

Santa Barbara County

PUBLIC Health



D E P A R T M E N T



POLICY 533

**BLS, EMT OPTIONAL SCOPE, AND
ALS TREATMENT PROTOCOLS**

March 2020

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EMS MEDICAL DIRECTOR**



SANTA BARBARA COUNTY EMS BLS, EMT OPTIONAL SCOPE, AND ALS TREATMENT PROTOCOLS

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Santa Barbara County General Patient Guidelines

- I. Purpose: To establish a consistent approach to patient care
 - A. Initial response
 1. Review dispatch information with crew members and dispatch center as needed
 2. Consider other potential issues (location, time of day, weather, etc.)
 - B. Scene arrival and Size-up
 1. Address Body Substance Isolation/Personal Protection Equipment (BSI/PPE)
 2. Evaluate scene safety
 3. Determine the mechanism of injury (if applicable) or nature of illness
 4. Determine the number of patients
 5. Request additional help if necessary
 6. Consider spinal precautions (refer to [Policy 533-25: Spinal Trauma](#))
 - C. Initial assessment
 1. Circulation
 - a. Assess skin color, temperature, and condition
 - b. Check distal/central pulses, including capillary refill time
 - c. Control major bleeding
 - d. Initiate shock management as indicated
 2. Airway
 - a. Open airway as needed, maintaining inline cervical stabilization if trauma is suspected
 - b. Insert appropriate airway adjunct if indicated
 - c. Suction airway if indicated
 - d. If a partial or complete Foreign Body Airway Obstruction (FBAO) is present, utilize appropriate interventions
 3. Breathing
 - a. Assess rate, depth, and quality of respirations
 - b. Assess lung sounds
 - c. If respiratory effort inadequate, assist ventilations with BVM
 - d. Initiate airway management and oxygen therapy as indicated

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4. Disability
 - a. Determine level of consciousness
 - b. Assess pupils
 - c. Assess Circulation, Sensory, Motor (CSM)
 5. Exposure
 - a. If indicated, remove clothing for proper assessment/treatment of injury location. Attempt to maintain patient dignity
 - b. Maintain patient body temperature at all times, utilize adjunct methods as needed.
 - D. Determine Chief Complaint. Initiate treatment per Santa Barbara County policies/protocols
 - II. History of Present Illness (HPI) – including pertinent negatives and additional signs/symptoms
 - A. Onset of current illness or chief complaint
 - B. Provoking factors
 - C. Quality
 - D. Radiation
 - E. Severity – 1 to 10 on pain scale (or pediatric pain scale)
 - F. Time
 - III. Vital Signs
 - A. Blood pressure in mmHg (at least one of which is auscultated) and capillary refill
 - B. Heart rate
 - C. Respirations
 - D. Pain – Use Numeric, FACES or FLACC scale as age appropriate
 - E. ALS assessments shall include:
 1. Cardiac rhythm
 2. 12-lead ECG as indicated per [Policy 539: 12-lead ECG](#)
 3. Pulse Oximetry
 4. Capnography (after advanced airway placement and CPAP placement)
 5. *If documenting an abnormal vital sign(s), repeat as appropriate and document action taken*
 - IV. Obtain history, including pertinent negatives
 - A. HPI
 - B. Past medical history
 - C. Medications
 - D. Allergies

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- E. Do not leave these areas blank in documentation; if information is not known or available, utilize an appropriate null data entry choice.
- V. Perform Trauma assessment as appropriate.
- A. Rapid trauma survey
1. Airway
 - a. Maintain inline cervical stabilization
 - b. Follow spinal precautions per EMS [Policy 533-25: Spinal Trauma](#)
 - c. Open airway as needed
 - d. Utilize a trauma jaw thrust to maintain inline cervical stabilization if indicated
 - e. Suction airway if indicated
 2. Breathing
 - a. Assess rate, depth and quality of respirations
 - b. If respiratory effort inadequate, assist ventilations with BVM
 - c. Insert appropriate airway adjunct if indicated
 - d. Assess lung sounds
 - e. Initiate airway management and oxygen therapy as indicated
 - f. Goal to maintain SpO₂ ≥ 95%
 3. Circulation
 - a. Assess skin color, temperature, and condition
 - b. Check distal/central pulses and capillary refill time
 - c. Control major bleeding
 - d. Initiate shock management as indicated
 4. Disability
 - a. Determine Glasgow Coma Scale - level of consciousness. Refer to [Appendix B](#)
 - b. Assess pupils
 5. Exposure
 - a. If indicated, remove clothing for proper assessment/treatment of injury location.
 - b. Maintain patient dignity
 - c. Maintain patient body temperature



-
- VI. Base Hospital contact shall be made for all required patients in accordance with [Policy 303: Mandatory Base Hospital Communications](#)
- VII. Transport to appropriate facility per the appropriate policy
- A. [Transport and Destination Guidelines – Policy 622](#)
 - B. [STEMI Receiving Center Standards – Policy 640](#)
 - C. [Post cardiac arrest with ROSC – Policy 539](#)
 - D. [Trauma Triage and Destination Criteria – Policy 510](#)
 - E. [Hospital Diversion – Policy 620](#)
- VIII. Continuously monitor vital signs and document all findings. Continue appropriate treatments and reassess throughout transport to assess for changes in patient status
- IX. Documentation
- A. Completion of patient care documentation per [Policy 701: Electronic Patient Care Report Documentation](#)
 - B. Document all assessment findings, pertinent negatives, vital signs (including a turnover of care set of vital signs), interventions/treatments (both initial and ongoing), responses to treatments, and all changes in patient status.
 - C. Submit ECG strips for all ALS patients and all 12-lead ECG reports.
 - D. Maintain patient confidentiality at all times.



AIRWAY MANAGEMENT	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Open and position the airway • For foreign body airway obstruction: BLS choking Procedures • Airway adjuncts: OPA/NPA as needed to control airway • Oropharyngeal suctioning via tonsil-tip catheter • Oxygen via selected device to maintain SpO₂ at >94% <ul style="list-style-type: none"> ▪ Nasal Cannula 2-6 LPM ▪ Non-rebreather mask 10-15 LPM ▪ Bag-valve ventilations 10 breaths/min as needed • Initiate CPAP for moderate to severe distress <ul style="list-style-type: none"> ▪ 10cm H₂O ▪ If patient unable to tolerate 10 cm H₂O, may reduce to 5cm H₂O • For suspected spinal injuries, ventilate while maintaining in-line cervical stabilization 	<ul style="list-style-type: none"> • Open and position the airway • For foreign body airway obstruction: BLS choking Procedures • Airway adjuncts: OPA/NPA as needed to control airway • Oropharyngeal suctioning via tonsil-tip catheter • Oxygen via selected device to maintain SpO₂ at >94% <ul style="list-style-type: none"> ▪ Nasal Cannula 2-6 LPM ▪ Non-rebreather mask 10-15 LPM ▪ Bag-valve ventilations 12-20 breaths/min as needed (20-30 for infants.). • Consider CPAP if 3 years old or greater and in severe distress <ul style="list-style-type: none"> ▪ 5cm H₂O • For suspected spinal injuries, ventilate while maintaining in-line cervical stabilization
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • For foreign body airway obstruction refractory to BLS choking procedures, laryngoscopy to visualize and remove foreign body using Magill forceps • Initiate CPAP for moderate to severe distress <ul style="list-style-type: none"> ▪ 10cm H₂O ▪ If patient unable to tolerate 10 cm H₂O, may reduce to 5cm H₂O • Endotracheal intubation or EMS approved supraglottic airway device as needed to control the airway <ul style="list-style-type: none"> ▪ Refer to Policy 532: Endotracheal Intubation ▪ Refer to Policy 546: AirQsp • If unable to intubate after two attempts (of not more than 20 seconds each), or endotracheal intubation is otherwise contraindicated, or paramedic believes may be difficult or delayed, insert the approved alternative airway or maintain BLS airway • Endotracheal tube suctioning with suction catheter (no more than 15 seconds per attempt) • Needle Thoracostomy procedure to be utilized only to relieve a tension pneumothorax. <ul style="list-style-type: none"> ▪ Refer to Policy 536: Needle Thoracostomy 	<ul style="list-style-type: none"> • For foreign body airway obstruction refractory to BLS choking procedures, laryngoscopy to visualize and remove foreign body using Magill forceps • Consider CPAP if 3 years old or greater and in severe distress. <ul style="list-style-type: none"> ▪ 5cm H₂O • Consider endotracheal intubation as needed to control the airway <ul style="list-style-type: none"> ▪ Patient must be 12 years of age or greater for intubation <ul style="list-style-type: none"> ♦ Refer to Policy 532: Endotracheal Intubation • For patients aged 3 or greater with symptomatic tension pneumothorax: <ul style="list-style-type: none"> ▪ Needle Thoracostomy. <ul style="list-style-type: none"> ♦ Refer to Policy 536: Needle Thoracostomy

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Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • The following are signs and symptoms of tension pneumothorax may be present: <ul style="list-style-type: none"> ▪ Altered level of consciousness ▪ Decreased BP ▪ Increased HR and RR ▪ Absent breath sounds on affected side ▪ Hyperresonance to percussion on the affected side ▪ Jugular vein distension ▪ Increased dyspnea or difficulty ventilating ▪ Tracheal shift away from affected side (often difficult to assess) 	<ul style="list-style-type: none"> • The following are signs and symptoms of tension pneumothorax may be present: <ul style="list-style-type: none"> ▪ Altered level of consciousness ▪ Decreased BP ▪ Increased HR and RR ▪ Absent breath sounds on affected side ▪ Hyperresonance to percussion on the affected side ▪ Jugular vein distension ▪ Increased dyspnea or difficulty ventilating ▪ Tracheal shift away from affected side (often difficult to assess)



PAIN CONTROL	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> Place patient in position of comfort Administer oxygen as indicated Assess pain using numeric pain scale 	<ul style="list-style-type: none"> Place patient in position of comfort Administer oxygen as indicated Assess pain using FACES or FLACC pain scale
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Vascular access Cardiac Monitor <p>If nausea/vomiting is present, refer to Policy 533-15: Nausea/Vomiting</p> <ul style="list-style-type: none"> Fentanyl <ul style="list-style-type: none"> MODERATE or SEVERE PAIN with SBP \geq 100 mmHg, unimpaired respirations and GCS normal for baseline: <ul style="list-style-type: none"> IV/IO – 1mcg/kg SLOW (over 1 min) <ul style="list-style-type: none"> Max single dose 100mcg May repeat every 5 minutes Not to exceed 200mcg total dose IM – 1mcg/kg, not to exceed 100mcg <ul style="list-style-type: none"> May repeat after 15 minutes Not to exceed 200mcg total dose <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Ketamine <ul style="list-style-type: none"> MODERATE or SEVERE PAIN refractory to fentanyl or when fentanyl is contraindicated*: <ul style="list-style-type: none"> IV/IO – 0.3mg/kg in 100mL normal saline IVPB over 5 minutes <ul style="list-style-type: none"> Max dose 30mg May repeat x1 in 10 minutes Contraindications* for Ketamine: <ul style="list-style-type: none"> GCS <14 Suspected or Confirmed Pregnancy Suspected Acute Coronary Syndrome Known or suspected alcohol or drug intoxication Known allergy or anaphylaxis <p style="text-align: center;">(continued on next page)</p> 	<ul style="list-style-type: none"> Vascular access Cardiac Monitor <p>If nausea/vomiting is present, refer to Policy 533-15: Nausea/Vomiting</p> <ul style="list-style-type: none"> Fentanyl <ul style="list-style-type: none"> MODERATE or SEVERE PAIN with SBP \geq 100 mmHg, unimpaired respirations and GCS normal for baseline: <ul style="list-style-type: none"> IV/IO – 1mcg/kg SLOW (over 1 min) <ul style="list-style-type: none"> May repeat every 5 minutes Not to exceed 4 doses or 200mcg IM – 1mcg/kg, not to exceed 100mcg <ul style="list-style-type: none"> May repeat after 15 minutes Not to exceed 4 doses or 200mcg <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Ketamine <ul style="list-style-type: none"> MODERATE or SEVERE PAIN refractory to fentanyl or when fentanyl is contraindicated*: <ul style="list-style-type: none"> IV/IO – 0.3mg/kg in 100mL normal saline IVPB over 5 minutes <ul style="list-style-type: none"> Max dose 10mg May repeat x1 in 10 minutes Contraindications* for Ketamine: <ul style="list-style-type: none"> GCS <14 Suspected or Confirmed Pregnancy Suspected Acute Coronary Syndrome Known or suspected alcohol or drug intoxication Known allergy or anaphylaxis <p style="text-align: center;">(continued on next page)</p>

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<ul style="list-style-type: none"> • Morphine sulfate <ul style="list-style-type: none"> ▪ For moderate to severe pain <ul style="list-style-type: none"> ♦ IV/IO – 0.1mg/kg <ul style="list-style-type: none"> ○ May repeat every 5 min at half original dose ○ Max 10 mg ♦ IM – 0.1mg/kg <ul style="list-style-type: none"> ○ May repeat every 15 min at half original dose ○ Max 10 mg ▪ In patients >65 years, with known hypersensitivity, or due to provider discretion <ul style="list-style-type: none"> ♦ IV/IO – 0.05mg/kg <ul style="list-style-type: none"> ○ May repeat every 5 min at half original dose ○ Max 10 mg ♦ IM – 0.05mg/kg <ul style="list-style-type: none"> ○ May repeat every 15 min at half original dose ○ Max 10 mg • Hold for SBP < 100 mmHg • Recheck and document vital signs before and after each administration 	<ul style="list-style-type: none"> • Morphine sulfate <ul style="list-style-type: none"> ▪ For moderate to severe pain <ul style="list-style-type: none"> ♦ IV/IO – 0.1mg/kg ♦ Delivered over 1-2 minutes <ul style="list-style-type: none"> ○ May repeat every 5 min at half original dose ○ Max 0.2 mg/kg or 10 mg (whichever is lesser) ♦ IM – 0.1mg/kg <ul style="list-style-type: none"> ○ May repeat every 15 min at half original dose ○ Max 10 mg • Hold if SBP below age appropriate norm • Refer to Appendix A • Recheck and document vital signs before and after each administration
Base Hospital Orders only	
<ul style="list-style-type: none"> • Pain control must be confirmed by the base hospital physician in the event of: <ul style="list-style-type: none"> ▪ SBP < 100 mmHg ▪ Significant injury to: <ul style="list-style-type: none"> ♦ Head ♦ Chest ♦ Abdomen • Consult with ED Physician for further treatment measures 	<ul style="list-style-type: none"> • Pain control must be confirmed by the base hospital physician in the event of: <ul style="list-style-type: none"> ▪ Hypotension ▪ Significant injury to: <ul style="list-style-type: none"> ♦ Head ♦ Chest ♦ Abdomen • Consult with ED Physician for further treatment measures
Communication Failure Protocol	
<p>N/A</p>	<p>N/A</p>
Additional Information	
<ul style="list-style-type: none"> • In patients >65 years, with known hypersensitivity, or due to provider discretion: <ul style="list-style-type: none"> ▪ Consider ½ dose of any pain control medication • Pain scale utilized in assessment should be documented before and after all pain interventions 	<ul style="list-style-type: none"> • Pain scale utilized in assessment should be documented before and after all pain interventions <ul style="list-style-type: none"> ▪ Consider using FACES pain scale for the younger pediatric patient and document appropriately.



VASCULAR ACCESS	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
N/A	N/A
Expanded Scope	
N/A	N/A
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access is a Standing Order for all patients where IV/IO access is indicated by protocol. • Peripheral IV placement is the preferred choice in all patients. • A saline lock is acceptable and may be utilized unless there is a specific need for running IV fluids. • Needle gauge selection should be determined by the situation and patient physiology. • STROKE and STEMI patients should be accessed in large vessel sites, i.e. A/C, avoiding the radial area. • External Jugular (EJ) IV placement is indicated in patients when no other peripheral IV can be established and the patient requires fluid administration or access for IV medications. Generally external jugular lines are used in unconscious patients but may be used in conscious patients with due regard for the patient's sensitivities. • Intraosseous Access (IO) is the preferred choice in unconscious patients when a peripheral IV cannot be established in no more than 2 attempts AND the patient requires immediate fluid administration or access for immediate medication administration. IO is contraindicated in conscious patients unless indicated in a specific treatment protocol. IO access must meet Policy 538: Intraosseous Infusion. 	<ul style="list-style-type: none"> • Do not delay transport in small pediatric patients to allow for vascular access. • Pediatric patients may necessitate a small gauge Peripheral IV catheter based on size. • A saline lock is acceptable and may be utilized unless there is a specific need for running IV fluids • Intraosseous Access (IO) is the preferred choice in unconscious patients >3kg when a peripheral IV cannot be established in no more than 2 attempts AND the patient requires immediate fluid administration or access for immediate medication administration. IO is contraindicated in conscious patients unless indicated in a specific treatment protocol. IO access must meet Policy 538: Intraosseous Infusion. <ul style="list-style-type: none"> • No patient under 3kg will have intraosseous access established in the prehospital setting • 2% Lidocaine is NOT to be utilized for pediatric patients.
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • All established sites must be visible, monitored for infiltration and/or extravasation, and discontinued as appropriate. Do not remove abandoned IO devices. • For procedure on establishing Humeral IO, refer to: Policy 538 – Attachment A. • For procedure on establishing Tibial IO, refer to: Policy 538 – Attachment B. 	<ul style="list-style-type: none"> • All established sites must be visible, monitored for infiltration and/or extravasation, and discontinued as appropriate. Do not remove abandoned IO devices. • Establishing vascular access on pediatric patients contributes to significantly increased patient stress levels. Paramedics should take this in to consideration prior to any prophylactic peripheral IV/IO placement.



ABDOMINAL/FLANK PAIN	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Position of Comfort • NPO • Monitor VS (check for orthostatic changes) • Vital signs unstable (SBP < 90 or signs of poor perfusion): <ul style="list-style-type: none"> ▪ Place supine ▪ Administer oxygen to maintain SpO₂ >94% 	<ul style="list-style-type: none"> • Position of Comfort • NPO • Monitor VS (check for orthostatic changes) • Vital signs unstable (SBP < 90 or signs of poor perfusion): Refer to Appendix A <ul style="list-style-type: none"> ▪ Place supine ▪ Administer oxygen to maintain SpO₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access • Normal Saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP>90, re-evaluating after each 500mL <ul style="list-style-type: none"> ♦ Max 1L • For epigastric pain, consider performing a 12-lead ECG <ul style="list-style-type: none"> ▪ Refer to Policy 539: 12-Lead ECG • For nausea/vomiting <ul style="list-style-type: none"> ▪ Refer to Policy 533-15: Nausea/Vomiting • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control 	<ul style="list-style-type: none"> • Consider Vascular access • Normal Saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP appropriate for age <ul style="list-style-type: none"> ◦ Refer to Appendix A ♦ NS bolus as needed to achieve above <ul style="list-style-type: none"> ◦ 20mL/kg, may repeat x1 then contact Base Hospital • For nausea/vomiting <ul style="list-style-type: none"> ▪ Refer to Policy 533-15: Nausea/Vomiting • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Consider atypical presentation possible for acute coronary syndrome. 	<ul style="list-style-type: none"> • Consider atypical presentation possible for acute coronary syndrome.

