PARAMEDIC UPDATE

2023

KERN COUNTY PUBLIC HEALTH

AGENDA

- EMS Staff
- Protocol Format Review
- Protocol Changes
- New Policies
- New Medications
- Tele 911
- HandTevy Update
- Pulse Point
- Paramedic Accreditation Application
- Shielding The Frontline

TRAINING RULES AND REGULATIONS

- **Purpose:**
- To establish standards for Kern County EMS accredited providers who are participating in Kern County Emergency Medical Services Program hosted training.
- **Prohibited Behavior:**
- Participants showcasing prohibited behavior during Kern County EMS hosted training will not be tolerated.
- If participant is suspected of engaging in any prohibited behavior, Kern County EMS personnel will immediately discontinue training and will direct participant(s) to leave training site immediately. Any decision taken by EMS personnel is FINAL.
- Engaging in any of the following activities are considered prohibited behavior by Kern County EMS and will be dealt with accordingly.
  - Causing a disturbance at training site by exhibiting threating, confrontational, or disorderly behavior.
  - Rallying other participants to exhibit prohibited behavior of any kind.
  - Tampering with the training material.
  - Arriving at the testing site under the influence of any mind altering or otherwise prohibited substance. (Including but not limited to prescription medications)
  - Not following direction from EMS personnel at any time.

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EMERGENCY PREPAREDNESS AND DISASTER RESPONSE UNIT

PROTOCOL FORMAT

Public safety, EMT, and Paramedic protocols are in one document.

Adults and Pediatric are on the same page.

Public safety personnel can only perform skills in the top canary yellow section

EMT's can perform any skills in the green BLS section located below the public safety area.

Paramedics will start with the BLS section (**BLS before ALS!**) and move down into the ALS section as needed.

Anything listed in the yellow ALS section is a standing order. Base contact must be attempted for anything in the red "base hospital contact required" section.

PROTOCOL FORMAT REVIEW

- Public safety will start here
- EMT and Paramedic start here
- Paramedics move down as needed
- Anything in the red line section requires base contact

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Remove nearby objects to prevent injury to Patient. Place patient in recovery position on left side • Give Oxygen if available • Request Fire/EMS	• Remove nearby objects to prevent injury to Patient. Place patient in recovery position on left side • Give Oxygen if available • Request Fire/EMS
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Support ABC's • Give Oxygen only if Spo2 < 94% or if in Respiratory Distress • Blood Glucose Check, if hypoglycemic enter appropriate protocol • If Focal seizure, place patient in position of comfort, rapid transport or ALS Rendezvous • If full body tonic/clonic seizure, prepare to support respirations, provide cooling measures if febrile • Spinal motion restriction if trauma is suspected • Rapid transport or ALS rendezvous for repetitive or prolonged seizure activity	• Support ABC's • Give Oxygen only if Spo2 <94% or if in Respiratory Distress • Blood Glucose check, if hypoglycemic enter appropriate protocol • If Focal seizure, place patient in position of comfort, rapid transport or ALS Rendezvous • If full body tonic/clonic seizure, prepare to support respirations. • If febrile seizure, start cooling techniques. Acetaminophen 15 mg/kg PO after seizure has ended and patient can safely swallow. • Spinal motion restriction if trauma is suspected • Rapid transport or ALS rendezvous for repetitive or prolonged seizure activity
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Monitor/Spo2/Blood Glucose Check. **IF ACTIVELY SEIZING GIVE VERSED PRIOR TO BLOOD GLUCOSE CHECK** • If patient actively seizing and is **PREGNANT** give Magnesium Sulfate 4-6 GM IV if patient continues to seize give Versed If > 40 kg Give 10 mg IV/IO/IM/I.N. If < 40 kg Give 5 mg. or 1 mL Max per Nare if given IN • Versed 10 mg if >40 kg 5 mg if < 40 kg **IM/IN ONLY For the first dose.** Repeat doses may be IM/IN/IV/IO. MAX 1 mL per Nare. • If active seizure lasts longer than 10 minutes may repeat dose 1 time, BASE for further direction • If Versed not available give Valium 5 mg/IV/IO if seizure lasts longer than 10 minutes may repeat dose 1-time BASE for further direction	• Monitor/Spo2/Blood Glucose check **IF ACTIVELY SEIZING GIVE VERSED PRIOR TO BLOOD GLUCOSE CHECK,** if hypoglycemia or narcotic overdose enter appropriate protocol • Versed 0.2 mg/kg **IM/IN ONLY For first dose.** Repeat doses may be IM/IN/IV/IO MAX dose 5 mg/ 1 mL per Nare if given IN. • If Versed not available give Valium 0.3 mg/kg IV/IO MAX dose 5 mg Rectal 0.5 mg/kg MAX dose 10 mg • If seizure lasts longer than 10 minutes may repeat dose 1 time. BASE for further direction
Base Hospital Contact Required	**Base Hospital Contact Required**
Versed beyond 2 doses	Versed beyond 2 doses

