitivity.
   2. Myocardial damage, diabetic coma, heart block.
   3. Hypermagnesemia.
   4. Hypercalcemia.

D. Cautions:
   1. Fetal skeletal demineralization, hypocalcemia, and hypermagnesemia abnormalities reported with continuous long-term use (e.g. longer than 5-7 days) for off-label treatment of preterm labor in pregnant women; the effect on the developing fetus may result in neonates with skeletal abnormalities.
   2. In patients with renal impairment, ensure that renal excretory capacity is not exceeded.
   3. Use with caution in digitalized patients.
   4. Use with extreme caution in patients with myasthenia gravis or other neuromuscular disease.
   5. Hypomagnesemia is usually associated with hypokalemia (potassium levels must be normalized).

VIII. Continuous Quality Improvement

All calls involving the transfer of patients with magnesium sulfate during interfacility transports, shall be reviewed through the ambulance provider's CQI program to determine compliance with policy and transferring physician orders. Findings and data will be submitted to the SJCEMSA quarterly.

Abbreviations Glossary

A

AC – Antecubital

ALOC- Altered level of consciousness

AMA- Against medical advice

AMI- Acute myocardial infarction

ASA- Acetylsalicylic Acid

B

BP- Blood pressure

BRUE – Brief resolved unexplained event

BVM- Bag valve mask

C

CHF- Congestive heart failure

CL- Cormack Lehane

COPD- Chronic obstructive pulmonary disease

CPAP- Continuous positive airway pressure

CPSS- Cincinnati pre hospital stroke scale

CVA- Cerebral vascular accident

D

DKA- Diabetic ketone acidosis

DVT- Deep vein thrombosis

E

ECG- Electrocardiogram

ED- Erectile dysfunction

EJ- External jugular

ECG- Electrocardiogram

ESRD- End stage renal disease

ETCO2- End tidal carbon dioxide

ETOH- Alcohol

F

G

GCS- Glasgow coma scale

H

HD- Hemodialysis

HR- Heart rate

HTN- Hypertension

HHNK- Hyperosmolar hyperglycemic nonketotic

I

ICP- Intra cranial pressure

IFT- Inter facility transfer

IM -Intramuscular

IN- Intranasal

IV- Intravenous

IVF- Intravenous Fluid

IO- Intraosseous

J

JVD- Jugular venous distention

K

KG- Kilogram 2.2 pounds = 1KG

L

LKWT- Last known well time

LPM- Liters per minute

M

MAP- Mean arterial pressure

MS- Morphine sulfate

MSDS- Material safety data sheet

N

NC- Nasal cannula

NRB- Non-rebreather mask

NS- Normal saline

NTG- Nitroglycerine

O

O2- Oxygen

OD- Overdose

ODT- Orally dissolving tablet

OPA- Oropharyngeal airway

P

PCN- Penicillin

PEA- Pulseless electrical activity

PO- Administered orally

PPV- Positive pressure ventilation

PSC- Primary stroke center

PTA- Prior to arrival

Q

QRS- is a name for the combination of three of the graphical deflections seen on a typical electrocardiogram

R

RACE- Rapid arterial occlusion evaluation

RLS- Red lights and sirens

ROSC- Return of spontaneous circulation

RR- Respirations

RVR- Rapid ventricular response

S

SIRS- Systemic inflammatory response syndrome

SL- Sub lingual

SOB- Shortness of breath

SpO2- Pulse oximetry

SRC- STEMI receiving center

SVT- Supraventricular tachycardia

T

TBSA- Total body surface area

TCA- Tricyclic antidepressants

TIA- Transient ischemic attack

TKO- To keep open

U

V

VAD- Ventricular Assist device

VT- Ventricular tachycardia

W

WBC- White blood cell

WO- Wide open

X

Y

Z

Agitation/Behavioral Emergency (AGEN-05)

Agitation or behavioral emergency is an acute, often severe disturbance in mood, thought, or behavior that poses an immediate risk of harm to the patient, others, or the environment, and requires urgent assessment and intervention.

Definitions:

1. Mild/moderate agitation: distressed or agitated but cooperative, able to engage, and willing to take oral medication.
2. Severe agitation: behavior creating an immediate or credible risk of physical harm to the patient, responders, or others.
3. Physical restraint is not required before medication when attempting restraint alone would create unnecessary risk.