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Altered Neurologic Function	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • If suspected stroke, refer to Policy 533-22: Stroke; Policy 550: Stroke System Triage and Destination (perform Cincinnati Stroke Scale) • Administer oxygen to maintain SpO₂ >94% • Determine blood glucose <ul style="list-style-type: none"> ▪ If blood glucose <60 AND ▪ Patient is awake and able to swallow safely <ul style="list-style-type: none"> ♦ Oral Glucose - PO – 15g • If Hx/PE suggests opioid overdose: <ul style="list-style-type: none"> ♦ Refer to Policy 533-16: Poisoning/Overdose 	<ul style="list-style-type: none"> • If suspected stroke, refer to Policy 533-22: Stroke; Policy 550: Stroke System Triage and Destination (perform Cincinnati Stroke Scale) • Administer oxygen to maintain SpO₂ >94% • Determine blood glucose <ul style="list-style-type: none"> ▪ If blood glucose <60 AND ▪ Patient is awake and able to swallow safely <ul style="list-style-type: none"> ♦ Oral Glucose - PO – 15g • If Hx/PE suggests opioid overdose: <ul style="list-style-type: none"> ▪ Refer to Policy 533-16: Poisoning/Overdose
Expanded Scope	
<ul style="list-style-type: none"> • If blood sugar <60 and patient unable to swallow safely <ul style="list-style-type: none"> ▪ Glucagon <ul style="list-style-type: none"> ♦ IM – 1mg • If Hx/PE suggests opioid overdose <ul style="list-style-type: none"> ▪ Refer to Policy 533-16: Poisoning/Overdose 	<ul style="list-style-type: none"> • If Hx/PE suggests opioid overdose Refer to Policy 533-16: Poisoning/Overdose
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • If Hx/PE suggests opioid overdose <ul style="list-style-type: none"> ▪ Refer to Policy 533-16: Poisoning/Overdose • Vascular access • If blood glucose < 60 and not able to swallow safely <ul style="list-style-type: none"> ▪ D10W <ul style="list-style-type: none"> ♦ IV/IO – 25G (250 mL) ▪ Glucagon (if no IV access) <ul style="list-style-type: none"> ♦ IM – 1mg ▪ Recheck Blood Glucose level 5 min after IV Dextrose bolus complete or 10 min after Glucagon administration ▪ If still < 60 <ul style="list-style-type: none"> ♦ D10W <ul style="list-style-type: none"> ○ IV/IO – 25G (250 mL) • If Hx/PE suggests opioid overdose <ul style="list-style-type: none"> ▪ Refer to Policy 533-16: Poisoning/Overdose 	<ul style="list-style-type: none"> • Consider vascular access • If blood glucose <60 and not able to swallow safely <ul style="list-style-type: none"> ▪ D10W <ul style="list-style-type: none"> ♦ IV/IO bolus –0.5G/kg (5mL/kg) ♦ Maximum dose 25G (250mL) ▪ Glucagon (if no IV access) <ul style="list-style-type: none"> ♦ IM – 0.1mg/kg ♦ Maximum dose 1mg ▪ Recheck Blood Glucose level 5 min after IV Dextrose bolus complete or 10 min after Glucagon administration: <ul style="list-style-type: none"> • If still < 60 <ul style="list-style-type: none"> ♦ D10W <ul style="list-style-type: none"> ○ IV/IO –0.5G/kg (5mL/kg) ○ Maximum dose 25G (250mL) • If Hx/PE suggests opioid overdose <ul style="list-style-type: none"> ▪ Refer to Policy 533-16: Poisoning/Overdose
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures

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Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Certain oral hypoglycemic agents (e.g. - sulfonylureas) and long-acting insulin preparations have a long duration of action, sometimes up to 72 hours. Patients on these medications who would like to decline transport MUST be warned about the risk of repeat hypoglycemia for up to 3 days, which can occur during sleep and result in the patient's death. If the patient continues to decline further care, every effort must be made to have the patient speak to the ED Physician prior to leaving the scene. • Naloxone is not to be used for patients in cardiac arrest. • If strongly suspect opioid overdose and no or inadequate response to initial 2mg naloxone, may give up to 10mg naloxone IV/IM in 2mg doses. • If stroke is suspected refer to Policy 533-22: Stroke; Policy 550: Stroke System Triage and Destination • IO for access ONLY if patient meets IO Policy 538: Intraosseous Infusion 	<ul style="list-style-type: none"> • IO for access ONLY if patient meets Policy 538: Intraosseous Infusion • Naloxone is not to be used for patients in cardiac arrest.

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ANAPHYLAXIS / ALLERGIC REACTION	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Assist with prescribed Epi-Pen • Administer oxygen to maintain SpO₂ >94% • Epinephrine – 0.3mg <ul style="list-style-type: none"> ▪ Approved BLS autoinject device 	<ul style="list-style-type: none"> • Assist with prescribed Epi-Pen • Administer oxygen to maintain SpO₂ >94% • Epinephrine <ul style="list-style-type: none"> ▪ Approved BLS autoinject device <ul style="list-style-type: none"> ♦ 0.15mg for 15 to 30kg patients ♦ 0.3mg for >30kg patients
Expanded Scope	
<ul style="list-style-type: none"> • Epinephrine 1mg/mL <ul style="list-style-type: none"> ▪ IM – 0.5mg (0.5mL) ▪ May repeat x2 • If wheezing is present <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6mL) ♦ Repeat as needed 	<ul style="list-style-type: none"> • Epinephrine 1mg/mL <ul style="list-style-type: none"> ▪ IM <ul style="list-style-type: none"> ♦ 0.01mg/kg (0.01mL/kg) for 15 to 50kg patients ♦ 0.5mg (0.5mL) for >50kg patients ▪ May repeat x2 • If wheezing is present <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Less than 2 years old <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ Repeat as needed ♦ 2 years old and greater <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ Repeat as needed
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Epinephrine 1mg/mL <ul style="list-style-type: none"> ▪ IM <ul style="list-style-type: none"> ♦ 0.5mg (0.5mL) ♦ May repeat every 5 mins x2 • Cardiac Monitor • Vascular Access • Anaphylaxis with Shock <ul style="list-style-type: none"> ▪ Treatment as above for Anaphylaxis without Shock ▪ Initiate 2nd IV/IO <ul style="list-style-type: none"> ♦ Normal Saline <ul style="list-style-type: none"> ○ IV/IO bolus – 1 Liter • For Profound Hypotension <ul style="list-style-type: none"> ▪ Push dose epinephrine ▪ Refer to Policy 533-10: Push-Dose Epinephrine <p style="text-align: center;">(continued)</p>	<ul style="list-style-type: none"> • Epinephrine 1mg/mL <ul style="list-style-type: none"> ▪ IM <ul style="list-style-type: none"> ♦ 0.01mg/kg (0.01mL/kg) for 15 to 50kg patients ♦ 0.5mg (0.5mL) for >50kg patients ♦ May repeat every 5 mins x2 • Cardiac Monitor • Vascular Access • Anaphylaxis with Shock <ul style="list-style-type: none"> ▪ Treatment as above for Anaphylaxis without Shock ▪ Initiate 2nd IV/IO <ul style="list-style-type: none"> ♦ Normal Saline <ul style="list-style-type: none"> ○ IV/IO bolus – 20 mL/kg • For Profound Hypotension <ul style="list-style-type: none"> ▪ Push dose epinephrine ▪ Refer to Policy 533-10: Push-Dose Epinephrine <p style="text-align: center;">(continued)</p>

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<ul style="list-style-type: none"> • If Wheezing is present <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6mL) ♦ Repeat as needed • Allergic Reaction (less severe, hives only) <ul style="list-style-type: none"> ▪ Diphenhydramine <ul style="list-style-type: none"> ♦ IM – 50mg 	<ul style="list-style-type: none"> • If Wheezing is present <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Less than 2 years old <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ Repeat as needed ♦ 2 years old and greater <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ Repeat as needed • Allergic Reaction (less severe, hives only) <ul style="list-style-type: none"> ▪ Diphenhydramine <ul style="list-style-type: none"> ♦ IM – 1mg/kg (Max 50mg)
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Anaphylaxis is a <i>true</i> medical emergency requiring immediate assessment, recognition, and intervention using epinephrine. • It is pivotal to treat these patients with intramuscular epinephrine. Once the cascade of anaphylaxis is stabilized, continue to recognize and treat signs/symptoms throughout transport. 	<ul style="list-style-type: none"> • Anaphylaxis is a <i>true</i> medical emergency requiring immediate assessment, recognition, and intervention using epinephrine. • It is pivotal to treat these patients with intramuscular epinephrine. Once the cascade of anaphylaxis is stabilized, continue to recognize and treat signs/symptoms throughout transport.

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BEHAVIORAL EMERGENCIES	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Confirm and maintain scene/responder safety • Attempt to establish rapport. • If patient appears stable, and emergency treatment is unnecessary, reassure while transporting and do not attempt vital signs or any other procedures. • Try not to violate the patient's personal space. • Determine blood glucose <ul style="list-style-type: none"> ▪ If scenario dictates and patient is cooperative 	<ul style="list-style-type: none"> • Confirm and maintain scene/responder safety • Attempt to establish rapport. • If patient appears stable, and emergency treatment is unnecessary, reassure while transporting and do not attempt vital signs or any other procedures. • Try not to violate the patient's personal space. • Determine blood glucose <ul style="list-style-type: none"> ▪ If scenario dictates and patient is cooperative
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Consider vascular access • Determine blood glucose level • For excited delirium <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ IM 10mg OR ♦ IV/IO 2mg <ul style="list-style-type: none"> ○ Repeat 1mg every 2 min as needed ○ Max 10mg • Any patient receiving Midazolam will be monitored with pulse oximetry. 	<ul style="list-style-type: none"> • Determine blood glucose level • For excited delirium <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ 13kg to 40kg <ul style="list-style-type: none"> ○ IM - 5mg ♦ <13kg <ul style="list-style-type: none"> ○ IM – 0.1mg/kg <ul style="list-style-type: none"> ▪ Max 5mg • Any patient receiving Midazolam will be monitored with pulse oximetry.
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A

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Additional Information

- If patient refuses care and transport, and that refusal is because of “mental disorder”, consider having patient taken into custody according to Welfare and Institutions Code Section 5150. “Mental disorders” do not generally include alcohol or drug intoxication, brain injury, hypoxemia, hypoglycemia, or similar causes.
- Be sure to consider and rule out other possible causes or behavior (traumatic or medical).
- Use of restraints (physical or chemical) shall be documented and monitored.
- Patients shall be medically cleared prior to transporting to a psychiatric facility if patient is placed on 5150 hold by law enforcement.
- All patients that are deemed medically unstable shall be transported to the most accessible Emergency Department.

- If patient refuses care and transport, and that refusal is because of “mental disorder”, consider having patient taken into custody according to Welfare and Institutions Code Section 5150. “Mental disorders” do not generally include alcohol or drug intoxication, brain injury, hypoxemia, hypoglycemia, or similar causes.
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CARDIAC ARREST MANAGEMENT (CAM)	
ADULT	PEDIATRIC – (14 years and under)
Initial Procedures	
<ul style="list-style-type: none"> • Initial Management <ul style="list-style-type: none"> ▪ The primary goal in resuscitation of cardiac arrest patients is to establish circulation via high quality, uninterrupted chest compressions <ul style="list-style-type: none"> ♦ High performance CPR begins immediately ♦ Set metronome at 110 compressions per minute ♦ Chest compressions should be 2-2.5 inches deep ♦ Allow full chest recoil ♦ Limit any pause to 3 seconds or less ♦ Switch compressors at every 200 compressions ▪ Defibrillation should be attempted as soon as possible during the resuscitation <ul style="list-style-type: none"> ♦ Attach defibrillator during compressions ♦ Rescuers 2 and 3 should focus initially on attaching electrodes ▪ Compressions halted: <ul style="list-style-type: none"> ♦ Allow AED to analyze/manually analyze <ul style="list-style-type: none"> ○ For manual defibrillation determine if shockable rhythm within three seconds ♦ Rotate compressors every 2 minutes during each rhythm check ♦ If shock indicated: <ul style="list-style-type: none"> ○ Complete 30 compressions during the charge cycle of the defibrillator ○ Ventilations stop at 20th compression ○ After 30th compressions, rescuer “hovers” over the chest and calls out “OFF” ○ Defibrillation should occur within 1 second ♦ Hover hands over the chest and be prepared to begin compressions as soon as shock is delivered • Airway Management and Ventilation <ul style="list-style-type: none"> ▪ Insert OPA ▪ BVM ventilation after initial AED/manual analysis ▪ Utilize the “2 thumbs up” jaw thrust technique to open the airway ▪ Deliver small tidal volume ventilations, one handed, (approx.100mL) via small adult BVM on the upstroke of every 10th compression ▪ Airway adjunct should match the specific patient situation 	<ul style="list-style-type: none"> • Initial Management <ul style="list-style-type: none"> ▪ The primary goal in resuscitation of cardiac arrest patients is to establish circulation via high quality, uninterrupted chest compressions <ul style="list-style-type: none"> ♦ High performance CPR begins immediately ♦ Set metronome at 110 compressions per minute ♦ Compressions should be 1/3 to 1/2 chest depth <ul style="list-style-type: none"> ○ Child (age 1-14 years): Use 1 or 2 hands ○ Infant (0-1 year): Use 2 fingers ♦ Allow full chest recoil ♦ Limit any pause to 3 seconds or less ♦ Switch compressors at every 200 compressions ▪ Defibrillation should be attempted as soon as possible during the resuscitation <ul style="list-style-type: none"> ♦ Attach defibrillator during compressions ♦ Rescuers 2 and 3 should focus initially on attaching electrodes ▪ Compressions halted: <ul style="list-style-type: none"> ♦ Allow AED to analyze/manually analyze <ul style="list-style-type: none"> ○ For manual defibrillation determine if shockable rhythm within three seconds ♦ Rotate compressors every 2 minutes during each rhythm check ♦ If shock indicated: <ul style="list-style-type: none"> ○ Complete 30 compressions during the charge cycle of the defibrillator ○ Ventilations stop at 20th compression ○ After 30th compressions, rescuer “hovers” over the chest and calls out “OFF” ○ Defibrillation should occur within 1 second ♦ Hover hands over the chest and be prepared to begin compressions as soon as shock is delivered • Airway Management and Ventilation <ul style="list-style-type: none"> ▪ Insert OPA ▪ BVM ventilation after initial AED/manual analysis ▪ Utilize the “2 thumbs up” jaw thrust technique to open the airway ▪ Deliver small tidal volume ventilations, one handed, (approx.100mL) via pediatric BVM on the upstroke of every 10th compression ▪ Airway adjunct should match the specific patient situation

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ALS Prior to Base Hospital Contact

- **Transition of Care**
 - Switch to manual cardiac monitor/defibrillator
 - Complete compression cycle prior to analyzing rhythm
 - ALS care must not interfere with the triangle of life
- **Establish vascular access**
 - Do not interrupt compressions to accomplish
 - IV or IO
 - ♦ Refer to [Policy 533-04: Vascular Access](#)
- **Medication Administration**
 - Refer to specific policy for resuscitation and medication administration procedures
 - ♦ [Policy 533-09b: Cardiac Arrest – VF / VT](#)
 - ♦ [Policy 533-09c: Cardiac Arrest – Asystole / PEA](#)
- **Advanced airway management**
 - Unless insufficient or compromised, maintain BLS airway
 - Place ETCO₂ filter line to monitor and attach to BVM
 - ♦ End-tidal capnography will be used to determine effectiveness of resuscitation, ROSC, and as a decision tool for termination of resuscitation
 - Advanced airway placement should not interfere with continuous chest compressions or defibrillation
- **Post ROSC Management**
 - Focus is on stabilizing the patient causal factors and providing transport
 - If ROSC is achieved a BLS airway is preferred but an advanced airway can be considered
 - Mix Push-dose Epinephrine
 - ♦ Refer to [Policy 533-10: Push Dose Epinephrine](#)
 - Prior to moving the patient:

Initial Actions

- ♦ Initiate 5-10 minute continuous femoral pulse check
- ♦ Continue rescue breathing
- ♦ Confirm monitor settings are correct and visible with ACCURATE WAVEFORM
 - Paddles ECG
 - SPO₂ waveform
 - ETCO₂ waveform

Circulation

- ♦ Assess for palpable radial pulse
- ♦ Obtain peripheral IV access (18GA preferred, 20GA minimum)
- ♦ Initiate IV fluid bolus, 1000mL NS unless signs/symptoms of pulmonary edema
- ♦ Obtain manual blood pressure
- ♦ Epi and fluids for systolic blood pressure <100 mmHg

- **Transition of Care**
 - Switch to manual cardiac monitor/defibrillator
 - Complete compression cycle prior to analyzing rhythm
 - ALS care must not interfere with the triangle of life
- **Establish vascular access**
 - Do not interrupt compressions to accomplish
 - IV or IO
 - ♦ Refer to [Policy 533-4: Vascular Access](#)
- **Medication Administration**
 - Refer to specific policy for resuscitation and medication administration procedures
 - ♦ [Policy 533-09b: Cardiac Arrest – VF / VT](#)
 - ♦ [Policy 533-09c: Cardiac Arrest – Asystole / PEA](#)
- **Advanced airway management**
 - Unless insufficient or compromised, maintain BLS airway
 - Place ETCO₂ filter line to monitor and attach to BVM
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 - Advanced airway placement should not interfere with continuous chest compressions or defibrillation
- **Post ROSC Management**
 - Focus is on stabilizing the patient causal factors and providing transport
 - If ROSC is achieved a BLS airway is preferred but an advanced airway can be considered
 - Mix Push-dose Epinephrine
 - ♦ Refer to [Policy 533-10: Push Dose Epinephrine](#)
 - Prior to moving the patient

Initial Actions

- ♦ Initiate 5-10 minute continuous femoral pulse check
- ♦ Continue rescue breathing
- ♦ Confirm monitor settings are correct and visible with ACCURATE WAVEFORM
 - Paddles ECG
 - SPO₂ waveform
 - ETCO₂ waveform

Circulation

- ♦ Assess for palpable radial pulse
- ♦ Obtain peripheral IV access (18GA preferred, 20GA minimum)
- ♦ Initiate IV fluid bolus, 20mL/kg NS unless signs/symptoms of pulmonary edema
- ♦ Obtain manual blood pressure
- ♦ Epi and fluids titrated to weight based appropriate systolic blood pressure

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<p style="text-align: center;">Airway/Ventilation</p> <ul style="list-style-type: none"> ◆ Assess for responsiveness and spontaneous ventilations ◆ Assess ETCO₂, lung sounds and SPO₂ <ul style="list-style-type: none"> ○ Oxygenate to SPO₂ 94-99% ○ Oxygen flow rate titrated to prevent 100% SPO₂ ◆ Ventilate the patient at 10 breaths per minute until chest begins to rise (approx. 500 ml) to achieve: <ul style="list-style-type: none"> ○ ETCO₂ of 35-45 ○ SpO₂ 94-99% ○ No hyperventilation or hyper-oxygenation ◆ Maintain BLS airway or place advanced airway as indicated ◆ Place advanced airway if needed to effectively ventilate while moving patient (consider transport time when determining need for advanced airway) ◆ Obtain a 12 lead EKG. 5-10 minutes at scene is reasonable to ensure rhythm stability. <ul style="list-style-type: none"> ○ Refer to Policy 539: 12-Lead ECG <p><i>Transport all ROSC patients to a STEMI Receiving Center.</i></p> <ul style="list-style-type: none"> • Post ROSC <ul style="list-style-type: none"> ▪ Maintain systolic of >90mmHg <ul style="list-style-type: none"> ◆ NS fluid bolus ◆ Push-dose epinephrine ◆ Consult with the Base Hospital for additional ◆ Refer to Policy 533-10: Push-Dose Epinephrine 	<p style="text-align: center;">Airway/Ventilation</p> <ul style="list-style-type: none"> ◆ Assess for responsiveness and spontaneous ventilations ◆ Assess ETCO₂, lung sounds and SPO₂ <ul style="list-style-type: none"> ○ Oxygenate to SPO₂ 94-99% ○ Oxygen flow rate titrated to prevent 100% SPO₂ ◆ Ventilate the patient at 10 breaths per minute until chest begins to rise to achieve: <ul style="list-style-type: none"> ○ ETCO₂ of 35-45 ○ SpO₂ 94-99% ○ No hyperventilation or hyper-oxygenation ◆ Maintain BLS airway or place advanced airway as indicated ◆ Place advanced airway if needed to effectively ventilate while moving patient ◆ Obtain a 12 lead EKG. 5-10 minutes at scene is reasonable to ensure rhythm stability. <ul style="list-style-type: none"> ○ Refer to Policy 539: 12-Lead ECG <p><i>Transport all ROSC patients to a STEMI Receiving Center.</i></p> <ul style="list-style-type: none"> • Post ROSC <ul style="list-style-type: none"> ▪ Maintain weight based appropriate systolic blood pressure <ul style="list-style-type: none"> ◆ NS fluid bolus ◆ Push-dose epinephrine ◆ Consult with the Base Hospital for additional ◆ Refer to Policy 533-10: Push-Dose Epinephrine
Base Hospital Orders only	
Communication Failure Protocol	
N/A	N/A

(continued)



Additional Information

- CAM focus is on the Triangle of Life
- Rescuer #3 (at the head) should lead the CPR team.
- **Timekeeping** is important
 - The compressor should count 1-10 and repeat
 - The ventilator should count 10, 20, 30, etc. at every 10 compressions
- Resuscitation time
 - A minimum of 20 minutes at scene during resuscitation are required in all instances *except*:
 - ♦ 30 minutes of resuscitation are required in persistent VF/VT
 - Less time resuscitating may be appropriate in:
 - ♦ Unsafe scenes
 - ♦ Unworkable scenes
- Withhold or terminate resuscitation in traumatic arrest if:
 - Time from arrest to arrival at the nearest Hospital will exceed 20 minutes OR
 - The patient has remained in Cardiac Arrest after > 20 minutes of extended extrication
 - If the rhythm is asystole or wide complex PEA at a rate of 30 beats per minute or slower, the patient shall be determined to be dead
 - Refer to [Policy 533-29: Traumatic Arrest](#)
 - Refer to [Policy 509: Determination of Death](#)

Continuous chest compressions and defibrillation are more important than ventilation, vascular access, and medication administration.

Do NOT stop compressions during ventilations, charging of defibrillators, or ALS procedures.

- CAM focus is on the Triangle of Life
- Rescuer #3 (at the head) should lead the CPR team.
- **Timekeeping** is important
 - The compressor should count 1-10 and repeat
 - The ventilator should count 10, 20, 30, etc. at every 10 compressions
- Resuscitation time
 - All pediatric resuscitation patients shall be transported to the closest receiving hospital

Continuous chest compressions and defibrillation are more important than ventilation, vascular access, and medication administration.

Do NOT stop compressions during ventilations, charging of defibrillators, or ALS procedures.