PROTOCOL CHANGES

DESTINATION DECISION SUMMARY

- Non-Emergent Patients Meeting Waiting Room Criteria (Presented by Chris Parks)
- EMS Equipment and Therapy Status (Presented by Aaron Aumann)

NON-EMERGENT PATIENTS MEETING WAITING ROOM CRITERIA

- Patient can go directly to an emergency department walk-in waiting room
- Must meet following criteria:
  - Patients 18 years of age or older
  - Minor accompanied by a responsible adult
  - Patient can sit unassisted and has reasonable mobility
  - Patient does not have peripheral IV access
  - Patient is not on a 5150 hold or in custody
  - Patient vital signs: **Adults:**

Pulse:	50-120 bpm
Systolic Blood Pressure:	100-180 mm Hg
Diastolic Blood Pressure:	Less than 120 mm Hg
Respiratory Rate:	12-30

Pediatrics: Vital signs appropriate for age. (**Refer to Handtevy Mobile App**)

- If hospital staff decline to sign ePCR, EMS crew shall document staff's name in the narrative along with "refused to sign" in signature box.
- If the criteria is met, patient can be taken directly to the ED walk-in waiting room.
- **MICN approval not required if patient is escorted through public entrance**

EMS EQUIPMENT AND THERAPY STATUS

- Cardiac Monitor
- Oxygen administration
- IVs and Saline Locks
- Transfer of Care

EMS EQUIPMENT AND THERAPY STATUS

- Cardiac Monitor
  - Cardiac monitor may be removed if patient not being treated under ALS protocol

    OR stable pre-ex rhythm (atrial fibrillation, bradycardia, etc.)
  - Patients treated under ALS protocol requiring cardiac monitoring shall remain on cardiac monitor until transfer care is complete.
  - **Base contact is not required to discontinue monitor use if not required by protocol**

EMS EQUIPMENT AND THERAPY STATUS

- Oxygen administration
  - Only administer when treatment protocol requires oxygen and/or SpO2 < 94%
  - Discontinue when not indicated according to protocol
  - **Base contacted not required to discontinue**

EMS EQUIPMENT AND THERAPY STATUS

- IVs and Saline Locks are only Required if,
  - Only if the Treatment protocol requires it