Documentation Standards:

1. Every 5 minutes for unstable patients, every 15 minutes for stable patients:
   A. BP.
   B. Respirations.
   C. Pulse.
2. If performed, before and after intervention or if condition changes:
   A. ECG.
   B. SpO2.
   C. Blood glucose as soon as safely feasible, regarding of diabetes history.
   D. Pain scale.
   E. Physical assessment.
   F. Abdominal exam.

Objective Findings:

Possible Signs and Symptoms	Comorbidities	Differentials
1. **Restlessness and motor agitation**: pacing, fidgeting, wringing hands, clenching fists, purposeless movements 2. **Emotional signs**: irritability, hostility, inner tension, difficulty focusing . 3. **Verbal behaviors**: excessive or pressured speech, rapid talking, difficulty following conversation 4. **Aggression**: verbal threats, physical assault, destruction of property, or violence toward others 5. **Self-harm risk**: self-injurious actions, suicidal gestures or statements 6. **Altered mental status**: confusion, disorientation, hallucinations, delusions, or psychotic features	1. Cardiovascular disease, 2. Diabetes, 3. psychiatric illness 4. Withdrawal 5. Alzheimer's / Dementia	1. Alcohol intoxication 2. Epilepsy, Postictal 3. Hypoglycemia / Hyperglycemia 4. Overdose / Underdose 5. Uremia 6. Trauma 7. Infection 8. Psychosis 9. Shock

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Agitation/Behavioral Emergency

Treatment #1 - Mild to Moderate Agitation – Voluntary Oral Medication

1. For cooperative adults aged 18-64 with suspected psychiatric agitation who voluntarily accept medication and can swallow safely: Olanzapine ODT 5mg PO once.
2. Obtain 12 Lead ECG as soon as safely feasible.

Contraindications for Olanzapine:

1. Violent behavior requiring immediate control.
2. Patient unwilling or unable to take oral medication.
3. Altered level of consciousness or suspected delirium.
4. Suspected medical, traumatic, or toxicologic cause.
5. Suspected alcohol, opioid, sedative-hypnotic, or other CNS-depressant intoxication.
6. Hypotension/shock or olanzapine hypersensitivity.

Considerations:

1. Goal is sufficient improvement for safe interaction and transport, not elimination of all psychiatric symptoms.
2. Olanzapine Medication should be offered **voluntarily**; it is not to be administered forcibly.
3. Refusal of oral medication, verbal hostility or transport inconvenience alone does not justify escalation to midazolam.
4. Olanzapine is not to be administered with ondansetron due to risk of QTc prolongation.

Treatment #2 – Severe, Dangerous Agitation

1. IF age is between 18 and 64, midazolam 2.5 mg IM, or IV 2.5 mg SLOW push.
    a. No repeat dose under standing orders if patient has already been given Olanzapine. Contact Base for persistent dangerous agitation.
    b. If pt. did not receive olanzapine, may repeat in 10 min if persistent agitation to a max total dose of 5 mg.
2. IF patient is >64 midazolam 2.5 mg IM, or 1 mg IV.
    a. No midazolam should be given if patient already received Olanzapine. Contact Base.

Considerations:

1. Do not administer midazolam IF respiratory depression, hypotension, or excessive sedation occur.
2. No fixed waiting interval is required before the initial midazolam rescue dose following oral olanzapine when an immediate safety threat develops. This does not waive midazolam repeat-dose intervals or reassessment requirements.
3. Do not establish vascular access solely to administer midazolam when IM is safer and faster.
4. Anticipate CNS/respiratory depression and hypotension.

Base Hospital Orders

1. Consult Base Hospital if additional orders are needed or patient has atypical presentation.
2. After oral olanzapine, repeat dose of midazolam is not permitted under standing orders and requires a Base Hospital Order.
3. Olanzapine 2.5mg PO once for eligible patients >65 who voluntarily accept medication and can swallow safely.

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SAN JOAQUIN COUNTY
EMERGENCY MEDICAL SERVICES AGENCY

TITLE: EMS Patient Care Record Access and Data Requirements EMS Policy No. 6302

PURPOSE:

The purpose of this policy is to establish access and submission requirements for patient care record data and information by Service Providers.