CARDIAC ARREST	
VF / VT	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Manage using Cardiac Arrest Management policy. • Refer to Policy 533-09a: Cardiac Arrest Management (CAM) • Airway management <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management 	<ul style="list-style-type: none"> • Manage using Cardiac Arrest Management policy. • Refer to Policy 533-09a: Cardiac Arrest Management (CAM) • Airway management <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Defibrillate <ul style="list-style-type: none"> ▪ Use the energy settings recommended by the monitor manufacturer that have been approved by service provider medical director • Vascular access <ul style="list-style-type: none"> ▪ Epinephrine <ul style="list-style-type: none"> ♦ IV/IO – 1mg/10mL: <ul style="list-style-type: none"> ○ 1mg (10 mL) every 3-5 min ▪ Amiodarone <ul style="list-style-type: none"> ♦ IV/IO – 300mg <i>after</i> second defibrillation ♦ If VT/VF persists after 3 minutes <ul style="list-style-type: none"> ○ Additional 150mg IV/IO ♦ Max total dose 450mg • ALS Airway Management <ul style="list-style-type: none"> ▪ If unable to ventilate by BLS measures, initiate appropriate advanced airway procedures <ul style="list-style-type: none"> ♦ Refer to Policy 533-02: Airway Management • If VF/VT converts and then recurs; <ul style="list-style-type: none"> ▪ Defibrillate at last successful energy level • Suspected origin of Tricyclic Antidepressant Overdose: <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV/IO – 1mEq/kg ♦ Repeat 0.5mEq/kg every 5 min • If sustained ROSC (>30 seconds), perform 12-lead EKG and transport patient to the appropriate SRC • Suspected renal failure, patient on dialysis <i>and</i> no dialysis for 3 days or more <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 1gm over 1 min ♦ Repeat x 1 in 10 min ▪ 2nd vascular access site <ul style="list-style-type: none"> ♦ Sodium bicarbonate (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO – 1mEq/kg ○ Repeat 0.5mEq/kg every 5 min 	<ul style="list-style-type: none"> • Defibrillate – 2 Joules/kg <ul style="list-style-type: none"> ▪ If patient still in VF/VT at rhythm check, increase to 4 Joules/kg ▪ Repeat every 2 minutes as indicated • Vascular access <ul style="list-style-type: none"> ▪ Epinephrine 1mg/10mL <ul style="list-style-type: none"> ♦ IV/IO – 0.01mg/kg (0.1 mL/kg) every 3-5 min ▪ Amiodarone <ul style="list-style-type: none"> ♦ IV/IO – 5mg/kg <i>after</i> second defibrillation ♦ If VT/VF persists after 3 minutes <ul style="list-style-type: none"> ○ Additional 2.5mg/kg • ALS Airway Management <ul style="list-style-type: none"> ▪ If unable to ventilate by BLS measures, initiate appropriate advanced airway procedures <ul style="list-style-type: none"> ♦ Refer to Policy 533-02: Airway Management • Suspected renal failure, patient on dialysis <i>and</i> no dialysis for 3 days or more <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 20mg/kg over 1 min ♦ Repeat x 1 in 10 min ▪ 2nd vascular access site <ul style="list-style-type: none"> ♦ Sodium bicarbonate (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO – 1mEq/kg ○ Repeat 0.5mEq/kg every 5 min

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Base Hospital Orders only	
<ul style="list-style-type: none"> • Patient with repeated firing of AICD: <ul style="list-style-type: none"> ▪ Amiodarone <ul style="list-style-type: none"> ♦ IV/IO – 150mg in 100mL 0.9% normal saline ♦ Deliver over 10 minutes • Torsades de Pointes <ul style="list-style-type: none"> ▪ Magnesium Sulfate <ul style="list-style-type: none"> ♦ IV/IO – 2gm over 2min ♦ May repeat x1 in 5 min • Refractory VF/VT should be resuscitated for a full 30 minutes, if not transported earlier. If after 30 minutes there is no ROSC, contact Base Hospital for confirmation of terminating resuscitation • Refer to Policy 509: Determination of Death 	N/A
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Metronome shall be set at 110 compressions per minute: <ul style="list-style-type: none"> ▪ 10:1 synchronized compressions/ventilations • Hypothermic patients should be transported to the most accessible receiving hospital. Administer only one round of medication administration and limit defibrillation to 6 times prior to Base Hospital contact. • Ventricular tachycardia (VT) is a rate > 150 bpm • IO to be used when unable to establish an IV after 2 attempts or 90 seconds. • CPR is not to be interrupted during IV/IO, intubation attempts, or medication administration. • Blood glucose measurements are not accurate and D50 and naloxone are not helpful, so these are not a standard indication for any patient in cardiac arrest. Blood glucose may be evaluated if ROSC is achieved. • Modifications for Pregnancy <ul style="list-style-type: none"> ▪ <u>Circulation</u> <ul style="list-style-type: none"> ♦ Higher hand placement on chest wall ♦ Perform uterine displacement (manual, backboard, pillows) to allow effective compressions AED same as with non-pregnant patient ♦ AED same as with non-pregnant patient ▪ <u>Airway</u> <ul style="list-style-type: none"> ♦ May need jaw-thrust to open airway ♦ Consider early advanced airway ♦ Use smaller ET tube than normal (0.5-1 mm smaller) ♦ Provide cricoid pressure when intubating ▪ <u>Breathing</u> <ul style="list-style-type: none"> ♦ Expect increased resistance to bag/mask ventilation ♦ Increase rate of respirations from 10-12 to 16-18 breaths/minute 	<ul style="list-style-type: none"> • All pediatric resuscitation patients are to be transported to the closest receiving hospital. • Hypothermic patients should be transported to the most accessible receiving hospital. Administer only one round of medication administration and limit defibrillation to 6 times prior to Base Hospital contact.



CARDIAC ARREST - ASYSTOLE / PULSELESS ELECTRICAL ACTIVITY (PEA)	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Manage using Cardiac Arrest Management policy • Refer to Policy 533-09a: Cardiac Arrest Management (CAM) • Airway management. Refer to Policy 533-02: Airway Management 	<ul style="list-style-type: none"> • Manage using Cardiac Arrest Management policy • Refer to Policy 533-09a: Cardiac Arrest Management (CAM) • Airway management. Refer to Policy 533-02: Airway Management
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Assess/treat causes • Defibrillator shall be charged during compressions and charge dumped if Asystole/PEA. • Confirm Asystole by increasing gain to 2.0 <ul style="list-style-type: none"> • If found to be fine VF, deliver shock • Vascular access <ul style="list-style-type: none"> • Epinephrine <ul style="list-style-type: none"> • IV/IO – 1mg/10mL: 1mg (10 mL) every 3-5 min • If suspected hypovolemia: <ul style="list-style-type: none"> • Normal Saline • IV/IO bolus – 1 Liter • ALS Airway Management <ul style="list-style-type: none"> • If unable to ventilate by BLS measures, initiate appropriate advanced airway procedures <ul style="list-style-type: none"> • Refer to Policy 533-02: Airway Management • If Asystole converts to organized rhythm but is <40 and/or ETCO₂ <20, continue compressions for 2 minutes then reassess • Tricyclic Antidepressant Overdose <ul style="list-style-type: none"> • Perform 12-lead ECG • Sodium Bicarbonate <ul style="list-style-type: none"> • IV/IO – 1mEq/kg • Repeat 0.5mEq/kg every 5 min <p style="text-align: center;">(continued)</p>	<ul style="list-style-type: none"> • Assess/treat causes • Vascular access <ul style="list-style-type: none"> • Epinephrine 1mg/10mL <ul style="list-style-type: none"> • IV/IO – 0.01mg/kg (0.1 mL/kg) every 3-5 min • If suspected hypovolemia: <ul style="list-style-type: none"> • Normal Saline <ul style="list-style-type: none"> • IV/IO bolus – 20mL/kg • Repeat x 2 • ALS Airway Management <ul style="list-style-type: none"> • If unable to ventilate by BLS measures, initiate appropriate advanced airway procedures <ul style="list-style-type: none"> • Refer to Policy 533-02: Airway Management • Suspected renal failure, patient on dialysis and no dialysis for 3 days or more <ul style="list-style-type: none"> • Calcium Chloride <ul style="list-style-type: none"> • IV/IO – 20mg/kg over 1 min • Repeat x 1 in 10 min • 2nd vascular access site <ul style="list-style-type: none"> • Sodium bicarbonate (see additional information, below) <ul style="list-style-type: none"> • IV/IO – 1mEq/kg • Repeat 0.5mEq/kg every 5 min • Make early Base Hospital contact for all pediatric cardiac arrests

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<ul style="list-style-type: none"> • Suspected renal failure, patient on dialysis <i>and</i> no dialysis for 3 days or more <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 1gm over 1 min ♦ Repeat x 1 in 10 min ▪ 2nd vascular access site <ul style="list-style-type: none"> ♦ Sodium bicarbonate (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO – 1mEq/kg <ul style="list-style-type: none"> ▫ Repeat 0.5mEq/kg every 5 min 	
Base Hospital Orders only	
<ul style="list-style-type: none"> • Beta Blocker Overdose <ul style="list-style-type: none"> ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 2mg <ul style="list-style-type: none"> ○ May give up to 10mg if available • Calcium Channel Blocker Overdose <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 1gm ♦ Repeat x 1 in 10 min ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 2mg ♦ May give up to 10mg if available 	<ul style="list-style-type: none"> • Tricyclic Antidepressant Overdose <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV/IO – 1mEq/kg ♦ Repeat 0.5mEq/kg every 5 min • Beta Blocker Overdose <ul style="list-style-type: none"> ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 0.1mg/kg ♦ May give up to 10mg if available • Calcium Channel Blocker Overdose <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 20mg/kg ♦ Repeat x 1 in 10 min ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 0.1mg/kg ♦ May give up to 10mg if available
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Blood glucose measurements are not accurate and D50 and naloxone are not helpful, so none are done for any patient in cardiac arrest. Blood glucose may be evaluated if ROSC is achieved. • If suspected hypovolemia, initiate immediate transport • In cases of normothermic cardiac arrest patients 18 years and older with unwitnessed cardiac arrest, adequate ventilations, vascular access, and persistent asystole or PEA, confirmed in 2 leads, after 20 full minutes of standard advanced life support care, the paramedic may consider termination of resuscitation. <ul style="list-style-type: none"> ▪ Any patient experiencing any period of VF/VT shall be discussed on scene and with the base station prior to termination ▪ Refer to Policy 533-09a: Cardiac Arrest Management 	<ul style="list-style-type: none"> • If patient is hypothermic – only ONE round of medication administration prior to Base Hospital contact. • All pediatric resuscitation patients are to be transported to the closest receiving facility.

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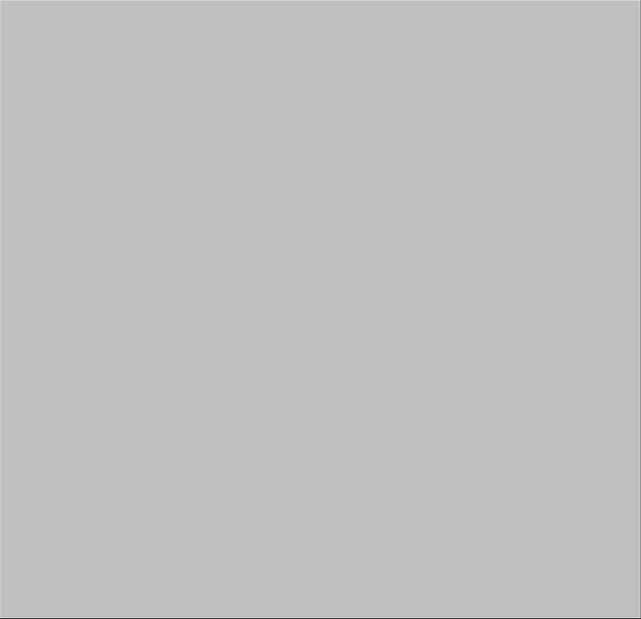
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- If patient is hypothermic – only ONE round of medication administration prior to Base Hospital contact. Field determination of death is discouraged in these patients and they should be transported to the most accessible receiving facility.
(continued)

- **Modifications for Pregnancy**

- Circulation
 - ♦ Higher hand placement on chest wall
 - ♦ Perform uterine displacement (manual, backboard, pillows) to allow effective compressions
 - ♦ AED same as with non-pregnant patient
- Airway
 - ♦ May need jaw-thrust to open airway
 - ♦ Consider early advanced airway
 - ♦ Use smaller ET tube than normal (0.5-1 mm smaller)
 - ♦ Provide cricoid pressure when intubating
- Breathing
 - ♦ Expect increased resistance to bag/mask ventilation
 - ♦ Increase rate of respirations from 10-12 to 16-18 breaths/minute



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PUSH DOSE EPINEPHRINE

INDICATIONS	ACTIONS
<ul style="list-style-type: none"> • Unstable Anaphylaxis • Severe hypotension with signs of shock • Septic shock • Unstable bradycardia • Policies referenced: <ul style="list-style-type: none"> ▪ 533-07: Anaphylaxis Allergic Reaction ▪ 533-11: Chest Pain ▪ 533-12: Symptomatic Bradycardia ▪ 533-19: SOB Pulmonary Edema ▪ 533-21a: Shock – Hypovolemia ▪ 533-21b: Shock – Sepsis ▪ 533-28: Crush Injury 	<ul style="list-style-type: none"> • Increases cardiac output • Increases heart rate • Increases mean arterial pressure (MAP)
ADULT	PEDIATRIC – (14 years and under)
MIXING the CONCENTRATION	MIXING the CONCENTRATION
<ul style="list-style-type: none"> • Double check your concentration prior to mixing • Maintain sterile technique • Label the bag and syringe(s) with the drug name and final concentration <ul style="list-style-type: none"> ▪ Example: “Epinephrine 10mcg/mL” • Mixing concentration using “cardiac preloads”: 1mg/10mL (0.1mg/mL; 100mcg/mL) <ul style="list-style-type: none"> ▪ Supplies needed: <ul style="list-style-type: none"> ♦ 1- 0.1mg/mL epi syringe (preload) ♦ 1- 100mL bag of 0.9% normal saline ♦ 1- 10mL syringe ▪ Mixing instructions: <ul style="list-style-type: none"> ♦ 10mL of 0.1mg/mL epinephrine into 100mL NS bag ♦ Final concentration is 10mcg/mL • Alternate mixing concentration: 1mg/mL <ul style="list-style-type: none"> ▪ Supplies needed: <ul style="list-style-type: none"> ♦ 1- epi 1mg/mL (1mg) ampule or vial ♦ 1- filter needle (ampule) ♦ 1- regular needle ♦ 1- 100mL bag of 0.9% normal saline ♦ 1- 10mL syringe ▪ Mixing instructions: <ul style="list-style-type: none"> ♦ 1mL of 1mg/mL epinephrine into 100mL NS bag ♦ Final concentration is 10mcg/mL (same as above method) <p style="text-align: center;">(continued)</p>	<ul style="list-style-type: none"> • Double check your concentration prior to mixing • Maintain sterile technique • Label the bag and syringe(s) with the drug name and final concentration <ul style="list-style-type: none"> ▪ Example: “Epinephrine 10mcg/mL” • Mixing concentration using “cardiac preloads”: 1mg/10mL (0.1mg/mL; 100mcg/mL) <ul style="list-style-type: none"> ▪ Supplies needed: <ul style="list-style-type: none"> ♦ 1- 0.1mg/mL epi syringe (preload) ♦ 1- 100mL bag of 0.9% normal saline ♦ 1- 10mL syringe ▪ Mixing instructions: <ul style="list-style-type: none"> ♦ 10mL of 0.1mg/mL epinephrine into 100mL NS bag ♦ Final concentration is 10mcg/mL • Alternate mixing concentration: 1mg/mL <ul style="list-style-type: none"> ▪ Supplies needed: <ul style="list-style-type: none"> ♦ 1- epi 1mg/mL (1mg) ampule or vial ♦ 1- filter needle (ampule) ♦ 1- regular needle ♦ 1- 100mL bag of 0.9% normal saline ♦ 1- 10mL syringe ▪ Mixing instructions: <ul style="list-style-type: none"> ♦ 1mL of 1mg/mL epinephrine into 100mL NS bag ♦ Final concentration is 10mcg/mL (same as above method) <p style="text-align: center;">(continued)</p>



BLS Procedures	
N/A	N/A
Expanded Scope	
N/A	N/A
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • IV/IO <ul style="list-style-type: none"> ▪ Withdraw 10mL of solution using 10mL syringe ♦ Administer 10mcg (1mL) every 3 min IV push ♦ Titrate to SBP >90 ♦ Onset: 1 minute 	<ul style="list-style-type: none"> • IV/IO <ul style="list-style-type: none"> ▪ Withdraw 10mL of solution using 10mL syringe ♦ Patient weight <10kg <ul style="list-style-type: none"> ○ Administer 1mcg/kg (0.1mL/kg) every 3min IV push ♦ Patient weight 10kg or greater <ul style="list-style-type: none"> ○ Administer 10mcg (1mL) every 3 min IV push ♦ Titrate to weight appropriate SBP <ul style="list-style-type: none"> ○ Refer to Appendix A ♦ Onset: 1 minute
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
<ul style="list-style-type: none"> • In sepsis <i>ONLY</i>: <ul style="list-style-type: none"> ▪ After 1 Liter of NS bolus ♦ May use push dose epi as indicated above 	<ul style="list-style-type: none"> • In sepsis <i>ONLY</i>: <ul style="list-style-type: none"> ▪ After weight appropriate NS bolus ♦ May use push dose epi as indicated above
Additional Information	
<ul style="list-style-type: none"> • Contraindications: <ul style="list-style-type: none"> ▪ Sodium Bicarbonate (NaHCO₃) <ul style="list-style-type: none"> ♦ Epinephrine is neutralized by, and may precipitate with Sodium Bicarbonate ♦ Do NOT administer together in the same vascular access line and/or location unless the line has been flushed with 10mL or greater of NS • Documentation: <ul style="list-style-type: none"> ▪ Time and amount of each push dose epi given ▪ Patient response 1 minute after administration • Base hospital report: <ul style="list-style-type: none"> ▪ Communicate the use of push dose epinephrine ▪ Report the final concentration delivered ▪ Report the total amount of push dose epi given, the elapsed time of total dosage, and the patient response 	<ul style="list-style-type: none"> • Contraindications: <ul style="list-style-type: none"> ▪ Sodium Bicarbonate (NaHCO₃) <ul style="list-style-type: none"> ♦ Epinephrine is neutralized by, and may precipitate with Sodium Bicarbonate ♦ Do NOT administer together in the same vascular access line and/or location unless the line has been flushed • Documentation: <ul style="list-style-type: none"> ▪ Time and amount of each push dose epi given ▪ Patient response 1 minute after administration • Base hospital report: <ul style="list-style-type: none"> ▪ Communicate the use of push dose epinephrine ▪ Report the final concentration delivered ▪ Report the total amount of push dose epi given, the elapsed time of total dosage, and the patient response

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CHEST PAIN – ACUTE CORONARY SYNDROME

ADULT

BLS Procedures

- Administer oxygen if dyspnea, signs of heart failure or shock, or SpO₂ < 94%-99%
- Assist patient with prescribed Nitroglycerin as needed for chest pain
 - Hold if SBP <110 mmHg

Expanded Scope

- NTG 0.4mg SL (spray or tabs) every 5 min until pain resolved.
 - Hold NTG if SBP <110

ALS Prior to Base Hospital Contact

- Perform 12-lead ECG (prior to medication administration if possible)
 - Refer to [Policy 539: 12-Lead ECG](#)
 - If “MEETS ST ELEVATION MI CRITERIA” or “***ACUTE MI SUSPECTED***” is present, expedite transport to closest STEMI Receiving Center
- Document all initial and ongoing rhythm strips and ECG changes
- Apply defibrillation pads onto the patient
- For continuous chest pain consistent with acute coronary syndrome:
 - Nitroglycerin
 - ♦ SL or lingual spray – 0.4mg every 5 min for continued pain
 - No max dosage
 - Maintain SBP >110mmHg
 - If normal SBP <110mmHg, then maintain SBP >90 mmHg
 - Aspirin
 - ♦ PO – 324 mg
- Vascular access
 - 2 attempts only prior to Base Hospital contact
- If pain persists and not relieved by NTG:
 - Refer to [Policy 533-03: Pain Control](#)
 - ♦ Maintain SBP >110 mmHg
- If patient presents or becomes hypotensive:
 - Elevate legs
 - Normal Saline
 - ♦ IV/IO bolus – 250mL
 - Unless CHF is present
- Ventricular Ectopy –runs of V-Tach (wide complex, heart rate >100bpm, >30 second duration)
 - Amiodarone
 - ♦ IV/IO – 150mg in 100mL 0.9% normal saline
 - ♦ Deliver over 10 minutes

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Base Hospital Orders only

- If hypotensive and signs of CHF are present or no response to fluid therapy:
 - Push dose epinephrine
 - ♦ IV/IO
 - 10mcg (1mL) every 3 min slow IV push
 - Titrate to SBP >90
 - ♦ Refer to [Policy 533-10: Push Dose Epinephrine](#)
- Consult with ED Physician for further treatment measures