  OR there is a reasonable chance patient's condition may deteriorate

EMS EQUIPMENT AND THERAPY STATUS

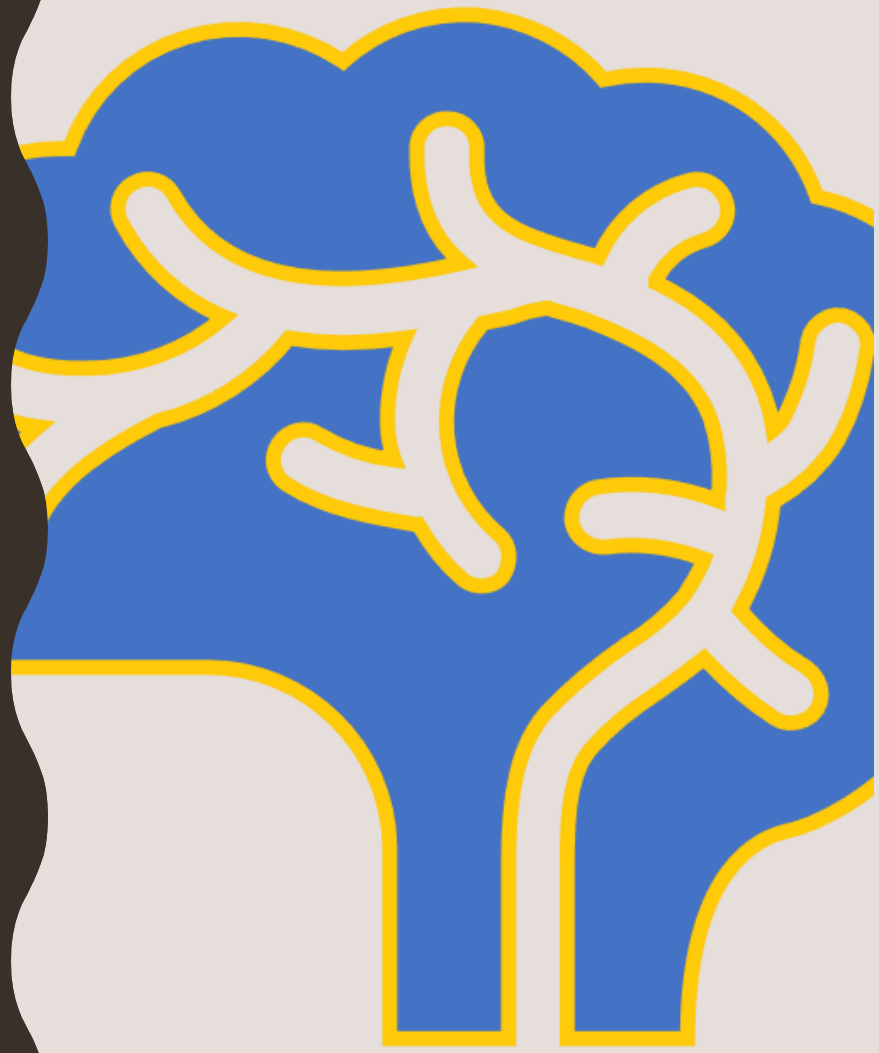
Transfer of care at a hospital

- EMS personnel shall not delay the off-load of a patient from the ambulance and patients shall not be held in ambulances (**patient parking**)
- EMS personnel shall obtain transfer of care signature immediately after patient is transferred off the ambulance gurney.

SEVERE AGITATION

- Originally Excited Delirium (128)
- Medication dose changed
  - Administer Midazolam for agitation control 5mg IM/IN.
  - After 5 minutes, may repeat an additional 5mg IM/IN Midazolam
  - If there is no change in patient condition following the second dose, base contact is required for additional doses.

SEIZURE ACTIVITY



ECLAMPTIC SEIZURE

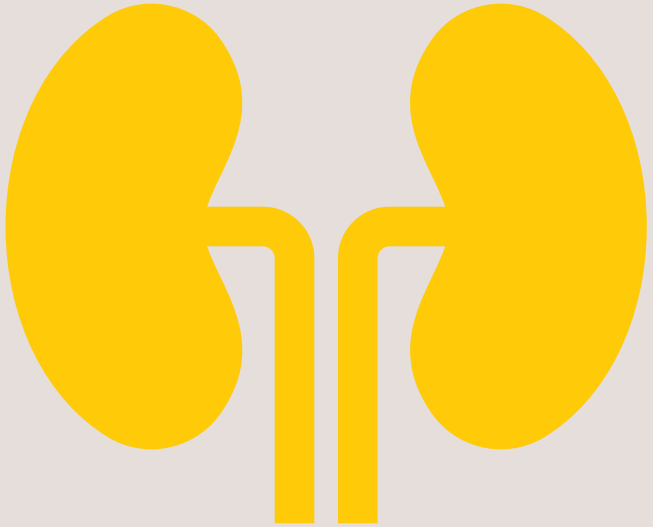
- Actively seizing pregnant or postpartum patient
- Postpartum up to 30 days
- Magnesium Sulfate
- 4-6 grams slow IV drip
  - Over 15 minutes
- If seizing continues after magnesium sulfate administration, give Midazolam
  - 10mg if >40kg
  - OR 5mg if <40kg IM/IN
  - ONLY MAX 1 mL per nare

PEDIATRIC ECLAMPTIC SEIZURE

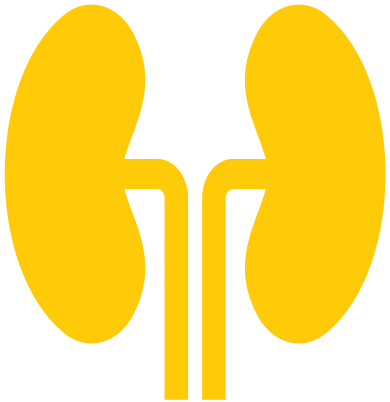
- Actively seizing pediatric pregnant or post partum patient
- Postpartum up to 30 days
- Magnesium Sulfate
- 2 grams slow IV drip
  - Over 15 minutes
- If seizing continues after magnesium sulfate administration, give Midazolam
  - Refer to Handtevy mobile application
  - ONLY MAX 1 mL per nare