AUTHORITY:

Health and Safety Code, Division 2.5, Section 1797.220; 1797.227; California Code of Regulations, Title 22, Sections 100062, 100128, and 100170.

DEFINITIONS: See SJCEMSA Policy Definitions

~~A. "Service Provider" means any and all entities providing ambulance, air ambulance, non-transport advanced life support, and non-transport basic life support in San Joaquin County.~~

POLICY:

I. Patient Care Record Data and ePCR System Requirements:
   A. Service Providers shall use an electronic Patient Care Record system that is compliant with Health and Safety Code, Division 2.5, Section 1797.227, and:
      1. Capable of exporting data in a format that is compliant with current required versions of the California Emergency Medical Services Information System (CEMSIS) and the National Emergency Medical Services Information System (NEMSIS) standards.
      ~~2. Health Level 7 (HL7) compatible.~~
      2. Includes the NEMSIS and CEMSIS CAD data elements.
      3. Includes any additional SJCEMSA data requirements and validation rules.
      ~~3.~~4. ~~Ability to f~~Fully integrates with other SJCEMSA required data systems, including the functionality to exchange electronic patient health information with other entities including hospitals.

   B. ePCR Platform Access Minimum Requirements:
      1. Service Providers shall provide SJCEMSA with remote web access to view individual ePCRs for each patient contact within San Joaquin County using a web-based ePCR viewer. Such access shall at minimum:
         a. Allow SJCEMSA full review of each ePCR in all its stages of completion prior to and after submission, and;

Approved:

Medical Director

EMS Administrator

b. Include the ability to search and review each ePCR based upon common data elements such as, but not limited to, the incident number, date range, location, unit ID, and patient demographics.

2. Service Providers shall provide SJCEMSA with training on the ePCR system vendor platform, which shall include training to create customized reports.

C. ePCR System Integration & Compliance:

1. Service Providers shall ensure that their ePCR system is fully integrated with the SJCEMSA's ePCR data ~~warehouse~~ repository system to ensure real-time submission of all ePCR data.

~~1.~~2.

D. ePCR Submission and Completion Requirements:

1. Service Providers shall submit completed ePCRs to the SJCEMSA ~~portal~~ repository from each 24-hour period by no later than the following day at 1500 hours.
2. An ePCR is considered to be completed when it:
   a. Is accurate and includes all data required by CEMSIS, NEMSIS, and SJCEMSA, and;
   b. Is submitted and available for view to hospitals according to SJCEMSA policy.
3. Descriptive values shall be used with minimal use of not and null values. The use of not and null values must be limited only to situations where no other value is appropriate for documentation.

~~E. Service Providers ePCR system must be capable of capturing and accurately reporting the data elements specified in the California EMS Authority's California EMS System Core Measures Instruction Manual 9th Edition June 2021, hereby adopted by reference.~~

II. Patient Care Documentation:

A. Service Providers shall ensure the completion of an ePCR for every patient contact.

1. The highest medically qualified ~~care-giver~~caregiver for a non-transport Service Provider shall be responsible to ensure the completion of an ePCR in all cases in which non-transport personnel perform the following:

Approved:

Medical Director

EMS Administrator

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a. Assists with, provides care to, or evaluates a person/patient, or;
b. Determine that a request for medical assistance has been made by someone on behalf of the person/patient, or;
c. Determine that the person/patient appears to need medical assistance, evaluation, or care.

2. The highest medically qualified ~~care-giver~~caregiver for an ambulance or air ambulance service provider shall ensure the completion of an ePCR in all cases in which a member of the ambulance or air ambulance crew:
a. Assists with, provides care to, or evaluates a person/patient, or;
b. Determines that a request for medical assistance has been made by someone on behalf of the person/patient, or;
c. Determines that the person/patient appears to need medical assistance, evaluation, or care.

~~B. ePCR Documentation Completion Timeline Requirement:~~

~~1. Service Providers shall ensure that designated personnel complete and submit each ePCR within 45 minutes of patient transfer completion unless delayed due to the necessity of responding to a pending emergency incident.~~

~~2. All ePCRs must be completed by designated personnel prior to the end of each shift.~~

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