Communication Failure Protocol

N/A

Additional Information

- Nitroglycerin is contraindicated when erectile dysfunction medications (Viagra, Levitra, and Cialis) have been recently used (Viagra or Levitra within 24 hours; Cialis within 48 hours). NTG then may only be given by ED Physician order

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Symptomatic Bradycardia	
ADULT (HR < 45 BPM)	PEDIATRIC – (14 years and under) (HR < 60 BPM)
BLS Procedures	
<ul style="list-style-type: none"> Administer oxygen as indicated Shock position as tolerated 	<ul style="list-style-type: none"> Administer oxygen as indicated Assist ventilations if needed <ul style="list-style-type: none"> If significant ALOC, initiate CPR
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Vascular access <ul style="list-style-type: none"> Atropine <ul style="list-style-type: none"> IV/IO – 0.5mg Transcutaneous Pacing (TCP) <ul style="list-style-type: none"> Consider early <ul style="list-style-type: none"> Place defibrillator/pacing pads Should be initiated only if patient has signs of hypo perfusion If pain is present during TCP <ul style="list-style-type: none"> Refer to Policy 533-03: Pain Control If symptoms persist for 3 minutes after first atropine dose and if no capture with TCP: <ul style="list-style-type: none"> Atropine <ul style="list-style-type: none"> IV/IO – 0.5mg every 3-5 min Max 0.04mg/kg Consider performing 12-lead ECG <ul style="list-style-type: none"> Refer to Policy 539: 12-Lead ECG If symptoms persist for 3 minutes after first atropine dose and if no capture with TCP: <ul style="list-style-type: none"> Push dose epinephrine <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 10mcg (1mL) every 3 min slow IV push Titrate to SBP >90 Refer to Policy 533-10: Push Dose Epinephrine Suspected renal failure, patient on dialysis and no dialysis for 3 days or more <ul style="list-style-type: none"> Calcium Chloride <ul style="list-style-type: none"> IV/IO – 1gm over 1 min Repeat x 1 in 10 min 2nd vascular access site <ul style="list-style-type: none"> Sodium bicarbonate (see additional information, below) <ul style="list-style-type: none"> IV/IO – 1mEq/kg Repeat 0.5mEq/kg every 5 min 	<ul style="list-style-type: none"> Vascular access <ul style="list-style-type: none"> Epinephrine 1mg/10mL <ul style="list-style-type: none"> IV/IO – 0.01mg/kg (0.1 mL/kg) every 3-5 min Consider performing 12-lead ecg. <ul style="list-style-type: none"> Refer to Policy 539: 12-Lead ECG If symptoms continue to persist after treatment <ul style="list-style-type: none"> Push dose epinephrine <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> Withdraw 10mL of solution using 10mL syringe <ul style="list-style-type: none"> Patient weight <10kg <ul style="list-style-type: none"> Administer 1mcg/kg (0.1mL/kg) every 3min IV push Patient weight 10kg or greater <ul style="list-style-type: none"> Administer 10mcg (1mL) every 3 min IV push Titrate to weight appropriate SBP <ul style="list-style-type: none"> Refer to Appendix A Onset: 1 minute Refer to Policy 533-10: Push Dose Epinephrine Suspected renal failure, patient on dialysis and no dialysis for 3 days or more <ul style="list-style-type: none"> Calcium Chloride <ul style="list-style-type: none"> IV/IO – 20mg/kg over 1 min Repeat x 1 in 10 min 2nd vascular access site <ul style="list-style-type: none"> Sodium bicarbonate (see additional information, below) <ul style="list-style-type: none"> IV/IO – 1mEq/kg Repeat 0.5mEq/kg every 5 min

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Base Hospital Orders only	
<p>Consult with ED Physician for further treatment measures</p>	<ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ◆ IV/IO – 0.02mg/kg <ul style="list-style-type: none"> ○ Minimum dose – 0.1mg ○ Maximum single dose 0.5mg ○ Maximum total dose 0.04mg/kg <p>Consult with ED Physician for further treatment measures</p>
Communication Failure Protocol	
<ul style="list-style-type: none"> • If symptoms persist for 3 minutes after first atropine dose and if no capture with TCP <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ◆ IV/IO – 0.5mg every 3-5 min ◆ Max 0.04mg/kg 	
Additional Information	
<ul style="list-style-type: none"> • Calcium Chloride and Sodium Bicarbonate precipitate when mixed. Strongly consider starting / utilizing a second vascular access site (if possible) for administration of Calcium Chloride • If a secondary vascular access site cannot be established, flush with 10mL saline in between. 	<ul style="list-style-type: none"> • Calcium Chloride and Sodium Bicarbonate precipitate when mixed. Strongly consider starting / utilizing a second vascular access site (if possible) for administration of Calcium Chloride • If a secondary vascular access site cannot be established, flush with 10mL saline in between.

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Supraventricular Tachycardia (Heart Rate >160bpm)	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
• Administer oxygen to maintain SPO ₂ >94%	• Administer oxygen to maintain SPO ₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access • Stable – Mild to moderate chest pain/SOB/distress <ul style="list-style-type: none"> ▪ Valsalva maneuver ▪ Adenosine – ONLY FOR REGULAR NARROW COMPLEX TACHYCARDIAS <ul style="list-style-type: none"> ♦ IV/IO – 6mg rapid push immediately followed by 10-20mL NS flush ▪ No conversion or rate control from first Adenosine dose: ▪ Adenosine <ul style="list-style-type: none"> ♦ IV – 12mg rapid push immediately followed by 10-20mL NS flush ♦ May repeat x 1 if no conversion or rate control ▪ BH contact for further direction. • Consider 12 – Lead ECG <ul style="list-style-type: none"> ▪ Refer to Policy 539: 12-Lead ECG • Unstable – ALOC, signs of shock or CHF, severe CP <ul style="list-style-type: none"> ▪ Place on backboard and prepare for synchronized cardioversion ▪ Midazolam <ul style="list-style-type: none"> ♦ IV/IO – 2mg ♦ Should only be given if it does not result in delay of synchronized cardioversion ▪ Synchronized Cardioversion <ul style="list-style-type: none"> ♦ For <i>unstable</i> narrow complex, regular tachycardia (SVT), for atrial flutter, and for rapidly conducting atrial fibrillation <ul style="list-style-type: none"> ○ Use standard energy of 200J, 360J ○ OR energy settings recommended by monitor manufacturer and approved by service provider medical director 	<ul style="list-style-type: none"> • Stable – Mild to moderate chest pain/SOB/distress <ul style="list-style-type: none"> ▪ Valsalva maneuver • Unstable – ALOC, signs of shock or CHF, severe CP <ul style="list-style-type: none"> ▪ Place on backboard and prepare for synchronized cardioversion ▪ Contact Base Hospital

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Base Hospital Orders only	
	<ul style="list-style-type: none"> • Cardioversion per PALS guidelines. <ul style="list-style-type: none"> ▪ 0.5J/kg ▪ (may increase to 2J/kg if initial dose ineffective)
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Adenosine is contraindicated in the following pts: <ul style="list-style-type: none"> ▪ with 2° or 3rd° AV Block, ▪ Sick Sinus Syndrome (except in pt with functioning pacemaker), ▪ irregular wide complex tachycardia ▪ Wolff Parkinson White syndrome ▪ or known hypersensitivity to adenosine • Unless the patient is in moderate or severe distress, consider IV access and transport only. Consider withholding adenosine administration if patient is stable until ED Physician evaluation • Document all ECG strips during adenosine administration and/or synchronized cardioversion 	<ul style="list-style-type: none"> • For the purpose of this policy, Supraventricular Tachycardia is defined as a heart rate greater than 160 • Document all ECG strips during adenosine administration and/or synchronized cardioversion

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WIDE COMPLEX TACHYCARDIA – NOT IN ARREST	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
• Administer oxygen to maintain SPO ₂ >94%	• Administer oxygen to maintain SPO ₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access • Stable – Mild to moderate chest pain/SOB <ul style="list-style-type: none"> ▪ Amiodarone <ul style="list-style-type: none"> ♦ IV/IO – 150mg in 100mL 0.9% normal saline <ul style="list-style-type: none"> ○ Deliver over 10 minutes • Unstable – ALOC, signs of shock or CHF, severe CP <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ IV/IO – 2 mg ♦ Should only be given if it does not result in delay of synchronized cardioversion ▪ Synchronized Cardioversion <ul style="list-style-type: none"> ♦ For unstable V-tach with a pulse <ul style="list-style-type: none"> ○ Use standard energy of 200J, 360J ○ OR energy settings recommended by monitor manufacturer and approved by service provider medical director • Unstable polymorphic VT (Torsades de Pointes): <ul style="list-style-type: none"> ▪ Defibrillation <ul style="list-style-type: none"> ♦ Use the biphasic energy settings that have been approved by service provider medical director. 	<ul style="list-style-type: none"> • Vascular access • Stable – Mild to moderate chest pain/SOB <ul style="list-style-type: none"> ▪ Amiodarone <ul style="list-style-type: none"> ♦ IV/IO – 2.5mg/kg in 100mL 0.9% normal saline <ul style="list-style-type: none"> ○ Deliver over 10 minutes ▪ Contact Base Hospital • Unstable – ALOC, signs of shock or CHF, severe CP <ul style="list-style-type: none"> ▪ Place on backboard and prepare for synchronized Cardioversion ▪ Contact Base Hospital
Base Hospital Orders only	
<ul style="list-style-type: none"> • Torsades de Pointes <ul style="list-style-type: none"> ▪ Magnesium Sulfate <ul style="list-style-type: none"> ♦ IVPB – 2 gm in 100mL 0.9% normal saline infused over 5 min <ul style="list-style-type: none"> ○ May repeat x 1 if Torsades continues or recurs 	<ul style="list-style-type: none"> • Cardioversion per PALS guidelines <ul style="list-style-type: none"> ▪ 0.5 J/kg ▪ (may increase to 2 J/kg if initial dose ineffective) • Consult with ED Physician for further treatment measures

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Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none">• Ventricular tachycardia (VT) is a rate > 150 bpm• Early base hospital contact is recommended in unusual circumstances, e.g. Torsades de Pointes, Tricyclic OD and renal failure.	

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NAUSEA / VOMITING	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
• Administer oxygen to maintain SPO ₂ >94%	• Administer oxygen to maintain SPO ₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Any patient receiving Ondansetron MUST be placed on a cardiac monitor throughout care <ul style="list-style-type: none"> ▪ In the event of any patient entanglement or extrication, place the monitor early and maintain it throughout the extrication ▪ If cardiac monitoring would hamper the extrication process, place it as soon as possible • If moderate to severe nausea or vomiting is present or there is a potential for airway compromise (secondary to suspected/actual head injury): <ul style="list-style-type: none"> ▪ Vascular access ▪ Normal saline <ul style="list-style-type: none"> ♦ IV/IO 1L bolus ▪ Ondansetron <ul style="list-style-type: none"> ♦ PO – 4mg ODT <ul style="list-style-type: none"> ○ May repeat x 1 in 10 min ♦ IV/IO/IM – 4mg <ul style="list-style-type: none"> ○ May repeat x 1 in 10 min 	<ul style="list-style-type: none"> • Any patient receiving Ondansetron MUST be placed on a cardiac monitor throughout care <ul style="list-style-type: none"> ▪ In the event of any patient entanglement or extrication, place the monitor early and maintain it throughout the extrication ▪ If cardiac monitoring would hamper the extrication process, place it as soon as possible • If moderate to severe nausea or vomiting is present or there is a potential for airway compromise (secondary to suspected/actual head injury): <ul style="list-style-type: none"> ▪ Vascular access ▪ Normal saline <ul style="list-style-type: none"> ♦ IV/IO 20mL/kg (bolus) ♦ May repeat x1 ▪ Ondansetron – 4 years old and greater <ul style="list-style-type: none"> ♦ PO – 4mg ♦ IV/IO/IM – 4mg
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
In the event of prolonged interfacility transfers, ondansetron may be administered hourly, as needed, not to exceed a total dose of 32 mg. Ondansetron is not required for pain control, but should be administered as needed for nausea/vomiting.	In the event of prolonged interfacility transfers, ondansetron may be administered hourly, as needed, not to exceed a total dose of 16 mg in pediatrics. Ondansetron is not required for pain control, but should be administered as needed for nausea/vomiting.

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December 31, 2021

Signature on File

Daniel Shepherd, MD, EMS Medical Director



POISONING / OVERDOSE	
ADULT	PEDIATRIC – (14 years and under)
Public Safety First Aid Optional Skill Procedures	
<ul style="list-style-type: none"> • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Assist ventilations appropriately • Naloxone <ul style="list-style-type: none"> ♦ IN – 4mg via prefilled nasal spray <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ Total max 8mg • Unless it is not possible to do so, an AED should be deployed and utilized to help monitor the patient's condition. • Suspected opiate overdose with NO respiratory effort <ul style="list-style-type: none"> ▪ Begin CPR ▪ Place AED and follow directions 	<ul style="list-style-type: none"> • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Assist ventilations appropriately • Naloxone <ul style="list-style-type: none"> ♦ IN – 4mg via prefilled nasal spray <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ Total max 8mg • Unless it is not possible to do so, an AED should be deployed and utilized to help monitor the patient's condition. • Suspected opiate overdose with NO respiratory effort <ul style="list-style-type: none"> ▪ Begin CPR ▪ Place AED and follow directions
BLS Procedures	
<ul style="list-style-type: none"> • Decontaminate if indicated • Administer oxygen to maintain SPO₂ >94% • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Assist ventilations appropriately • Naloxone <ul style="list-style-type: none"> ♦ IN – 2mg (1mg per nostril) via MAD <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ IN – 4mg via prefilled nasal spray <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ Total max 8mg 	<ul style="list-style-type: none"> • Decontaminate if indicated • Administer oxygen to maintain SPO₂ >94% • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Assist ventilations appropriately • Naloxone <ul style="list-style-type: none"> ♦ IN – 2mg (1mg per nostril) via MAD <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ IN – 4mg via prefilled nasal spray <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ Total max 8mg
Expanded Scope	
<ul style="list-style-type: none"> • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Naloxone <ul style="list-style-type: none"> ♦ IM – 2mg <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ Total max 8mg 	<ul style="list-style-type: none"> • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Naloxone <ul style="list-style-type: none"> ♦ IM – 0.1mg/kg <ul style="list-style-type: none"> ○ May repeat x1 in 3 minutes to maintain respirations greater than 12/min ♦ Total max 8mg

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Angelo Salvucci, MD, EMS Medical Director



ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access • Oral ingestion within 1 hour, awake and gag reflex present: <ul style="list-style-type: none"> ▪ Activated Charcoal <ul style="list-style-type: none"> ♦ PO – 1gm/kg ♦ Max 50gm • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Naloxone <ul style="list-style-type: none"> ♦ IV/IO – 0.4mg every 1 min <ul style="list-style-type: none"> ◦ May repeat as needed to maintain respirations greater than 12/min ♦ Total max 8mg • Tricyclic Antidepressant Overdose <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV – 1mEq/kg • Stimulant/Hallucinogen Overdose/Excited Delirium <ul style="list-style-type: none"> ▪ Refer to Policy 533-08: Behavioral Emergencies: Excited delirium 	<ul style="list-style-type: none"> • Vascular access • Oral ingestion within 1 hour, awake and gag reflex present: <ul style="list-style-type: none"> ▪ Activated Charcoal <ul style="list-style-type: none"> ♦ PO – 1gm/kg ♦ Max 25gm • Suspected opiate overdose with respirations less than 12/min: <ul style="list-style-type: none"> ▪ Naloxone <ul style="list-style-type: none"> ♦ IV/IM/IO – 0.1mg/kg <ul style="list-style-type: none"> ◦ May repeat as needed to maintain respirations greater than 12/min ♦ Total max 8mg • Tricyclic Antidepressant Overdose <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV – 1 mEq/kg • Stimulant/Hallucinogen Overdose/Excited Delirium <ul style="list-style-type: none"> ▪ Refer to Policy 533-08: Behavioral Emergencies: Excited delirium
Base Hospital Orders only	
<ul style="list-style-type: none"> • Beta Blocker Overdose <ul style="list-style-type: none"> ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 2mg ♦ <i>May give up to 10 mg if available</i> • Calcium Channel Blocker Overdose <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 1gm over 1 min ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 2mg ♦ <i>May give up to 10 mg if available</i> • Organophosphate Poisoning <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ♦ IV – 2mg every 1 min ♦ <i>Repeat until symptoms are relieved</i> 	<ul style="list-style-type: none"> • Calcium Channel Blocker Overdose <ul style="list-style-type: none"> ▪ Calcium Chloride <ul style="list-style-type: none"> ♦ IV/IO – 20mg/kg over 1 min ▪ Glucagon <ul style="list-style-type: none"> ♦ IV/IO – 0.1mg/kg ♦ <i>May give up to 10 mg if available</i> • Organophosphate Poisoning <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ♦ IV/IO – 0.02mg/kg every 1 min ♦ Minimum dose – 0.1mg ♦ <i>Repeat until symptoms are relieved</i>
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures

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Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • For Caustic/Corrosive or petroleum distillate ingestions, DO NOT GIVE CHARCOAL OR INDUCE VOMITING • For Tricyclic Antidepressant Overdose, DO NOT GIVE CHARCOAL • If chest pain present DO NOT GIVE ASPIRIN <ul style="list-style-type: none"> ▪ Assess and provide pain control as appropriate ♦ Refer to Policy 533-03: Pain Control • Organophosphate poisoning – SLUDGE <ul style="list-style-type: none"> ▪ S – Salivation ▪ L – Lacrimation ▪ U – Urination ▪ D – Defecation ▪ G – Gastrointestinal Distress ▪ E – Elimination (vomiting) • Naloxone – it is not necessary that the patient be awake and alert. Administer until max dosage is reached or RR greater than 12/min. When given to chronic opioid patients, withdrawal symptoms may present. 	<ul style="list-style-type: none"> • For Caustic/Corrosive or petroleum distillate ingestions, DO NOT GIVE CHARCOAL OR INDUCE VOMITING • For Tricyclic Antidepressant Overdose, DO NOT GIVE CHARCOAL • If chest pain present DO NOT GIVE ASPIRIN <ul style="list-style-type: none"> ▪ Assess and provide pain control as appropriate ♦ Refer to Policy 533-03: Pain Control • Organophosphate poisoning – SLUDGE <ul style="list-style-type: none"> ▪ S – Salivation ▪ L – Lacrimation ▪ U – Urination ▪ D – Defecation ▪ G – Gastrointestinal Distress ▪ E – Elimination (vomiting) • Naloxone – it is not necessary that the patient be awake and alert. Administer until max dosage is reached or RR greater than 12/min. When given to chronic opioid patients, withdrawal symptoms may present.

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NERVE AGENT POISONING	
<p>The Incident Commander is in charge of the scene and you are to follow his/her direction for entering and exiting the scene. Patients in the hot and warm zones MUST be decontaminated prior to entering the cold zone.</p>	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
Refer to Appendix C – “Chempack Cache Deployment Guide”	Refer to Appendix C – “Chempack Cache Deployment Guide”
Expanded Scope	
Refer to Appendix C – “Chempack Cache Deployment Guide”	Refer to Appendix C – “Chempack Cache Deployment Guide”
ALS Prior to Base Hospital Contact	
<p>Refer to Appendix C – “Chempack Cache Deployment Guide”</p> <ul style="list-style-type: none"> • PRIOR to CHEMPACK ARRIVAL: • Patient’s that are exhibiting obvious signs of exposure (SLUDGE) <p>Hot/Warm Zones</p> <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ♦ IM – 2mg every 5 min ♦ <i>Repeat until symptoms are relieved</i> • Vascular access should only be performed in the cold zone after complete decontamination <p>Cold Zone</p> <ul style="list-style-type: none"> • Vascular access <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ♦ IV/IO – 2mg every 1 min <ul style="list-style-type: none"> ○ <i>Repeat until symptoms are relieved</i> ♦ IM – 2mg every 5 min <ul style="list-style-type: none"> ○ <i>Repeat until symptoms are relieved</i> • For seizures: <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ IM – 10mg OR ♦ IV/IO – 2mg <ul style="list-style-type: none"> ○ <i>Repeat 1 mg every 2 min as needed</i> ○ Max 10mg 	<p>Refer to Appendix C – “Chempack Cache Deployment Guide”</p> <ul style="list-style-type: none"> • PRIOR to CHEMPACK ARRIVAL: • Patient’s that are exhibiting obvious signs of exposure (SLUDGE) <p>Hot/Warm Zones</p> <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ♦ IM – 0.05mg/kg every 5 min ♦ Minimum dose – 0.1mg ♦ <i>Repeat until symptoms are relieved</i> • Vascular access should only be performed in the cold zone after complete decontamination <p>Cold Zone</p> <ul style="list-style-type: none"> • Vascular access <ul style="list-style-type: none"> ▪ Atropine <ul style="list-style-type: none"> ♦ IV/IO – 0.05mg/kg every 1 min <ul style="list-style-type: none"> ○ Minimum dose – 0.1mg ○ <i>Repeat until symptoms are relieved</i> ♦ IM – 0.05mg/kg every 5 min <ul style="list-style-type: none"> ○ Minimum dose – 0.1mg ○ <i>Repeat until symptoms are relieved</i> • For seizures: <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ 13kg to 40kg patient <ul style="list-style-type: none"> ○ IM 5mg ♦ Less than 13kg patient <ul style="list-style-type: none"> ○ IM 0.1mg/kg <ul style="list-style-type: none"> ▪ Max 5mg

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Base Hospital Orders only	
<ul style="list-style-type: none"> • UPON ARRIVAL OF CHEMPACK: <ul style="list-style-type: none"> • CHEMPACK Inventory Includes – <ul style="list-style-type: none"> ♦ Single dose Atropen (0.5mg dose) ♦ Single dose Atropen (1mg dose) ♦ Single dose Atropen (2mg dose) ♦ Atropine Sulfate 0.4mg/mL (20mL) ♦ Pralidoxime 1gm in 20mL ♦ Single dose Pralidoxime Chloride Injection (300mg/2ml) ♦ Diazepam Auto-Injector (10mg/2ml) ♦ Midazolam 5mg/mL 10mL) ♦ Sterile Water (20cc vials) 	<ul style="list-style-type: none"> • UPON ARRIVAL OF CHEMPACK: <ul style="list-style-type: none"> • CHEMPACK Inventory Includes – <ul style="list-style-type: none"> ♦ Single dose Atropen (0.5mg dose) ♦ Single dose Atropen (1mg dose) ♦ Single dose Atropen (2mg dose) ♦ Atropine Sulfate 0.4mg/mL (20mL) ♦ Pralidoxime 1gm in 20mL ♦ Single dose Pralidoxime Chloride Injection (300mg/2ml) ♦ Diazepam Auto-Injector (10mg/2ml) ♦ Midazolam 5mg/mL 10mL) ♦ Sterile Water (20cc vials)
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Diazepam is available in the CHEMPACK and may be deployed in the event of a nerve agent exposure. • The Incident Commander is in charge of the scene and you are to follow his/her direction for entering and exiting the scene. • Patients in the hot and warm zones MUST be decontaminated prior to entering the cold zone. 	<ul style="list-style-type: none"> • Diazepam is available in the CHEMPACK and may be deployed in the event of a nerve agent exposure. • The Incident Commander is in charge of the scene and you are to follow his/her direction for entering and exiting the scene. • Patients in the hot and warm zones MUST be decontaminated prior to entering the cold zone.