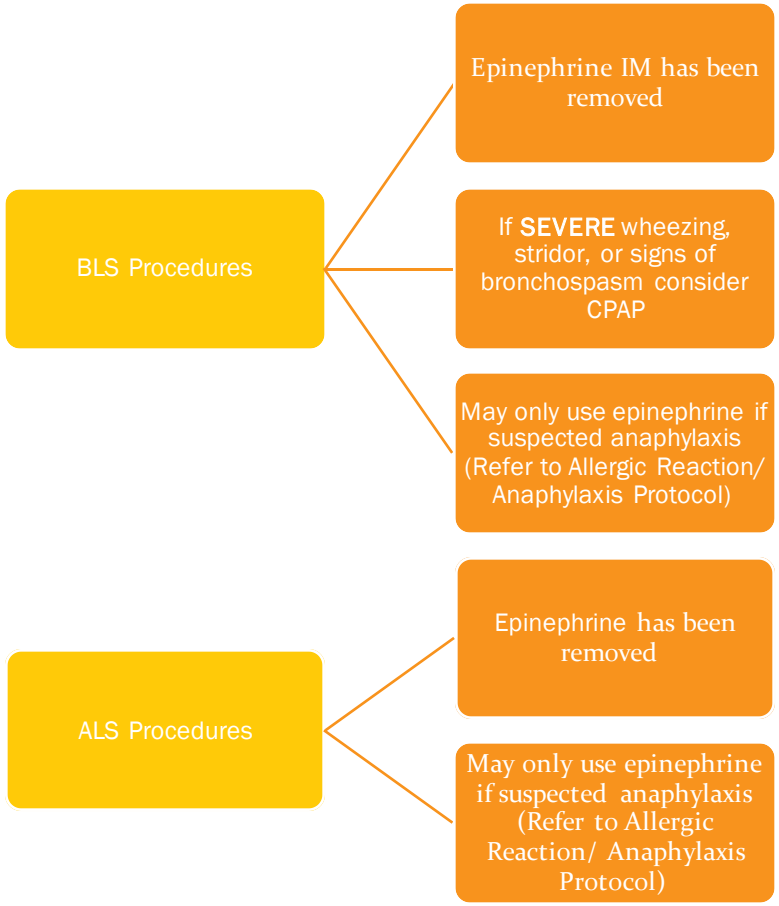
CRICOTHYROTOMY

- Cricothyrotomy removed from
  - Airway Obstruction (101)
  - Intubation (203)



RESPIRATORY COMPROMISE





Current evidence suggests that epinephrine has increased risk versus minimal if any benefit in other etiologies.

ASYSTOLE/ PULSELESS ELECTRICAL ACTIVITY

Use of Epinephrine in cardiac arrest

- If the patient is in PEA or Asystole:
  - Give Epinephrine as a drip @ 2-8 mcg/min.
  - Use 60 drop only
  - 0.8 mg epinephrine 1:1,000 into 100mL bag of Normal Saline
- If the patient is in VFIB or VTACH:
  - Withhold administration of Epinephrine.

V-FIB/ PULSELESS V-TACH

VECTOR CHANGE DEFIBRILLATION

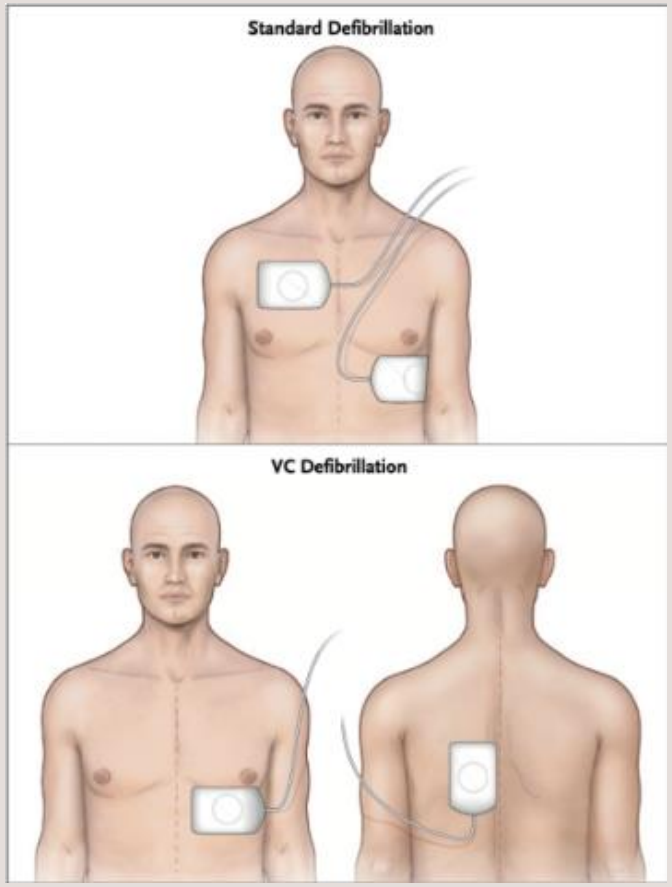
- Give 1 Shock device specific
- Pulse/Rhythm checks every 2 minutes for no longer than 10 seconds
- Repeat shocks during rhythm checks
- If Refractory V-Fib after 3 shocks
  - begin Vector Change pad placement
  - changed D-fib pads from anterior lateral to anterior posterior (Vector Change)

DUAL SEQUENTIAL DEFIBRILLATION

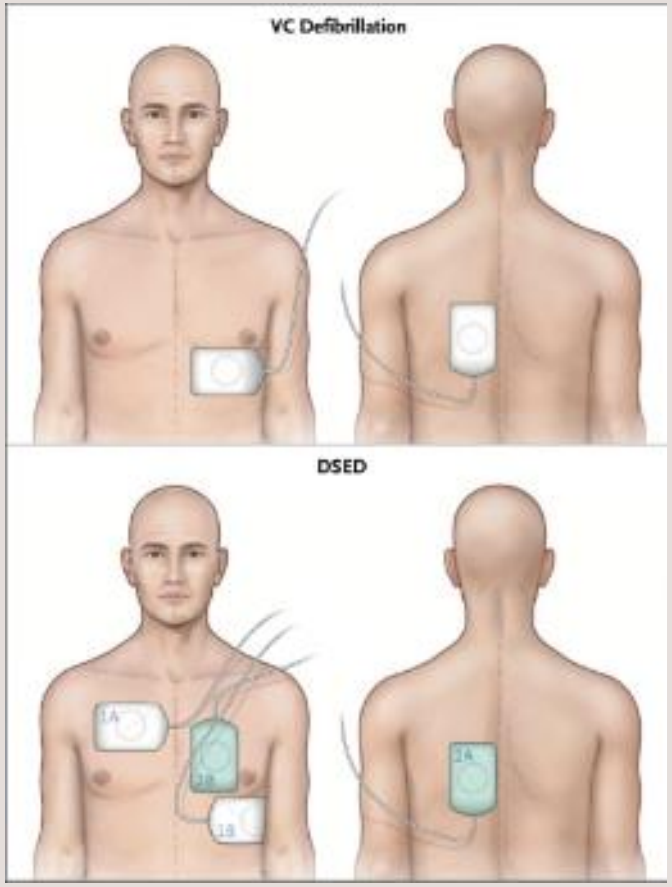
- If no improvement with Vector Change and persistent VF/ pulseless V-Tach, may use dual sequential.
- 2 separate defibrillators
- First defibrillator will remain Vector Change pad placement
- Second defibrillator will be placed on anterior lateral position
- **Only if feasible**
- **Not mandatory!**

V-FIB/ PULSELESS V-TACH

VECTOR CHANGE DEFIBRILLATION



DUAL SEQUENTIAL DEFIBRILLATION



CRUSH INJURY/SYNDROME

- *Crush syndrome:* Also termed rhabdomyolysis, involves a series of metabolic changes produced due to an injury of the skeletal muscles of such a severity as to cause a disruption of cellular integrity and release of its contents into the circulation.

- History: World War 2 first discoveries of disorders from crush survivors.
  - Reported disorders: Kidney injury, renal failure, acute respiratory distress syndrome, hypovolemic shock, and arrhythmias

- *Setting*: Instances where sections of the body are under immense pressure for prolonged periods of time.