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Angelo Salvucci, MD, EMS Medical Director



Shortness of Breath – Upper Airway Obstruction	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • If suspected allergic reaction <ul style="list-style-type: none"> ▪ Refer to Policy 533-07: Anaphylaxis/Allergic Reaction • Assist patient with prescribed Metered Dose Inhaler if available • Administer oxygen to maintain SPO₂ >94% • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL <ul style="list-style-type: none"> ♦ IM – 0.3mg via approved autoinject device • Consider CPAP in severe distress <ul style="list-style-type: none"> ▪ CPAP <ul style="list-style-type: none"> ♦ 10cm H₂O ♦ If patient is intolerant, may reduce to 5cm H₂O 	<ul style="list-style-type: none"> • If suspected allergic reaction <ul style="list-style-type: none"> ▪ Refer to Policy 533-07: Anaphylaxis/Allergic Reaction • Assist patient with prescribed Metered Dose Inhaler if available • Administer oxygen to maintain SPO₂ >94% • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine <ul style="list-style-type: none"> ♦ Approved BLS autoinject device <ul style="list-style-type: none"> ○ 0.15mg for 15 to 30kg patients ○ 0.3mg for >30kg patients • Consider CPAP if 3 years old or greater and in severe distress <ul style="list-style-type: none"> ▪ CPAP <ul style="list-style-type: none"> ♦ 5cm H₂O
Expanded Scope	
<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6mL) ♦ <i>Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL <ul style="list-style-type: none"> ♦ IM – 0.3mg 	<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Less than 2 years old <ul style="list-style-type: none"> ♦ Albuterol <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ <i>Repeat as needed</i> ▪ 2 years old and greater <ul style="list-style-type: none"> ♦ Albuterol <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ <i>Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ♦ Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.01mg/kg ○ Max 0.3mg (0.3mL)
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6mL) ♦ <i>*Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL <ul style="list-style-type: none"> ♦ IM – 0.3mg (0.3mL) • Vascular access 	<ul style="list-style-type: none"> • Suspected Croup <ul style="list-style-type: none"> ▪ Normal Saline <ul style="list-style-type: none"> ♦ Nebulizer/Aerosolized Mask – 5 mL • Moderate Distress <ul style="list-style-type: none"> ▪ Less than 2 years old <ul style="list-style-type: none"> ♦ Albuterol <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ <i>*Repeat as needed</i> ▪ 2 years old and greater <ul style="list-style-type: none"> ♦ Albuterol <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ <i>*Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ♦ Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.01mg/kg ○ Max 0.3mg (0.3mL) • Vascular access

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Base Hospital Orders only	
Consult with ED physician for further treatment measures	Consult with ED physician for further treatment measures
Communication Failure Protocol	
<ul style="list-style-type: none"> • Severe Distress <ul style="list-style-type: none"> ▪ If no change is apparent 10 minutes after first epinephrine administration: ▪ Repeat Epinephrine 1mg/mL <ul style="list-style-type: none"> ♦ IM – 0.3mg (0.3mL) 	<ul style="list-style-type: none"> • Severe Distress <ul style="list-style-type: none"> ▪ If no change is apparent 10 minutes after first Epinephrine administration <ul style="list-style-type: none"> ♦ Repeat Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.01mg/kg ○ Max 0.3mg (0.3mL)
Additional Information	
N/A	N/A

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Angelo Salvucci, MD, EMS Medical Director



Shortness of Breath – Lower Airway: Asthma / Pulmonary Edema / COPD	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Assist patient with prescribed Metered Dose Inhaler if available • Administer Oxygen to maintain SPO₂ >94% • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL ♦ IM – 0.3mg via approved autoinjector • CPAP for severe respiratory distress <ul style="list-style-type: none"> ▪ 10cm H₂O ♦ If unable to tolerate mask, may reduce to 5cm H₂O 	<ul style="list-style-type: none"> • Assist patient with prescribed Metered Dose Inhaler if available • Administer Oxygen to maintain SPO₂ >94% • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL ♦ Approved BLS autoinjector <ul style="list-style-type: none"> ○ 0.15mg for 15-30kg patients ○ 0.3mg for >30kg patients • CPAP, if ≥ 3-years-old and in severe respiratory distress <ul style="list-style-type: none"> ♦ 5cm H₂O
Expanded Scope	
<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Albuterol ♦ Nebulizer – 5mg (6mL) ♦ <i>Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL ♦ IM – 0.3mg • Suspected Pulmonary Edema <ul style="list-style-type: none"> ▪ Nitroglycerin <ul style="list-style-type: none"> ♦ SL or lingual spray – 0.4mg every 1 min x 3 ♦ Repeat 0.4mg every 2 min ♦ No max dosage ♦ Hold for SBP <110 mmHg 	<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Less than 2 years old <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ <i>Repeat as needed</i> ♦ 2 years old and Greater <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ <i>Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ♦ Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.01mg/kg ○ Max 0.3mg (0.3mL)

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ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6mL) ♦ <i>*Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ▪ Epinephrine 1mg/mL <ul style="list-style-type: none"> ♦ IM – 0.3mg (0.3mL) • Vascular access • Consider 12-Lead EKG • Suspected Pulmonary Edema <ul style="list-style-type: none"> ▪ Nitroglycerin <ul style="list-style-type: none"> ♦ SL or lingual spray – 0.4mg every 1 min x 3 ♦ Repeat 0.4mg every 2 min ♦ No max dosage ♦ Hold for SBP <110 mmHg ▪ If Hypotension is present: <ul style="list-style-type: none"> ♦ Push-Dose Epinephrine <ul style="list-style-type: none"> ○ IV/IO <ul style="list-style-type: none"> ▪ 10mcg (1mL) every 3 min slow IV push ▪ Titrate to SBP >90 ○ Refer to Policy 533-10: Push Dose Epinephrine 	<ul style="list-style-type: none"> • Moderate Distress <ul style="list-style-type: none"> ▪ Albuterol <ul style="list-style-type: none"> ♦ Less than 2 years old <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ <i>Repeat as needed</i> ♦ 2 years old and Greater <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ <i>Repeat as needed</i> • Severe Distress <ul style="list-style-type: none"> ♦ Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.01mg/kg ○ Max 0.3mg (0.3mL) • Vascular access • Suspected Pulmonary Edema • If Hypotension is present: <ul style="list-style-type: none"> ▪ Push-Dose Epinephrine <ul style="list-style-type: none"> ♦ IV/IO <ul style="list-style-type: none"> ♦ Withdraw 10mL of solution using 10mL syringe <ul style="list-style-type: none"> ○ Patient weighs <10kg <ul style="list-style-type: none"> ▪ Administer 1mcg/kg (0.1mL/kg) every 3min IV push ○ Patient weighs ≥10kg <ul style="list-style-type: none"> ▪ Administer 10mcg (1mL) every 3 min IV push ○ Titrate to weight-appropriate SBP <ul style="list-style-type: none"> ▪ Refer to Appendix A ▪ Onset: 1 minute ♦ Refer to Policy 533-10: Push Dose Epinephrine
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
<ul style="list-style-type: none"> • Severe Distress (other than suspected pulmonary edema) <ul style="list-style-type: none"> ▪ If no change is apparent after 10 minutes of first Epinephrine administration: <ul style="list-style-type: none"> ♦ Repeat Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.3mg (0.3mL) 	<ul style="list-style-type: none"> • Severe Distress (other than suspected pulmonary edema) <ul style="list-style-type: none"> ▪ If no change is apparent after 10 minutes of first Epinephrine administration <ul style="list-style-type: none"> ♦ Repeat Epinephrine 1mg/mL <ul style="list-style-type: none"> ○ IM – 0.01mg/kg ○ Max 0.3mg (0.3mL)
Additional Information	
NA	NA

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SEIZURES	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Protect from injury • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Determine blood glucose 	<ul style="list-style-type: none"> • Protect from injury • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • For suspected febrile seizures, begin passive cooling measures. If seizure activity persists, see below • Administer oxygen to maintain SPO₂ >94% • Determine blood glucose
Expanded Scope	
<ul style="list-style-type: none"> • If blood glucose level <60 <ul style="list-style-type: none"> ▪ Glucagon IM – 1mg 	<ul style="list-style-type: none"> • If blood glucose level <60 <ul style="list-style-type: none"> ▪ Glucagon IM – 0.1mg/kg ▪ Max 1mg
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Known history of diabetes <ul style="list-style-type: none"> ▪ If blood glucose level <60 <ul style="list-style-type: none"> ♦ Vascular access ♦ D10 <ul style="list-style-type: none"> ○ IV/IO – 25gm (250 mL) ♦ No vascular access <ul style="list-style-type: none"> ○ Glucagon <ul style="list-style-type: none"> ▪ IM - 1mg • Vascular access • Persistent Seizure Activity (greater than 5 minutes in length) <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ IM 10mg <i>OR</i> ♦ IV/IO 2mg <ul style="list-style-type: none"> ○ Repeat 1mg every 2 min as needed ○ Max 10mg • 3rd Trimester Pregnancy & No Known Seizure History with either signs and symptoms of eclampsia or active seizures (Refer to Policy 533-36: OB/GYN): <ul style="list-style-type: none"> ▪ Magnesium Sulfate <ul style="list-style-type: none"> ♦ IVPB – 2gm in 100mL 0.9% normal saline over 5 min ♦ MUST Repeat x 1 ♦ Slow or stop infusion if bradycardia, heart block, or decreased respiratory effort occur ▪ Midazolam <ul style="list-style-type: none"> ♦ IM 10mg <i>OR</i> ♦ IV/IO 2mg <ul style="list-style-type: none"> ○ Repeat 1mg every 2 min as needed ○ Max 10mg 	<ul style="list-style-type: none"> • Known history of diabetes <ul style="list-style-type: none"> ▪ If blood glucose level <60 <ul style="list-style-type: none"> ♦ Vascular access ♦ D10 <ul style="list-style-type: none"> ○ IV/IO – 0.5gm/kg (5mL/kg) ○ Max 25gm (250 mL) ♦ No vascular access <ul style="list-style-type: none"> ○ Glucagon <ul style="list-style-type: none"> ▪ IM 0.1mg/kg ▪ Max 1mg • Consider vascular access • Persistent Seizure Activity (greater than 5 minutes in length) <ul style="list-style-type: none"> ▪ Midazolam <ul style="list-style-type: none"> ♦ 13kg to 40kg patient <ul style="list-style-type: none"> ○ IM - 5mg ♦ Less than 13kg patient <ul style="list-style-type: none"> ○ IM – 0.1mg/kg ▪ Max 5mg

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Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Treatment with Midazolam as indicated in the following: <ul style="list-style-type: none"> ▪ Continuous seizures >5 min (or > 2 min in pregnancy) ▪ Repetitive seizures without regaining consciousness • Patients with a known seizure disorder, no longer seizing and with a normal postictal state, AND who have not received ALS interventions, may be treated as a BLS call. 	<ul style="list-style-type: none"> • Treatment with Midazolam as indicated in the following: <ul style="list-style-type: none"> ▪ Continuous seizures >5 min ▪ Repetitive seizures without regaining consciousness • Patients with a known seizure disorder, no longer seizing and with a normal postictal state, AND who have not received ALS interventions, may be treated as a BLS call.

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SHOCK – HYPOVOLEMIA	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> Evaluate patient lung sounds, if lungs clear use passive leg raising Administer oxygen to maintain SPO₂ >94% Hemorrhage Control 	<ul style="list-style-type: none"> Evaluate patient lung sounds, if lungs clear use passive leg raising Administer oxygen to maintain SPO₂ >94% Hemorrhage control
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Vascular access - large bore preferred <ul style="list-style-type: none"> Normal saline IV/IO <ul style="list-style-type: none"> 1L bolus Caution with cardiac and/or renal history Continue to evaluate lung sounds. If signs of CHF, decrease IV/IO to TKO If vital signs return to normal limits, decrease IV/IO to TKO Traumatic Injury – for SBP <90 <ul style="list-style-type: none"> Do not delay transport for vascular access Attempt second IV/IO while enroute to ED Hemorrhage Control <ul style="list-style-type: none"> Tranexamic Acid (TXA) <ul style="list-style-type: none"> IV/IO: <ul style="list-style-type: none"> Infuse 1gm (100mL) TXA over 10 minutes Refer to Policy 533-21c: Tranexamic Acid If shock persists: <ul style="list-style-type: none"> Repeat Normal Saline <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 1L bolus After saline bolus <ul style="list-style-type: none"> Push dose epinephrine <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 10mcg (1mL) every 3 min slow IV push Titrate to SBP >90 Refer to Policy 533-10: Push Dose Epinephrine 	<ul style="list-style-type: none"> Vascular access <ul style="list-style-type: none"> Normal saline IV/IO <ul style="list-style-type: none"> 20mL/kg bolus <ul style="list-style-type: none"> May repeat x1 prior to BH contact Caution with cardiac and/or renal history Continue to evaluate lung sounds. If signs of CHF, decrease IV/IO to TKO If vital signs return to normal limits, decrease IV/IO to TKO Traumatic Injury <ul style="list-style-type: none"> Do not delay transport for vascular access Attempt second IV/IO while enroute to ED If shock persists: <ul style="list-style-type: none"> Repeat normal saline <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 20mL/kg bolus After saline bolus <ul style="list-style-type: none"> Push dose epinephrine <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> Withdraw 10mL of solution using 10mL syringe Patient weight <10kg <ul style="list-style-type: none"> Administer 1mcg/kg (0.1mL/kg) every 3min IV push Patient weight 10kg or greater <ul style="list-style-type: none"> Administer 10mcg (1mL) every 3 min IV push Titrate to weight appropriate SBP <ul style="list-style-type: none"> Refer to Appendix A <ul style="list-style-type: none"> Onset: 1 minute Refer to Policy 533-10: Push Dose Epinephrine
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
N/A	N/A

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SHOCK – SEPSIS	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> Evaluate patient lung sounds, if lungs clear use passive leg raising Administer oxygen to maintain SPO₂ >94% 	<ul style="list-style-type: none"> Evaluate patient lung sounds, if lungs clear use passive leg raising Administer oxygen to maintain SPO₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Vascular access - large bore preferred <ul style="list-style-type: none"> Normal saline <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 1L bolus Caution with cardiac and/or renal history Continue to evaluate lung sounds. If signs of CHF, decrease IV/IO to TKO If vital signs return to normal limits, decrease IV/IO to TKO If shock persists: <ul style="list-style-type: none"> Repeat Normal Saline <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 1L bolus After saline bolus <ul style="list-style-type: none"> Push dose epinephrine <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 10mcg (1mL) every 3 min slow IV push Titrate to SBP >90 Refer to Policy 533-10: Push Dose Epinephrine 	<ul style="list-style-type: none"> Vascular access <ul style="list-style-type: none"> Normal saline <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 20mL/kg bolus <ul style="list-style-type: none"> May repeat x1 prior to BH contact Caution with cardiac and/or renal history Continue to evaluate lung sounds. If signs of CHF, decrease IV/IO to TKO If vital signs return to normal limits, decrease IV/IO to TKO If shock persists: <ul style="list-style-type: none"> Repeat normal saline <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> 20mL/kg bolus After saline bolus <ul style="list-style-type: none"> Push dose epinephrine <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> Withdraw 10mL of solution using 10mL syringe <ul style="list-style-type: none"> Patient weight <10kg <ul style="list-style-type: none"> Administer 1mcg/kg (0.1mL/kg) every 3min IV push Patient weight 10kg or greater <ul style="list-style-type: none"> Administer 10mcg (1mL) every 3 min IV push Titrate to weight appropriate SBP Refer to Appendix A Onset: 1 minute Refer to Policy 533-10: Push Dose Epinephrine
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
N/A	N/A

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Tranexamic Acid (TXA)

ADULT (15 yrs or over)

INDICATIONS	ACTIONS
<ul style="list-style-type: none"> Blunt or penetrating traumatic injury with SBP <= 90 Significant blood loss with ongoing bleeding not controlled by direct pressure, hemostatic agents, or tourniquet application Policies referenced: <ul style="list-style-type: none"> 533-21a: Shock - Hypovolemia 533-24: Chest, Abdomen, Pelvis Trauma 533-25: Spinal Trauma 533-26: Extremity Trauma 533-28: Crush Injury <p style="text-align: center;">ONSET/DURATION</p> <ul style="list-style-type: none"> Onset of Action: 20 minutes to 2 hours Duration of Action: 2-8 hours 	<ul style="list-style-type: none"> Inhibits conversion of plasminogen to plasmin Reduces fibrinolysis and clot breakdown Stabilizes clot formation <p style="text-align: center;">CONTRAINDICATIONS</p> <ul style="list-style-type: none"> Patients less than 15 years of age Greater than 3 hours post injury Isolated head injury Isolated spinal shock: Spinal injury with motor signs and hypotension Isolated extremity hemorrhage when bleeding has been controlled Active thrombolytic event (within 24 hours); i.e., active stroke, myocardial infarction, pulmonary embolus or DVT Hypersensitivity or anaphylactic reaction to TXA Traumatic arrest with >5 min of CPR without return of vital signs Drowning or hanging victims

BLS Procedures

N/A

Expanded Scope

N/A

ALS Prior to Base Hospital Contact

MIXING the CONCENTRATION
<ul style="list-style-type: none"> Maintain sterile technique Label the bag with the drug name and final concentration <ul style="list-style-type: none"> Example: "TXA 1gm in 100mL" 10mg/mL concentration <ul style="list-style-type: none"> Supplies needed: <ul style="list-style-type: none"> 1- 1gm Tranexamic Acid (TXA) 1- 100mL bag of 0.9% saline (Normal Saline) Mixing instructions: <ul style="list-style-type: none"> 1gm of TXA into 100mL NS bag <p style="text-align: center;">ADMINISTRATION</p> <ul style="list-style-type: none"> Vascular Access <ul style="list-style-type: none"> IV/IO <ul style="list-style-type: none"> Infuse 1gm (100mL) TXA over 10 minutes



STROKE
ADULT
BLS Procedures
<ul style="list-style-type: none"> • Perform LOC and neurological assessment <ul style="list-style-type: none"> ▪ Utilize the Cincinnati Stroke Scale: <ul style="list-style-type: none"> ♦ Facial Droop ♦ Arm Drift ♦ Speech • Airway management protocol as needed (Refer to Policy 533-02: Airway Management) • Administer oxygen to maintain SPO₂ 94%-99% • C-spine immobilization if evidence of trauma • Check for Medical Alert Bracelet/Advanced Directive • Determine blood glucose – (Refer to Policy 533-06: Altered Neurological Function)
Expanded Scope
<ul style="list-style-type: none"> • If blood glucose <60 <ul style="list-style-type: none"> ▪ Glucagon <ul style="list-style-type: none"> ♦ IM – 1mg
ALS Prior to Base Hospital Contact
<ul style="list-style-type: none"> • Cardiac Monitor • Vascular access <ul style="list-style-type: none"> ▪ Normal saline <ul style="list-style-type: none"> ♦ IV/IO TKO or saline lock ♦ Maintain SBP>110, re-evaluating after each 500 mL <ul style="list-style-type: none"> ○ MAX 1L • Base hospital report: include time last known well <ul style="list-style-type: none"> ▪ If TLKW is <6 hours and patient meets stroke criteria, declare Stroke Alert to the base hospital • Do not delay transport for on-scene assessment • Refer to Policy 550: Stroke System Triage and Destination
Base Hospital Orders only
Consult with ED Physician for further treatment measures
Communication Failure Protocol
N/A

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Additional Information

- Documentation should specifically include:
 - Blood glucose
 - Cincinnati Stroke Scale
 - Time last known well
 - ◆ Name/Contact with TLKW information
 - ◆ If appropriate, consider transporting the person with TLKW history to the ED along with the patient

Cincinnati Stroke Scale Guidelines:

- **Facial Droop**
 - ◆ Normal: Both sides of face move equally
 - ◆ Abnormal: One side of face does not move at all
- **Arm Drift**
 - ◆ Normal: Both arms move equally or not at all
 - ◆ Abnormal: One arm drifts compared to the other
- **Speech**
 - ◆ Normal: Patient uses correct words with no slurring
 - ◆ Abnormal: Slurred or inappropriate words or mute

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HEAD / FACE / NECK TRAUMA	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • C-spine precautions including placing patient supine with the head in the mid-line • Facial trauma special considerations: <ul style="list-style-type: none"> ▪ Check the oropharynx for teeth and dentures ▪ For displaced teeth, place tooth in emergency dental kit, if available ▪ Frequent airway suctioning is needed to prevent aspiration of blood, etc • Eye injuries special considerations: <ul style="list-style-type: none"> ▪ Avoid applying direct pressure to an injured eye ▪ Do not attempt to replace the partially torn globe – stabilize it with a saline soaked gauze ▪ Acid or alkali injuries: irrigate profusely with saline and remove contact lenses if possible ▪ With any eye trauma cover both eyes loosely with a protective dressing ▪ Stabilize impaled objects, do not remove • Head trauma special considerations: <ul style="list-style-type: none"> ▪ Scalp hemorrhage can be life threatening – dress with a pressure dressing • Penetrating trauma special considerations: <ul style="list-style-type: none"> ▪ In patients with penetrating torso or neck injury and unstable vital signs, transportation must be expedited ▪ No C-Collar for penetrating neck injuries; otherwise immobilize the head appropriately • Utilize approved hemostatic dressings where appropriate 	<ul style="list-style-type: none"> • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • C-spine precautions including placing patient supine with the head in the mid-line • Facial trauma special considerations: <ul style="list-style-type: none"> ▪ Check the oropharynx for teeth and dentures ▪ For displaced teeth, place tooth in emergency dental kit, if available ▪ Frequent airway suctioning is needed to prevent aspiration of blood, etc • Eye injuries special considerations: <ul style="list-style-type: none"> ▪ Avoid applying direct pressure to an injured eye ▪ Do not attempt to replace the partially torn globe – stabilize it with a saline soaked gauze ▪ Acid or alkali injuries: irrigate profusely with saline and remove contact lenses if possible ▪ With any eye trauma cover both eyes loosely with a protective dressing ▪ Stabilize impaled objects, do not remove • Head trauma special considerations: <ul style="list-style-type: none"> ▪ Scalp hemorrhage can be life threatening – dress with a pressure dressing • Penetrating trauma special considerations: <ul style="list-style-type: none"> ▪ In patients with penetrating torso or neck injury and unstable vital signs, transportation must be expedited ▪ No C-Collar for penetrating neck injuries; otherwise immobilize the head appropriately • Utilize approved hemostatic dressings where appropriate
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Airway management protocol as needed • <i>Do not intubate head injured patients unless unable to ventilate by BVM</i> • Cardiac Monitor • Vascular access • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP >110, reevaluating after each 500 mL <ul style="list-style-type: none"> ♦ MAX 1L <p style="text-align: right;">(continued)</p>	<ul style="list-style-type: none"> • Airway management protocol as needed • <i>Do not intubate head injured patients unless unable to ventilate by BVM</i> • Cardiac Monitor • Vascular access • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP appropriate for age <ul style="list-style-type: none"> ♦ Refer to Appendix A ▪ NS bolus as needed to achieve above <ul style="list-style-type: none"> ♦ 20mL / kg, may repeat x1 then contact Base Hospital. <p style="text-align: right;">(continued)</p>

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Santa Barbara County EMS
County Wide Protocols

Policy 533 - 23

<ul style="list-style-type: none"> • Determine initial Glasgow Coma Scale Score <ul style="list-style-type: none"> ▪ Report to Base Hospital ▪ Update Base Hospital to any changes in GCS ▪ Refer to Appendix B: Glasgow Coma Scale • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21a: Shock-Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control 	<ul style="list-style-type: none"> • Determine initial Glasgow Coma Scale Score, utilizing Pediatric Modified GCS <ul style="list-style-type: none"> ▪ Report to Base Hospital ▪ Update Base Hospital to any changes in GCS ▪ Refer to Appendix B: Glasgow Coma Scale • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21a: Shock-Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
• For destination, refer to Policy 510: Trauma Triage	• For destination, refer to Policy 510: Trauma Triage

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CHEST / ABDOMEN / PELVIS TRAUMA	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Open chest wound <ul style="list-style-type: none"> ▪ Apply chest seal dressing • Utilize approved hemostatic dressings where appropriate 	<ul style="list-style-type: none"> • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Open chest wound <ul style="list-style-type: none"> ▪ Apply chest seal dressing • Utilize approved hemostatic dressings where appropriate
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access, consider large bore • Cardiac Monitor • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP>90, re-evaluating after each 500mL <ul style="list-style-type: none"> ♦ Max 1L • For pneumothorax/hemothorax, sit patient upright <ul style="list-style-type: none"> ▪ If tension pneumothorax, position appropriately and Needle Thoracostomy. <ul style="list-style-type: none"> ♦ Refer to Policy 536: Needle Thoracostomy • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21: Shock-Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control 	<ul style="list-style-type: none"> • Vascular access, consider larger bore • Cardiac Monitor • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP appropriate for age; <ul style="list-style-type: none"> ♦ Refer to Appendix A ▪ NS bolus as needed to achieve above <ul style="list-style-type: none"> ♦ 20mL/kg, may repeat x1 then contact Base Hospital • For pneumothorax/hemothorax, sit patient upright <ul style="list-style-type: none"> ▪ If tension pneumothorax, position appropriately and Needle Thoracostomy. <ul style="list-style-type: none"> ♦ Refer to Policy 536: Needle Thoracostomy • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21: Shock-Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A



Additional Information

- Blunt and penetrating trauma can cause extensive multi-organ intra-abdominal injuries with little or no pain or tenderness for the first few minutes or hours. This is especially true in adults with altered sensorium (drugs, alcohol, head or spinal cord injury) and children.
- For Base Hospital and destination refer to [Policy 510: Trauma Triage and Patient Destination](#)

- Blunt and penetrating trauma can cause extensive multi-organ intra-abdominal injuries with little or no pain or tenderness for the first few minutes or hours. This is especially true in adults with altered sensorium (drugs, alcohol, head or spinal cord injury) and children.
- For Base Hospital and destination refer to [Policy 510: Trauma Triage and Patient Destination](#)



SPINAL TRAUMA	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Spinal Immobilization as follows: <ul style="list-style-type: none"> ▪ A patient with a mechanism of injury sufficient to result in a spinal injury meeting any one of the following criteria requires spinal immobilization: <ul style="list-style-type: none"> ♦ Not alert and oriented ♦ Intoxication with alcohol or drugs ♦ Any painful distracting injury ♦ Cervical spine pain ♦ Cervical spine tenderness or deformity ♦ Abnormal strength or sensation in any extremity ▪ Patients who do not meet any of these criteria do not require spinal immobilization 	<ul style="list-style-type: none"> • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Spinal Immobilization as follows: <ul style="list-style-type: none"> ▪ A patient with a mechanism of injury sufficient to result in a spinal injury meeting any one of the following criteria requires spinal immobilization: <ul style="list-style-type: none"> ♦ Not alert and oriented ♦ Intoxication with alcohol or drugs ♦ Any painful distracting injury ♦ Cervical spine pain ♦ Cervical spine tenderness or deformity ♦ Abnormal strength or sensation in any extremity ▪ Patients who do not meet any of these criteria do not require spinal immobilization • The infant and child's large head influences immobilization procedures. Spinal immobilization is not complete until the entire body is secured • Infants and children are less likely to cooperate with immobilization. Well-immobilized children will fight less than those poorly immobilized due to a "swaddling effect"
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Cardiac monitor • Vascular access • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP >90, re-evaluating after each 500mL ♦ Max 1L • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21: Shock – Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control 	<ul style="list-style-type: none"> • Cardiac monitor • Vascular access • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP appropriate for age <ul style="list-style-type: none"> ♦ Refer to Appendix A ▪ NS bolus as needed to achieve above <ul style="list-style-type: none"> ♦ 20mL/kg, may repeat x1 then contact Base Hospital • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21: Shock - Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
For Base Hospital and destination refer to Policy 510: Trauma Triage and Patient Destination	For Base Hospital and destination refer to Policy 510: Trauma Triage and Patient Destination



EXTREMITY TRAUMA	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> Control bleeding with direct pressure, cover open fractures with sterile saline soaked gauze Tourniquet for uncontrollable bleeding <ul style="list-style-type: none"> Refer to Policy 544: Tourniquet Splint all dislocations in position found and transport as soon as possible Apply splints and re-check neurovascular status after any manipulation and periodically en-route For amputations: Bandage wound with dressing moistened with sterile saline Wrap amputated parts in sterile gauze/saline, place in bag, keep cool. Do not place tissue directly in ice. Utilize approved hemostatic dressings where appropriate 	<ul style="list-style-type: none"> Control bleeding with direct pressure, cover open fractures with sterile saline soaked gauze Tourniquet for uncontrollable bleeding <ul style="list-style-type: none"> Refer to Policy 544: Tourniquet Splint all dislocations in position found and transport as soon as possible Apply splints and re-check neurovascular status after any manipulation and periodically en-route For amputations: Bandage wound with dressing moistened with sterile saline Wrap amputated parts in sterile gauze/saline, place in bag, keep cool. Do not place tissue directly in ice. Utilize approved hemostatic dressings where appropriate
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Return extremity to anatomic position if possible as resistance/pain allow Consider vascular access If vital signs normal; <ul style="list-style-type: none"> Normal saline <ul style="list-style-type: none"> IV/IO TKO or saline lock Assess and provide pain control as appropriate <ul style="list-style-type: none"> Refer to Policy 533-03: Pain Control Tourniquet management for uncontrollable bleeding <ul style="list-style-type: none"> Refer to Policy 544: Tourniquet For hypotension: <ul style="list-style-type: none"> Supine position Normal saline <ul style="list-style-type: none"> IV/IO TKO or saline lock Maintain SBP >90, reevaluating after each 500mL <ul style="list-style-type: none"> Max 1L Hemorrhage Control <ul style="list-style-type: none"> Refer to Policy 533-21: Shock - Hypovolemia 	<ul style="list-style-type: none"> Return extremity to anatomic position if possible as resistance/pain allow Consider vascular access If vital signs normal <i>consider</i>; <ul style="list-style-type: none"> Normal saline <ul style="list-style-type: none"> IV/IO TKO or saline lock Assess and provide pain control as appropriate <ul style="list-style-type: none"> Refer to Policy 533-03: Pain Control Tourniquet management for uncontrollable bleeding <ul style="list-style-type: none"> Refer to Policy 544: Tourniquet For hypotension: <ul style="list-style-type: none"> Supine position Normal saline <ul style="list-style-type: none"> IV/IO TKO or saline lock Maintain SBP appropriate for age <ul style="list-style-type: none"> Refer to Appendix A NS bolus as needed to achieve above <ul style="list-style-type: none"> 20mL/kg, may repeat x1 then contact Base Hospital Hemorrhage Control <ul style="list-style-type: none"> Refer to Policy 533-21: Shock - Hypovolemia

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Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Note in history and documentation: Localized swelling, angulation, lacerations, exposed bone, crepitus, neurovascular compromise, estimated blood loss. • For Base Hospital and destination refer to Policy 510: Trauma Triage and Patient Destination 	<ul style="list-style-type: none"> • Note in history and documentation: Localized swelling, angulation, lacerations, exposed bone, crepitus, neurovascular compromise, estimated blood loss. • For Base Hospital and destination refer to Policy 510: Trauma Triage and Patient Destination

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BURNS	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> Remove rings, constrictive clothing and garments made of synthetic material Assess for chemical, thermal, electrical, or radiation burns and treat accordingly If < 10% Total Body Surface Area (TBSA) is burned, apply sterile saline dressings and elevate burned extremities if possible <ul style="list-style-type: none"> Once area is cooled, remove saline dressings and cover with dry, sterile burn sheets Maintain body heat at all times <ul style="list-style-type: none"> Adjust the transport unit climate to facilitate patient thermoregulation Administer oxygen to maintain SPO₂ >94% 	<ul style="list-style-type: none"> Remove rings, constrictive clothing and garments made of synthetic materia Assess for chemical, thermal, electrical, or radiation burns and treat accordingly If < 10% Total Body Surface Area (TBSA) is burned, apply sterile saline dressings and elevate burned extremities if possible <ul style="list-style-type: none"> Once area is cooled, remove saline dressings and cover with dry, sterile burn sheets Maintain body heat at all times <ul style="list-style-type: none"> Adjust the transport unit climate to facilitate patient thermoregulation Administer oxygen to maintain SPO₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Vascular access Assess and provide pain control as appropriate <ul style="list-style-type: none"> Refer to Policy 533-03: Pain Control If TBSA >10% or hypotension is present: <ul style="list-style-type: none"> Normal saline – IV/IO bolus – 1L 	<ul style="list-style-type: none"> Vascular access Assess and provide pain control as appropriate <ul style="list-style-type: none"> Refer to Policy 533-03: Pain Control If TBSA >10% or hypotension is present: <ul style="list-style-type: none"> Normal saline – IV/IO bolus 20mL/kg may repeat x1 prior to BH contact
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<p>Additional Information:</p>	<p>Additional Information:</p>



Crush Injury / Syndrome	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Perform spinal precautions as indicated • Determine potential vs. actual crush syndrome scenario • Administer oxygen to maintain SPO₂ >94% 	<ul style="list-style-type: none"> • Perform spinal precautions as indicated • Determine potential vs. actual crush syndrome scenario • Administer oxygen to maintain SPO₂ >94%
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Potential crush injury <ul style="list-style-type: none"> ▪ Vascular access ▪ Maintain body heat ▪ Release compression ▪ Monitor for cardiac dysrhythmias • Actual crush syndrome <ul style="list-style-type: none"> ▪ Initiate 2nd vascular access <ul style="list-style-type: none"> ♦ Normal Saline <ul style="list-style-type: none"> ○ IV/IO bolus – 1L ○ <i>*Caution with cardiac and/or renal history</i> • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21: Shock – Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control • For continued shock <ul style="list-style-type: none"> ▪ Repeat Normal Saline <ul style="list-style-type: none"> ♦ IV/IO bolus – 1L • For ongoing extended entrapment and no response to fluid therapy: <ul style="list-style-type: none"> ▪ Push dose epinephrine <ul style="list-style-type: none"> ♦ IV/IO <ul style="list-style-type: none"> ○ 10mcg (1mL) every 3 min slow IV push ○ Titrate to SBP >90 ♦ Refer to Policy 533-10: Push Dose Epinephrine 	<ul style="list-style-type: none"> • Potential crush injury <ul style="list-style-type: none"> ▪ Vascular access ▪ Maintain body heat ▪ Release compression ▪ Monitor for cardiac dysrhythmias • Actual crush syndrome <ul style="list-style-type: none"> ▪ Initiate 2nd vascular access if possible <ul style="list-style-type: none"> ♦ Normal Saline <ul style="list-style-type: none"> ○ IV/IO bolus – 20mL/kg ○ <i>*Caution with cardiac and/or renal history</i> • Hemorrhage Control <ul style="list-style-type: none"> ▪ Refer to Policy 533-21: Shock – Hypovolemia • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control • For continued shock <ul style="list-style-type: none"> ▪ Repeat Normal Saline <ul style="list-style-type: none"> ♦ IV/IO bolus – 20mL/kg • For ongoing extended entrapment and no response to fluid therapy: <ul style="list-style-type: none"> ▪ Push dose epinephrine <ul style="list-style-type: none"> ♦ IV/IO <ul style="list-style-type: none"> ♦ Withdraw 10mL of solution using 10mL syringe <ul style="list-style-type: none"> ○ Patient weight <10kg <ul style="list-style-type: none"> ▪ Administer 1mcg/kg (0.1mL/kg) every 3min IV push ○ Patient weight 10kg or greater <ul style="list-style-type: none"> ▪ Administer 10mcg (1mL) every 3 min IV push ○ Titrate to weight appropriate SBP <ul style="list-style-type: none"> ▪ Refer to Appendix A ▪ Onset: 1 minute ♦ Refer to Policy 533-10: Push Dose Epinephrine

(continued)



Base Hospital Orders only

<ul style="list-style-type: none"> • Actual crush syndrome <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV/IO mix – 1mEq/kg ♦ Added to 1st Liter of Normal Saline ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6mL) ♦ Repeat x 2 ▪ 2nd Vascular access <ul style="list-style-type: none"> ♦ Calcium Chloride (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO - 1gm over 1 minute 	<ul style="list-style-type: none"> • Actual crush syndrome <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV mix– 1mEq/kg ♦ Added to 1st Liter of Normal Saline ▪ Albuterol <ul style="list-style-type: none"> ♦ Less than 2 years old <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ Repeat x 2 ♦ 2 years old and greater <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ Repeat x 2 ▪ 2nd Vascular access <ul style="list-style-type: none"> ♦ Calcium Chloride (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO – 20mg/kg
<p>Consult with ED Physician for further treatment measures</p>	<p>Consult with ED Physician for further treatment measures</p>

Communication Failure Protocol

<ul style="list-style-type: none"> • Actual crush syndrome <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV/IO mix – 1mEq/kg ♦ Added to 1st Liter of Normal Saline ▪ Albuterol <ul style="list-style-type: none"> ♦ Nebulizer – 5mg (6 mL) ♦ Repeat x 2 ▪ 2nd Vascular access <ul style="list-style-type: none"> ♦ Calcium Chloride (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO - 1gm over 1 minute 	<ul style="list-style-type: none"> • Actual crush syndrome <ul style="list-style-type: none"> ▪ Sodium Bicarbonate <ul style="list-style-type: none"> ♦ IV mix– 1mEq/kg ♦ Added to 1st Liter of Normal Saline ▪ Albuterol <ul style="list-style-type: none"> ♦ Less than 2 years old <ul style="list-style-type: none"> ○ Nebulizer – 2.5mg (3mL) ○ Repeat x 2 ♦ 2 years old and greater <ul style="list-style-type: none"> ○ Nebulizer – 5mg (6mL) ○ Repeat x 2 ▪ 2nd Vascular access <ul style="list-style-type: none"> ♦ Calcium Chloride (see additional information, below) <ul style="list-style-type: none"> ○ IV/IO – 20mg/kg
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Additional Information

<ul style="list-style-type: none"> • If elderly or cardiac history is present, use caution with fluid administration. Reassess and treat accordingly. • Dysrhythmias are usually secondary to Hyperkalemia. ECG monitor may show: Peaked T-waves, Absent P-waves, widened QRS complexes, bradycardia • Calcium Chloride and Sodium Bicarbonate precipitate when mixed. Strongly consider starting / utilizing a second IV (if feasible) for administration of Calcium Chloride <ul style="list-style-type: none"> ▪ If using the same access, flush with a minimum of 10mL normal saline between medications 	<ul style="list-style-type: none"> • Dysrhythmias are usually secondary to Hyperkalemia. ECG monitor may show: Peaked T-waves, Absent P-waves, widened QRS complexes, bradycardia • Calcium Chloride and Sodium Bicarbonate precipitate when mixed. Strongly consider starting / utilizing a second IV (if feasible) for administration of Calcium Chloride <ul style="list-style-type: none"> ▪ If using the same access, flush with a minimum of 10mL normal saline between medications
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TRAUMATIC ARREST	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Manage using Cardiac Arrest Management policy. <ul style="list-style-type: none"> ▪ Refer to Policy 533-09: Cardiac Arrest Management (CAM) • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Spinal immobilization as needed. <ul style="list-style-type: none"> ▪ Refer to Policy 533-25: Spinal Trauma 	<ul style="list-style-type: none"> • Manage using Cardiac Arrest Management policy. <ul style="list-style-type: none"> ▪ Refer to Policy 533-09: Cardiac Arrest Management (CAM) • Airway management. <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Spinal immobilization as needed. <ul style="list-style-type: none"> ▪ Refer to Policy 533-25: Spinal Trauma
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Cardiac Monitor • Immediate Transport • Vascular access <ul style="list-style-type: none"> ▪ Normal saline ▪ IV/IO 1-2 large-bore <ul style="list-style-type: none"> • Wide open ▪ Start enroute unless delay in extrication/loading • Treat dysrhythmias per specific Cardiac Arrest Protocol <ul style="list-style-type: none"> ▪ 533-09b Cardiac Arrest – VF/VT ▪ 533-09c Cardiac Arrest – Asystole/PEA • Withhold or terminate resuscitation in traumatic arrest if: <ul style="list-style-type: none"> ▪ Time from arrest to arrival at the nearest Hospital will exceed 20 minutes OR ▪ The patient has remained in Cardiac Arrest after >20 minutes of extended extrication ▪ If the rhythm is asystole or wide complex PEA at a rate of 30 beats per minute or slower, the patient shall be determined to be dead ▪ Refer to Policy 509: Determination of Death • Refer to Policy 510: Trauma Triage and Patient Destination 	<ul style="list-style-type: none"> • Cardiac Monitor • Immediate Transport • Vascular access <ul style="list-style-type: none"> ▪ Normal saline ▪ IV/IO 1-2 large-bore, considering patient size <ul style="list-style-type: none"> • Wide open ▪ Start enroute unless delay in extrication/loading • Treat dysrhythmias per specific Cardiac Arrest Protocol <ul style="list-style-type: none"> ▪ 533-09b Cardiac Arrest – VF/VT ▪ 533-09c Cardiac Arrest – Asystole/PEA • All pediatric resuscitations will be transported to the closest receiving hospital.
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<p>In patients for whom mechanism of injury does not correlate with clinical condition, suggesting a non-traumatic cause of the arrest, a standard resuscitation should be initiated.</p> <p>Prior to terminating resuscitation on traumatic arrest in PEA, consider bilateral needle thoracostomy</p>	<p>In patients for whom mechanism of injury does not correlate with clinical condition, suggesting a non-traumatic cause of the arrest, a standard resuscitation should be initiated.</p> <p>Prior to terminating resuscitation on traumatic arrest in PEA, consider bilateral needle thoracostomy</p>