PATHOPHYSIOLOGY

- Up to 80% of crush injury patients die due to head injury or asphyxiation in the field
- Of the 20% that receive transport to hospital care, 10% endure uneventful outcomes
- The remaining 10% present with crush syndrome
- Crush and rupture of muscle cells releases myoglobin, which converts to methmyoglobin and finally acid haematin, which is released into the circulation
- Under normal cell function potassium, magnesium, phosphate, acids, enzymes like creatine phosphokinase (CKMM) and lactate dehydrogenase (LDH) are vital to sustain cellular life

PATHOPHYSIOLOGY CONT.

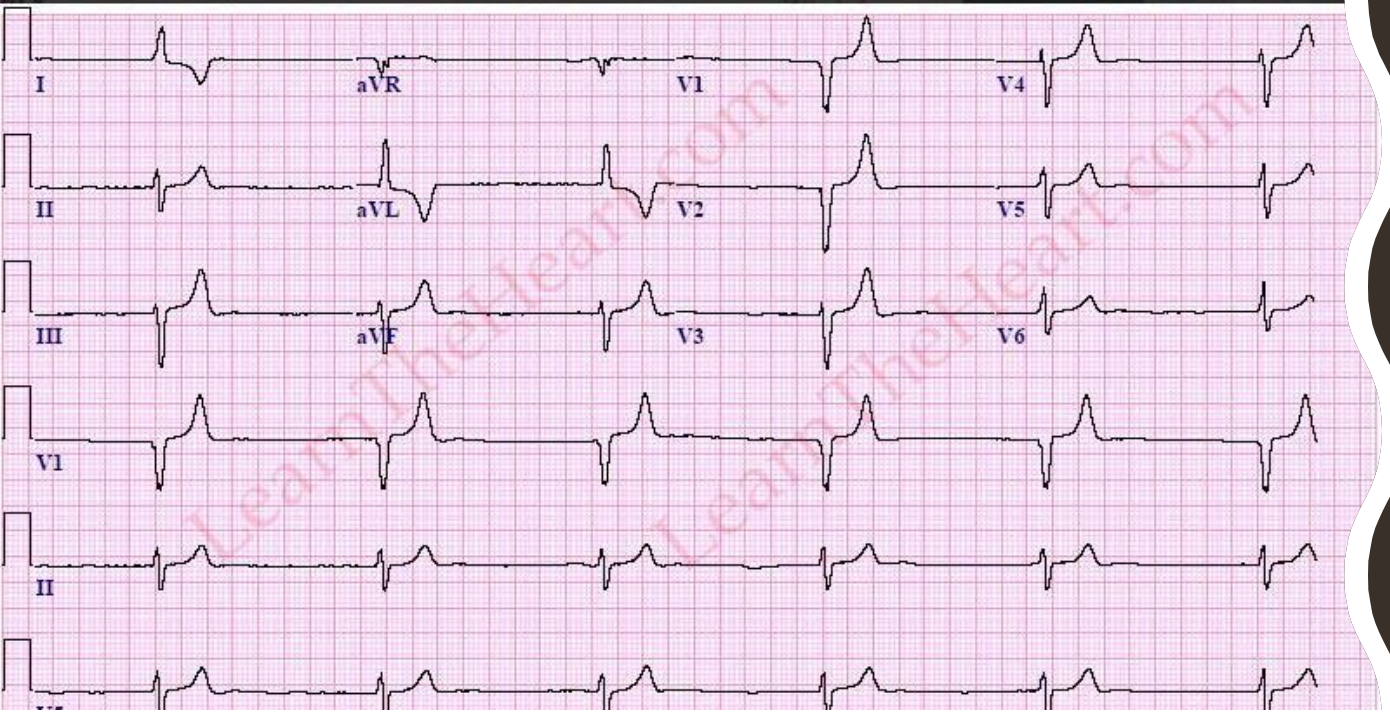
- Casualties deteriorate only after being rescued out of the debris of collapse or entrapment, because once the tissue tension is released, reperfusion to the damaged muscles disrupts sodium-potassium-ATPase mechanism
- In turn the harmful myoglobin products are released into the bloodstream and attempted to be filtered out by the glomerulus (small vessels outside the kidneys)
- Once the glomerulus threshold is met and exceeded, obstruction occurs and renal destruction begins
- Lactic acid level rise, muscles begin to show swelling with hard, cold, necrotic appearance
- Kidneys show increased volume intake which begins to present with excess potassium in the bloodstream, further presenting in arrythmias
- Arrythmias present the ultimate occurrence of shock or respiratory gas exchange disruptions, ultimately setting up cases of ARDS