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BITES & STINGS	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Animal/insect bites: <ul style="list-style-type: none"> ▪ Flush site with sterile water ▪ Control bleeding ▪ Apply bandage • Snake bites/envenomation: <ul style="list-style-type: none"> ▪ Remove rings and constrictions ▪ Immobilize the affected part in dependent position ▪ Avoid excessive activity • Bee stings: <ul style="list-style-type: none"> ▪ If present, remove stinger ▪ Apply ice pack • Jellyfish stings: <ul style="list-style-type: none"> ▪ Rinse with hot water, if available ▪ DO NOT: <ul style="list-style-type: none"> ♦ Rinse with fresh water, alcohol ♦ Rub with wet sand ♦ Apply heat • All other marine animal stings: <ul style="list-style-type: none"> ▪ If present, remove barb ▪ Immerse in hot water, if available • Administer oxygen to maintain SPO₂ >94% 	<ul style="list-style-type: none"> • Animal/insect bites: <ul style="list-style-type: none"> ▪ Flush site with sterile water ▪ Control bleeding ▪ Apply bandage • Snake bites/envenomation: <ul style="list-style-type: none"> ▪ Remove rings and constrictions ▪ Immobilize the affected part in dependent position ▪ Avoid excessive activity • Bee stings: <ul style="list-style-type: none"> ▪ If present, remove stinger ▪ Apply ice pack • Jellyfish stings: <ul style="list-style-type: none"> ▪ Rinse with hot water, if available ▪ DO NOT: <ul style="list-style-type: none"> ♦ Rinse with fresh water, alcohol ♦ Rub with wet sand ♦ Apply heat • All other marine animal stings: <ul style="list-style-type: none"> ▪ If present, remove barb ▪ Immerse in hot water, if available • Administer oxygen to maintain SPO₂ >94%
Expanded Scope	
Consider Policy 533-07: Anaphylaxis/Allergic Reaction	Consider Policy 533-07: Anaphylaxis/Allergic Reaction
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Consider vascular access • Monitor for allergic reaction or anaphylaxis <ul style="list-style-type: none"> ▪ Refer to Policy 533-07: Anaphylaxis/Allergic Reaction • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control 	<ul style="list-style-type: none"> • Consider vascular access • Monitor for allergic reaction or anaphylaxis <ul style="list-style-type: none"> ▪ Refer to Policy 533-07: Anaphylaxis/Allergic Reaction • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • All bites other than snake bites may be treated as a BLS call • For known snake envenomation, consider rapid transport 	<ul style="list-style-type: none"> • All bites other than snake bites may be treated as a BLS call • For known snake envenomation, consider rapid transport

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HEAT EMERGENCIES	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> Place patient in cool environment Initiate active cooling measures (remove clothing, fanning, spray with water) Administer oxygen to maintain SPO₂ >94% Determine blood glucose 	<ul style="list-style-type: none"> Place patient in cool environment Initiate active cooling measures (remove clothing, fanning, spray with water) Administer oxygen to maintain SPO₂ >94% Determine blood glucose
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> Vascular access Normal saline <ul style="list-style-type: none"> IV/IO – Fluid bolus Maintain SBP >110, re-evaluating after each 500mL <ul style="list-style-type: none"> MAX 1L 	<ul style="list-style-type: none"> Vascular access Normal saline <ul style="list-style-type: none"> IV/IO TKO or saline lock Maintain SBP appropriate for age <ul style="list-style-type: none"> Refer to Appendix A NS bolus as needed to achieve above <ul style="list-style-type: none"> 20mL/kg, may repeat x1 then contact Base Hospital
Base Hospital Orders only	
<ul style="list-style-type: none"> If hypotensive after initial IV fluid bolus: <ul style="list-style-type: none"> Repeat Normal Saline IV/IO bolus – 1L 	<ul style="list-style-type: none"> If hypotensive after initial IV fluid bolus: <ul style="list-style-type: none"> Repeat Normal Saline IV/IO bolus – 20mL/kg <ul style="list-style-type: none"> Maintain age appropriate SBP Refer to Appendix A
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
<ul style="list-style-type: none"> If hypotensive after initial IV fluid bolus: <ul style="list-style-type: none"> Repeat Normal Saline IV/IO bolus – 1L 	<ul style="list-style-type: none"> If hypotensive after initial IV fluid bolus: <ul style="list-style-type: none"> Repeat Normal Saline IV/IO bolus – 20mL/kg <ul style="list-style-type: none"> Maintain age appropriate SBP Refer to Appendix A
Additional Information	
<ul style="list-style-type: none"> For heat emergencies involving seizures <ul style="list-style-type: none"> Refer to Policy 533-20: Seizures 	<ul style="list-style-type: none"> For heat emergencies involving seizures <ul style="list-style-type: none"> Refer to Policy 533-20: Seizures

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HYPOTHERMIA	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Monitor vital signs for 1 minute: <ul style="list-style-type: none"> ▪ Acceptable ranges for severe hypothermia ♦ Respiratory Rate: 4-6/minute ♦ Heart rate: 20-30/minute ▪ If no pulse begin chest compressions • Gently move patient to warm environment • Remove wet clothing and replace with dry blankets • Insulate head • Begin passive rewarming • STAT transport if no shivering (indicates core temp below 90°) • Administer oxygen to maintain SPO₂ >94% • For Frostbite: <ul style="list-style-type: none"> ▪ Wrap affected extremity in blankets or clothing ▪ DO NOT rub or otherwise attempt active rewarming 	<ul style="list-style-type: none"> • Monitor vital signs for 1 minute: <ul style="list-style-type: none"> ▪ Acceptable ranges for severe hypothermia ♦ Respiratory Rate: 4-6/minute ♦ Heart rate: 20-30/minute ▪ If no pulse begin chest compressions • Gently move patient to warm environment • Remove wet clothing and replace with dry blankets • Insulate head • Begin passive rewarming • STAT transport if no shivering (indicates core temp below 90°) • Administer oxygen to maintain SPO₂ >94% • For Frostbite: <ul style="list-style-type: none"> ▪ Wrap affected extremity in blankets or clothing ▪ DO NOT rub or otherwise attempt active rewarming
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Vascular access (if needed for medication or fluid administration) <ul style="list-style-type: none"> ▪ If administering fluid, avoid administering cold fluids • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control 	<ul style="list-style-type: none"> • Vascular access (if needed for medication or fluid administration) <ul style="list-style-type: none"> ▪ If administering fluid, avoid administering cold fluids • Assess and provide pain control as appropriate <ul style="list-style-type: none"> ▪ Refer to Policy 533-03: Pain Control
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
Adjust the transport unit climate to facilitate patient warming	Adjust the transport unit climate to facilitate patient warming

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WATER EMERGENCIES	
ADULT	PEDIATRIC – (14 years and under)
BLS Procedures	
<ul style="list-style-type: none"> • Airway management <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Immobilize C-spine as indicated, or if suspected traumatic event <ul style="list-style-type: none"> ▪ Refer to Policy 533-25: Spinal Trauma • Patient flat on gurney (FOR DIVING INJURIES) • Remove wet clothing, keep patient warm & dry 	<ul style="list-style-type: none"> • Airway management <ul style="list-style-type: none"> ▪ Refer to Policy 533-02: Airway Management • Administer oxygen to maintain SPO₂ >94% • Immobilize C-spine as indicated, or if suspected traumatic event <ul style="list-style-type: none"> ▪ Refer to Policy 533-25: Spinal Trauma • Patient flat on gurney (FOR DIVING INJURIES) • Remove wet clothing, keep patient warm & dry
Expanded Scope	
Same as BLS	Same as BLS
ALS Prior to Base Hospital Contact	
<ul style="list-style-type: none"> • Cardiac Monitor • Vascular access • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock ▪ Maintain SBP >110, re-evaluating after each 500 mL <ul style="list-style-type: none"> ♦ MAX 1L 	<ul style="list-style-type: none"> • Cardiac Monitor • Vascular access • Normal saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock • If hypotensive: <ul style="list-style-type: none"> ▪ Normal saline <ul style="list-style-type: none"> ♦ IV/IO bolus 20mL /kg x1 ♦ Maintain age appropriate SBP <ul style="list-style-type: none"> ○ Refer to Appendix A ♦ May repeat x1 PRN prior to BH contact
Base Hospital Orders only	
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Communication Failure Protocol	
N/A	N/A
Additional Information	
<ul style="list-style-type: none"> • Early BH contact, to allow for assigned destination (consider possible hyperbaric capable receiving facility) • Minimize time at scene • Review History and report / document: <ul style="list-style-type: none"> ▪ Use of any drugs, Trauma, Extremes of Age ▪ Location of pain (for decompression injuries) ▪ Dive History: Depth, Time down, Bring the diver's Dive Computer with patient ▪ Abnormal Neurological findings ▪ Skin: Cool skin, especially abdominal wall ▪ Bilateral breath sounds ▪ Subcutaneous emphysema with retro-sternal discomfort. ▪ Dysphagia, hoarseness, crepitus. • Consider associated trauma to C-spine to be present until proven otherwise 	<ul style="list-style-type: none"> • Early BH contact, to allow for assigned destination (consider possible hyperbaric capable receiving facility) • Minimize time at scene • Review History and report / document: <ul style="list-style-type: none"> ▪ Use of any drugs, Trauma, Extremes of Age ▪ Location of pain (for decompression injuries) ▪ Dive History: Depth, Time down, Bring the diver's Dive Computer with patient ▪ Abnormal Neurological findings ▪ Skin: Cool skin, especially abdominal wall ▪ Bilateral breath sounds ▪ Subcutaneous emphysema with retro-sternal discomfort. ▪ Dysphagia, hoarseness, crepitus. • Consider associated trauma to C-spine to be present until proven otherwise



CHILDBIRTH

ADULT

BLS Procedures

- Determine
 - number of pregnancies (gravida)
 - number of deliveries (para)
 - number of spontaneous and/or elective abortions
 - due date (weeks of gestation)
 - onset/duration/frequency/intensity of contractions
 - if a rupture of membranes has occurred (including color)
 - if any expected complications during pregnancy are present
- Visualize to determine if there is crowning or any abnormal presenting part
- Administer oxygen to maintain SPO₂ >94%

PROLAPSED CORD	OTHER PRESENTING PART NOT DELIVERING	DELIVERING
<ul style="list-style-type: none"> ▪ Cover cord with wet saline dressing ▪ Place mother in left-lateral position ▪ Provide constant manual pressure on presenting part to avoid cord compression ▪ Initiate Code-3 transport 	<ul style="list-style-type: none"> ▪ Elevate hips ▪ Place mother in left-lateral position ▪ Initiate Code-3 transport 	<ul style="list-style-type: none"> ▪ Assist delivery while initiating Code-3 transport ▪ Assist with breech delivery while supporting the infant's body (covering to maintain body warmth) ▪ Initiate Code-3 transport

- Initiate Code-3 transport if there is partial delivery of the infant and no further progress after 1-2 minutes
- If the HEAD is crowning, prepare to assist mother with delivery –
 - Guide baby out
 - If infant does not cry vigorously or appears to be having difficulty clearing it's airway
 - ♦ *Suction ONLY if secretions including meconium, causes airway obstruction*
 - ♦ If suctioning, always suction mouth first, then nares
 - Dry and stimulate (rub gently, but briskly with warm towel)
 - Note time of birth
 - Double clamp the cord and cut with sterile scissors between clamps
 - Begin transport
- *Do not wait for placenta to deliver*
 - If placenta delivery is present, assist and package, then gently massage fundus
- *Do not massage fundus until the placenta has delivered*
- If the BUTT is "crowning:"
 - Have the mother push until the butt and legs are out to the mid-calves and then assist the feet out
 - If only one leg is presenting, reach up and bring down the second leg
 - Grab the torso carefully with a towel or blanket (be careful not to squeeze the infant's abdomen)
 - Pull down a loop of cord to allow for further delivery and then rotate baby right or left, whichever is easier, to deliver the top shoulder
 - Raise body to deliver the bottom shoulder
 - Put gloved finger inside mouth and flex the chin toward the chest
 - Gently pivot the baby upward without pulling on the head. An assistant can provide suprapubic pressure to assist you with the delivery
 - Double clamp the cord and cut with sterile scissors or scalpel between clamps
- Neonatal assessment – Apgar score at 1 minute and 5 minutes **post-delivery**



Expanded Scope			
Same as BLS			
ALS Prior to Base Hospital Contact			
<ul style="list-style-type: none"> • Vascular Access • Normal Saline <ul style="list-style-type: none"> ▪ IV/IO TKO or saline lock: ▪ Maintain SBP >90, re-evaluating after each 500mL <ul style="list-style-type: none"> ♦ MAX 1L 			
Base Hospital Orders only			
Consult with ED Physician for further treatment measures			
Communication Failure Protocol			
N/A			
Additional Information			
Refer to Appendix A			
Complete neonatal assessment (APGAR Score) at 1 and 5 minutes post delivery as follows (note: if arriving >5 mins post delivery, use standard neonatal assessment):			
APGAR score	0	1	2
A - Appearance	Blue/Pale	Pink w/ blue extremities	Pink
P - Pulse	Absent	< 100 bpm	> 100 bpm
G - Grimace (reflexes)	Absent	Grimace	Cough/Cry/Sneeze
A - Activity (muscle tone)	Limp	Some flexion	Active
R - Respirations	Absent	Slow	Good cry



NEONATAL RESUSCITATION

28 days and under

BLS Procedures

• **Newly Born Infant**

- Provide warmth, dry briskly and discard wet linen
- Suction ONLY if secretions, including meconium, cause airway obstruction
- Assess while drying infant
 - ♦ Full term (39 weeks)?
 - ♦ Crying or breathing?
 - ♦ Good muscle tone?
 - If "YES" to all three
 - Place skin-to-skin with mother
 - Cover both with dry linen
 - Observe breathing, activity, color
 - If "NO" to any of three
 - Stimulate briefly (<15 seconds)
 - Flick soles of infant's feet
 - Briskly rub infant's back
- Provide warm/dry covering
- Administer oxygen to maintain SPO₂ >94%
- Continue to assess

• **Newly Born Infant of 28 days of age or less**

- Assess Breathing
 - ♦ If crying or breathing, assess circulation
 - ♦ If apneic or gasping
 - Positive pressure ventilations (PPV) with BVM and ROOM AIR at 40-60 breaths per minute for 30 seconds
 - Continue PPV, reassessing every 30 seconds, until infant is breathing adequately
 - ♦ Reassess breathing, assess circulation
 - ♦ Administer oxygen to maintain SPO₂ >94%
- Assess Circulation
 - ♦ If HR between 60 and 100 bpm
 - PPV with BVM and **ROOM AIR** at 40-60 breaths per minute for 30 seconds
 - Continue PPV, reassessing every 30 seconds, until infant maintains HR >100 bpm
 - ♦ If HR <60 bpm
 - CPR at 3:1 ratio for 30 seconds
 - 90/min compressions
 - 30/min ventilations
 - Continue CPR, reassessing every 30 seconds, until HR >60 bpm
 - If no improvement after 90 seconds of ROOM AIR CPR, add supplemental O₂ until HR >100

Expanded Scope

Same as BLS

(continued)

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ALS Prior to Base Hospital Contact
<ul style="list-style-type: none"> • Establish IO line only in presence of CPR • Asystole OR Persistent Bradycardia < 60 bpm or PEA <ul style="list-style-type: none"> ▪ Epinephrine 1mg/10mL <ul style="list-style-type: none"> • IO – 0.01mg/kg (0.1mL/kg) every 3-5 min
Base Hospital Orders only
Consult with ED Physician for further treatment measures
Communication Failure Protocol
N/A
Additional Information
<ul style="list-style-type: none"> • Resuscitation efforts may be withheld for extremely preterm infants (< 23 weeks or < 9 inches long). <ul style="list-style-type: none"> ▪ Sensitivity to the desires of the parent(s) may be considered. ▪ If uncertain as to gestational age, begin resuscitation. • Refer to Appendix A for further reference

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OB / GYN (Pre-eclampsia, Eclampsia, Vaginal Bleeding & Miscarriage)

ADULT

BLS Procedures

- Airway management. Refer to [Policy 533-02: Airway Management](#)
- Administer oxygen to maintain SPO₂ >94%
- Vaginal Bleeding/Spontaneous Abortion:
 - Place pad or large dressing over vaginal opening
 - Save and transport all tissue or fetal remains passed
- Pre-Eclampsia/Eclampsia:
 - Minimize stimulation (lights, noise, other stressors)
 - Left lateral position

Expanded Scope

Same as BLS

ALS Prior to Base Hospital Contact

- Vascular access
- Normal saline
 - IV/IO TKO or saline lock:
 - Maintain SBP >90, re-evaluating after each 500mL
 - ♦ MAX 1L
- Refer to [Policy 533-20: Seizure](#) as needed, including for Magnesium Sulfate administration

Base Hospital Orders only

Consult with ED Physician for further treatment measures

Communication Failure Protocol

N/A

Additional Information

- Spontaneous abortion of a fetus 23 weeks gestational age or greater should be considered a neonatal resuscitation. Refer to [Policy 533-35: Neonatal Resuscitation](#).
- Do not pack the vagina with any material to stop bleeding. A bulky dressing or pad may be used externally to absorb blood flow.
- History/report/documentation should include:
 - Last menstrual period and possibility of pregnancy
 - Duration and amount of any bleeding, estimated blood loss (EBL), passage of the products of conception
 - If pregnant: gestational age of fetus, gravida/para, and anticipated problems (placenta previa, pre-eclampsia, lack of prenatal care, use of narcotics or stimulants, etc.)
 - Presence of contractions, cramping or discomfort
 - Pre-eclampsia or eclampsia: altered mental status or seizures, hypertension

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Pediatric Vital Sign Normal Ranges

(Utilizing AHA PALS Guidelines)

Age Group	Respiratory Rate	Awake Heart Rate	Systolic Blood Pressure	Weight in kilos	Weight in pounds
Newborn	30 - 60	85 - 205	60 - 84	2 - 3	4.5 - 7
Infant (1-12 months)	30 - 60	80 - 140	73 - 105	4 - 10	9 - 22
Toddler (1-3 yrs.)	24 - 40	80 - 130	67 - 106	10 - 14	22 - 31
Preschooler (3-5 yrs.)	22 - 34	80 - 120	79 - 115	14 - 18	31 - 40
School Age (6-12 yrs.)	18 - 30	70 - 110	79 - 115	20 - 42	41 - 92
Adolescent (13+ yrs.)	12 - 16	60 - 100	93 - 131	>50	>110

- The **patient's** normal range should always be taken into consideration.
- Heart rate, BP & respiratory rate are expected to increase during times of fever or stress.
- Respiratory rate on infants should be counted for a full 60 seconds.
- In a clinically decompensating child, the blood pressure will be the **last** to change. Just because your pediatric patient's BP is normal, don't assume that your patient is "stable".
- Bradycardia in children is an ominous sign, usually a result of hypoxia. Act quickly, as this child is extremely critical.

Pediatric Pain Scale Assessment Tool

Wong-Baker FACES® Pain Rating Scale



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APGAR Score

Complete Fetal Assessment (APGAR Score) at 1 and 5 minutes post delivery as follows:

APGAR score	0	1	2
A - Appearance	Blue/Pale	Pink w/ blue extremities	Pink
P – Pulse	Absent	< 100 bpm	> 100 bpm
G – Grimace (reflexes)	Absent	Grimace	Cough/Cry/Sneeze
A – Activity (muscle tone)	Limp	Some flexion	Active
R – Respirations	Absent	Slow	Good cry

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Glascow Coma Scale

ADULT	PEDIATRIC
Eye opening	Eye opening
Spontaneous 4	Spontaneous 4
To speech 3	To speech 3
To pain 2	To pain 2
No response 1	No response 1
Best verbal response	Best verbal response
Oriented and converses 5	Coos, babbles 5
Disoriented and converses 4	Cries but consolable 4
Inappropriate words 3	Persistently irritable 3
Incomprehensible sounds 2	Grunts to pain/restless 2
No response 1	No response 1
Best motor response	Best motor response
Obeys verbal command 6	Normal movements 6
Localizes pain 5	Localizes pain 5
Flexion - withdraws from pain 4	Withdraws from pain 4
Flexion – abnormal 3	Flexion – abnormal 3
Extension 2	Extension 2
No response 1	No response 1
E + V + M = 3 to 15	E + V + M = 3 to 15

Cincinnati Stroke Scale

- **Facial Droop**
 - Normal: Both sides of face move equally
 - Abnormal: One side of face does not move at all
- **Arm Drift**
 - Normal: Both arms move equally or not at all
 - Abnormal: One arm drifts compared to the other
- **Speech**
 - Normal: Patient uses correct words with no slurring
 - Abnormal: Slurred or inappropriate words or mute

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CHEMPACK CACHE DEPLOYMENT Guide

CHEMPACK Cache Information

The CHEMPACK Project, part of the Strategic National Stockpile (SNS) Program, is designed to provide a ‘forward’ and sustainable resource of chemical and nerve agent antidotes throughout the United States. CHEMPACK caches placed in Santa Barbara County are managed by the federal Centers for Disease Control and Prevention (CDC).

There are **two types** of CHEMPACK caches:

- **EMS cache** containers are primarily auto-injectors designed for pre-hospital emergency responder use, but are appropriate for hospital emergency departments as well.
- **HOSPITAL cache**, designed for hospital and treatment center use, has more multi-use vials.

There are **2 EMS caches and 1 hospital cache** in Santa Barbara County:

- Each **EMS cache should treat 450** and each **hospital cache 1,000** patients of 30% mild, 40% moderate, and 30% severe cases.

CHEMPACK logistics:

- CHEMPACK container dimensions: 60.5” (Height) X 32.5” (Width) X 60.5” (Length)
- Total Weight: >700 lbs.
- CHEMPACK cache medications are in boxes that may be removed from the container and transported in passenger vehicles.

For maximum effectiveness, CHEMPACKs need to reach affected patients within 60 minutes.

Authorized CHEMPACK deployment requestors:

- Incident Commander
- Hospital ED Manager
- Santa Barbara County EMS Duty Officer
- Health Officer (Medical/Health Operational Area Coordinator)
- Regional Disaster Medical/Health Coordinator or Specialist
- California Department of Public Health staff
- California Emergency Medical Services Authority staff

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Record the following information when Chempack medications are requested in response to a nerve agent or chemical exposure:	
Location	
Incident Commander Name, Call Sign and Telephone Number	
Incident Command Post Location	
Required Information Prior to Activation:	
Nature and severity of chemical release:	
Estimated number of patients:	
<p>Based on estimated number of patients, the staff housing the CHEMPACK, the requesting hospital or the EMS duty officer will select the appropriate number of cases to deploy.</p> <p>The cases of these medications are inside the Chempack container and may be removed and transported in the back of a passenger or other vehicle.</p>	<p style="text-align: center;">EMS Cache</p> <p>_____ Mark I auto injectors. (1 case of 240 injectors for up to 50 patients. 5 cases per EMS cache-yellow)</p> <p>_____ Diazepam 5 mg/ml auto injector (1 case of 150 injectors for up to 50 patients. 2 cases per EMS cache-green)</p> <p>_____ Atropen 0.5 mg deploy for PEDS (1 case of 144 injectors for up to 50 PEDS. 1 case per EMS cache-purple)</p> <p>_____ Atropen 1.0 mg deploy for PEDS (1 case of 144 injectors for up to 50 PEDS. 1 case per EMS cache-grey).</p> <p style="text-align: center;">Hospital Cache</p> <p style="text-align: center;">includes autoinjectors plus:</p> <p>_____ Diazepam 5 mg/ml in 10 ml vial (25 per case, 26 cases in cache)</p> <p>_____ Atropine Sulfate, 0.4 mg/ml in 20 ml. (100 per case, 9 cases in cache).</p> <p>_____ Pralidoxime 1 gm in 20 ml. (276 per case, 10 cases per cache)</p> <p>_____ Sterile water for injections (100 per case, 28 cases per cache)</p>
Staging location for delivery at the scene:	

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Chempack Deployment Objectives

- **Alert the Chempack custodial sites** to ready the cache for deployment and stand by for further instructions.
- **Determine which caches to transport** based on the number of victims. The Chempack custodial hospital, the EMS duty officer, or receiving hospital will determine which EMS or Hospital CHEMPACKs to deploy and the quantity of items needed from each cache at each location (scene or hospital).
- **Determine route and staging site** for delivery to the scene as well as to receiving hospitals. Incident Commander on scene will provide routing instruction and staging location for delivery.
- **Arrange Code 3 transport** for EMS cache items to the incident site and Hospital cache items to the receiving hospital(s). *Note: Due to proximity, portions of the EMS cache at Goleta Valley Cottage Hospital may be transported for use in a hospital in southern Santa Barbara County.*
- **Notify the Chempack custodial site(s)** of the name of agency(s) which will arrive to take custody of the Chempack assets.
- **Assure that hospitals have secured** their Chempack custodial and receiving hospital sites with their own security personnel or in coordination with Sheriff or PD.

Immediate Concerns

Task		Yes	No	Notes/Time/Who Notified
1.	Alert EMS Duty Officer			
2.	Alert OES			
3.	Alert CHEMPACK Custodial sites. Contact the two CHEMPACK Custodial Sites: <ul style="list-style-type: none"> • Request them to ready their caches. • Tell the custodial agents to stand by for information on who will be making the pick up. • Remind site to arrange for security at Chempack site. 			

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	<p><u>Marian Regional Medical Center (2 caches)</u></p> <p>1400 E. Church St. Santa Maria, CA 93454</p> <p>24/7: (805) 739-3000 or (805) 739-3450 ask for ED Guarena, Director of Pharmacy; or Lisa Zurek, Asst. Director of Pharmacy; or Nursing Supervisor</p> <p>(1) EMS Chempack (for incidents in the field)</p> <p>(1) Hospital Chempack</p> <p><u>Goleta Valley Cottage Hospital (1 cache)</u></p> <p>351 South Patterson Avenue Santa Barbara, CA 93111</p> <p>967-3411 24/7</p> <p><i>GVCH Emergency Department Manager or Environmental Safety Manager</i></p> <p>(1) EMS Chempack (for incidents in the field)</p> <p>NOTE: Due to the time sensitive nature of administration of these antidotes it may be necessary to use some of the medications in the Goleta Valley EMS cache in the hospital settings in southern Santa Barbara.</p> <p>You will likely need to deploy items from the EMS cache to the scene AND items from the hospital or EMS cache to the receiving hospitals.</p>			
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	<p>Note: In order to comply with CDC, DEA and internal procedures concerning controlled substances, for security purposes a custodial agent may elect to call the Sheriff's Communications Center back to verify the validity of the request.</p>			
4.	<p>Based on location and access on scene, EMS duty officer and IC determine the most appropriate EMS and hospital caches to deploy.</p> <p>Note: Each EMS cache can treat up to 450 patients in the field. If more than 450 patients are to be treated in the field, BOTH EMS caches must be deployed.</p> <p>Note: The hospital cache can treat 1,000 patients.</p> <p>Based primarily on the location of the incident, but also taking into account traffic patterns and any other relevant information, EMS duty officer or IC will determine if the Marian West cache or the GVCH cache is most appropriate for deployment to the scene.</p> <p><u>Receiving hospitals will receive medications from the HOSPITAL cache or the Goleta Valley EMS cache.</u></p> <p>Note: You will need to make multiple separate transportation arrangements to move Chempack resources to the scene and to the receiving hospital(s).</p>			

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<p>5.</p>	<p>SB County Communication Center to make code 3 transportation arrangements for:</p> <ul style="list-style-type: none"> • EMS Chempack cache to the staging area indicated by the authorized requestor • Hospital Chempack to receiving hospitals. <p>Note: Due to proximity, in some cases antidotes from the EMS Chempack at GVCH will need to be used at south county hospitals.</p> <p>Note: Time is of critical importance. 60 minute window to administer nerve agent antidotes.</p> <ul style="list-style-type: none"> • Consider all available public safety resources, the traffic situation and other incident-specific factors and use the resource or combination of resources necessary. • Remember, if the entire EMS cache(s) and the hospital cache are deployed, separate transportation will be needed for each. • Relay ETA to the requestor when available. <p>NOTE: Items may be removed from the wheeled Chempack container and transported separately in vehicles. The EMS cache will fit into the backseat of a passenger vehicle.</p> <p><i>For out-of county incidents, transportation arrangements are the responsibility of the requestor. In the interest of public safety, dispatch personnel will take all necessary action to assist out-of-county requestors in coordinating transportation using any</i></p>			
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	<p>resources available within the county including those from cities and CHP.</p> <p>Transportation resources for Marian West Hospital (hospital and EMS) caches:</p> <ul style="list-style-type: none"> • Santa Maria Fire (consider their level of involvement and commitment of resources if the incident is occurring within their jurisdiction – if they are heavily involved in response and suppression activities, consider another alternative) • Sheriff • Santa Barbara County Fire or Santa Maria City Fire • AMR • Santa Maria PD • CHP • Helicopter • CALSTAR • Other code-3 equipped law enforcement, fire or EMS asset • Other air assets <p>Air transport helispot options for Marian West:</p> <p>Have the helicopter meet the ground unit at Marian Hospital’s helispot.</p> <p>If air transport is arranged, be sure to coordinate helispot security and ground transportation at the receiving end.</p> <p>Transportation resources for GVCH (EMS) cache:</p> <ul style="list-style-type: none"> • Sheriff • Santa Barbara County Fire • AMR • CHP • Santa Barbara PD • helicopter 			
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	<ul style="list-style-type: none"> • CALSTAR • Other air assets • Other code-3 equipped law enforcement, fire or EMS asset <p><i>Air transport helispot for GVCH:</i></p> <p>Contact Airport Patrol via SBPD. Have helicopter meet the ground unit at the Santa Barbara Airport at Signature Air.</p> <p>If air transport is arranged, be sure to coordinate helispot security and tarmac access via Airport Patrol. Arrange ground transportation to scene or hospital at the receiving end.</p> <p>Inform IC on scene and receiving hospital of ETA of Chempack assets.</p>			
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6.	The EMS Duty Officer will notify the Regional Disaster Medical Health Coordinator (RDMHC) by calling 562-347-1500 (Main) or 949-981-2865 (c)			
7.	Notify all Santa Barbara, Ventura, and SLO County hospitals and other REDDINet users via REDDINet memo. Include estimated number of victims and which hospitals will receive the HOSPITAL CHEMPACK medications.			
8.	Request that hospitals receiving Chempack medications coordinate security with local law enforcement to assure safeguarding of the cache and protecting the facility and its staff from any crowd control issues. If the venue agency is unable to fill the request, request officers from other agencies on a mutual aid basis.			

Reminders	
★	<i>Time is of the essence. The medications must reach the patients and/or affected first responders within 60 minutes! Take action quickly, particularly when arranging transportation. If one transportation resource alternative cannot rapidly commit, immediately begin looking for another. Be careful not lose too much time waiting for several call backs.</i>
★	Other nearby counties with EMS CHEMPACK caches include: Ventura and San Luis Obispo.

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Approved Abbreviation List

Term	Abbreviation
5% Dextrose in Water	D5W
Abdomen	Abd
Abdominal Aortic Aneurysm	AAA
Above knee amputation	AKA
Acquired Immunodeficiency Syndrome	AIDS
Ad Libitum (as desired)	Ad lib
Advanced Life Support	ALS
Against Medical Advice	AMA
Alcohol	ETOH
Alert and Oriented	A & O
Also Known As	aka
Altered Level Of Consciousness	ALOC
Amount	Amt
Ampule	Amp
Antecubital	AC
Anterior	Ant
Anterior/Posterior	AP
Appointment	Appt
Arterial Blood Gas	ABG
Arteriosclerotic Heart Disease	ASHD
As necessary	prn
As soon as possible	ASAP
Aspirin	ASA
At	@
Arrived to find	ATF
Atrial Fibrillation	A fib, AF
Attention Deficit Hyperactivity Disorder	ADHD
Automated external Defibrillator	AED
Automatic Implantable Cardiac Defibrillator	AICD
Bag Valve Mask	BVM
Basic Life Support	BLS
Birth Control Pill	bcp
Bowel Movement	BM
Bundle Branch Block	BBB
By Mouth	p.o.
By Order Of	per
Cardiac Arrest Management	CAM
Cancer	CA
Carbon Dioxide	CO ₂
Carbon Monoxide	CO
Cardio Pulmonary Resuscitation	CPR
Central Nervous System	CNS
Cerebrospinal Fluid	CSF

Term	Abbreviation
Cerebrovascular Accident	CVA
Cervical Spine	C-Spine
Chest pain	CP
Chief Complaint	CC
Chronic Obstructive Pulmonary Disease	COPD
Circulation, Motor, Sensation	CMS
Congestive Heart Failure	CHF
Continuous Positive Airway Pressure	CPAP
Coronary Artery Bypass Graft	CABG
Coronary Artery Disease	CAD
Cervical, thoracic, lumbar, sacral	CTLS
Date of Birth	DOB
Dead on Arrival	DOA
Defibrillated	Defib
Determination of death	DOD
Delirium Tremens	DTs
Diabetes Mellitus	DM
Dilation and curettage	D & C
Discontinue*	D/C*
Distal Interphalangeal Joint	DIP
Deformity, Contusion, Abrasion, Penetration, Burn, Tenderness, Laceration, Swelling	DCAPBTLs
Do Not Resuscitate	DNR
Doctor of Osteopathy	DO
Drops	gtts
Dyspnea On Exertion	DOE
Electrocardiogram	ECG
Electroencephalogram	EEG
Emergency Department	ED
Emergency Medical Services	EMS
Emergency Medical Technician	EMT
Endotracheal	ET
Equal	=
Estimated	Est
Estimated Time of Arrival	ETA
Etiology	Etiol.
Evening	Pm
Every	q
Every day*	qd*
Eye, ear, nose, throat	EENT
Fahrenheit	F



Santa Barbara County EMS
County Wide Protocols

Policy 533 - Appendix D

Term	Abbreviation
Female	F
Fetal Heart Rate	FHR
Fluid	Fl
Foot	Ft
Foreign body	FB
Four times a day	QID
Fracture	Fx
Gallbladder	GB
Gastrointestinal	GI
Genitourinary	GU
Glasgow Coma Score	GCS
Grain	Gr
Gram	gm
Gravida 1,2,3, etc	G1, G2, G3
Gun Shot Wound	GSW
Gynecological	Gyn
Heart Rate	HR
Hematocrit	Hct
Hemoglobin	Hgb
Hepatitis A Virus	HAV
Hepatitis B Virus	HBV
Hepatitis C Virus	HCV
History	Hx
History and Physical	H & P
Hour of Sleep (bedtime)*	hs*
Human Immunodeficiency Virus	HIV
Hydrochlorothiazide	HCTZ
Hypertension	HTN
Immediately	STAT
Insulin Dependent Diabetes Mellitus	IDDM
Intake and Output	I & O
Intensive Care Unit	ICU
Intercostal Space	ICS
Intracranial Pressure	ICP
Intramuscular	IM
Intraosseous	IO
Intrauterine Device	IUD
Intravenous	IV
Intravenous Push	IVP
Irregular	Irreg
Jugular venous distention	JVD
Kilogram	kg
Kilometer	Km
Labor and Delivery	L & D
Laceration	Lac
Last Menstrual Period	LMP
Lateral	Lat
Left	L
Left Eye*	OD*
Left Lower Extremity	LLE
Left Lower Lobe	LLL
Left Lower Quadrant	LLQ
Left Upper Extremity	LUE

Term	Abbreviation
Left Upper Lobe	LUL
Left Upper Quadrant	LUQ
Less Than	<
Level of Consciousness	LOC
Liters per min	l/min
Lower Extremity	LE
Lumbar Puncture	LP
Left Ventricular Hypertrophy	LVH
Male	M
Medical Doctor	MD
Metered Dose Inhaler	MDI
Microgram	mcg
Milliequivalent	mEq
Milligram	mg
Milliliter	ml
Millimeter	mm
Minute	Min
Morning	am
Morphine Sulphate*	MS*
Motor Vehicle Collision	MVC
Moves all Extremities	MAE
Mass Casualty Incident	MCI
Methicillin Resistant Staphylococcus Aureus	MRSA
Multiple sclerosis	MS
Myocardial Infarction	MI
Nasal cannula	NC
Naso-pharyngeal airway	NPA
NasoTracheal	NT
Nausea/Vomiting	N/V
Negative	neg
Night	Noc
Nitroglycerine	NTG
No Acute Distress	NAD
No Known Allergies	NKA
No Known Drug Allergies	NKDA
Non Insulin Dependent Diabetes Mellitus	NIDDM
Non Rebreather Mask	NRB
Non Steroidal Anti-inflammatory Drugs	NSAID
Normal Saline	NS
Normal Sinus Rhythm	NSR
Not applicable	N/A
Nothing by Mouth	NPO
Obstetrics	OB
Occupational Therapy	OT
Oral Dissolving Tablet	ODT
Operating Room	OR
Oro-pharyngeal airway	OPA
Ounce	oz
Over the Counter	OTC
Overdose	OD
Oxygen	O2
Palpable	Palp

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Santa Barbara County EMS
County Wide Protocols

Policy 533 - Appendix D

Term	Abbreviation
Para, number of pregnancies	Para 1,2,3, etc
Premature Atrial Contraction	PAC
Premature Ventricular Contraction	PVC
Paramedic	PM
Paroxysmal Supraventricular Tachycardia	PSVT
Paroxysmal Nocturnal Dyspnea	PND
Past Medical History	PMH
Patient	pt
Pediatric	Peds
Pediatric Advanced Life Support	PALS
Pelvic Inflammatory Disease	PID
Per Rectum	pr
Percutaneously Inserted Central Catheter	PICC
Phencyclidine	PCP
Physical Exam	PE
Positive	+, pos
Pound	lb
Pregnant	Preg
Premature Ventricular Contraction	PVC
Private/Primary Medical Doctor	PMD
Prior to Arrival	PTA
Privately Owned Vehicle	POV
Pro Re Nata – As Needed	PRN
Pulmonary Embolism	PE
Pulse, Motor, Sensation	PMS
Pulseless Electrical Activity	PEA
Pupils Equal Round and Reactive to Light	PERRL
Range of Motion	ROM
Rapid Sequence Intubation	RSI
Registered Nurse	RN
Respiration	R
Respiratory Rate	RR
Respiratory Therapist	RT
Right	Rt
Right Eye*	OD*
Right Lower Extremity	RLE
Right Lower Lobe	RLL
Right Lower Quadrant	RLQ
Right Middle Lobe	RML
Right Ventricular Hypertrophy	RVH
Ringer's Lactate	LR
Rule Out	R/O
Sexually Transmitted Disease	STD

Term	Abbreviation
Shortness of Breath	SOB
Signs and symptoms	s/s
Sinus Bradycardia	SB
Sinus Tachycardia	ST
Skilled Nursing Facility	SNF
Sodium Bicarbonate	NaHCO3
Sodium Chloride	NaCl
Status post	s/p
Streptococcus	Strep
Subcutaneous*	SQ*
Sublingual	SL
Sudden Acute Respiratory Syndrome	SARS
Sudden Infant Death Syndrome	SIDS
Systolic blood pressure	SBP
Supraventricular Tachycardia	SVT
Tissue Plasminogen Activator	tPA
Temperature	T
Temperature, Pulse, Respiration	TPR
Three Times a Day	TID
Times	X
Time Last Known Well	TLKW
To Keep Open	TKO
Tracheostomy	Trach
Traffic Collision	TC
Transient Ischemic Attack	TIA
Transcutaneous Pacing	TCP
Traumatic Brain Injury	TBI
Treatment	Tx
Tuberculosis	TB
Twice a day	BID
Upper Respiratory Infection	URI
Urinalysis	UA
Urinary Tract Infection	UTI
Ventricular Fibrillation	VF
Ventricular Tachycardia	VT
versus	vs
Vital Signs	VS
Volume	Vol
Water	H2O
Weight	Wt
With	w/
Within Normal Limits	WNL
Without	w/o
Wolf-Parkinson-White	WPW
Year	Yr
Years Old	y/o

*JOINT COMMISSION and ISMP have indicated these abbreviations have a high likelihood of misinterpretation; thereby leading to medical errors, therefore, they are **not** to be used in **handwritten** documentation.

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