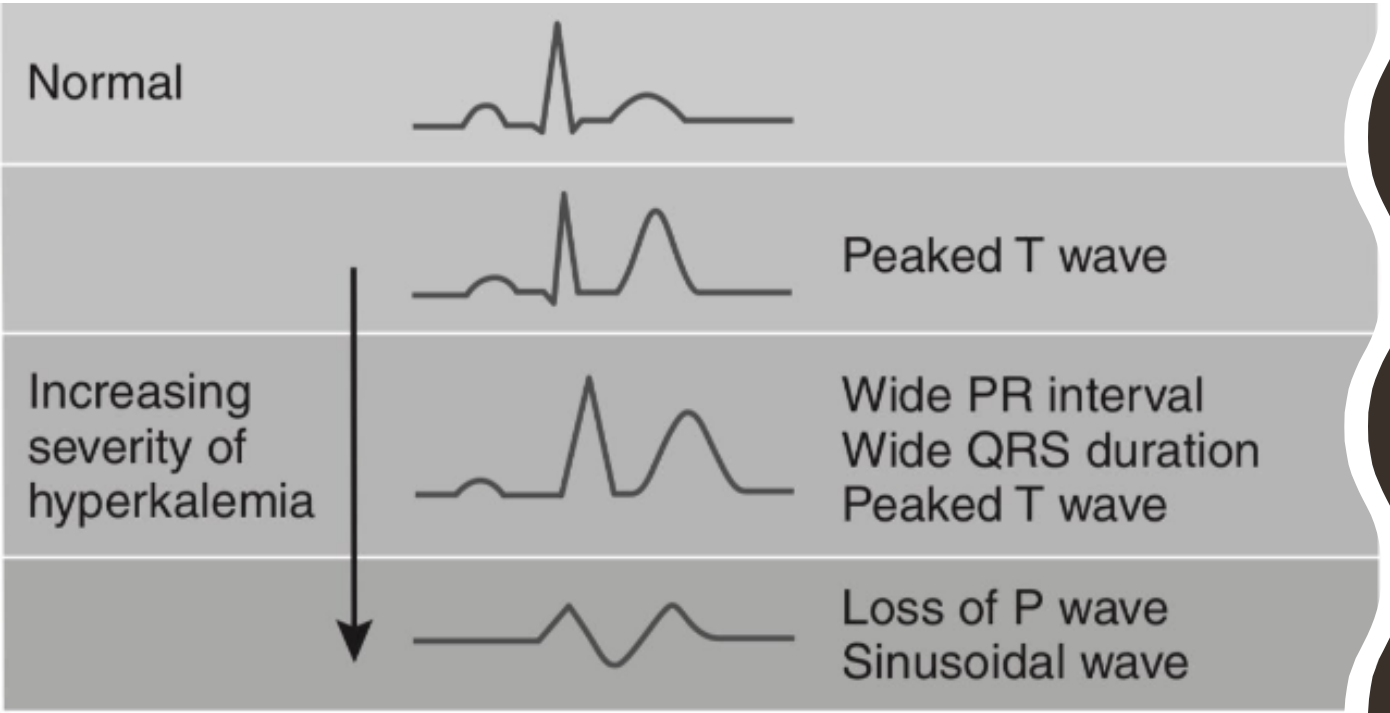
CLINICAL PRESENTATION

- Patients who are under prolonged crush settings can present with:
  - Muscle bruising
  - Muscle paralysis
  - Myalgia
  - Fever
  - Cardiac arrhythmias
  - Tea/cola colored urine
  - Nausea/vomiting
  - Agitation
  - Delirium

TREATMENT

- Goal of crush injuries are rescue, resuscitation, recognition of the syndrome, treatment and rehabilitation
- Recommend transport to hospitals with dialysis capabilities
- Once condition is suspected, aggressively with fluid therapy
- Early fluid resuscitation, within the first 6 hours is essential (at site or prior to release of force if possible)
- Sodium Bicarb administration combats metabolic acidosis
- Calcium Chloride administration for further electrolyte restoration
  - IV Calcium stabilizes the cardiac cell membranes and aids in preventing malignant rhythms
- Albuterol promotes the movement of potassium into cells to help treat the hyperkalemia

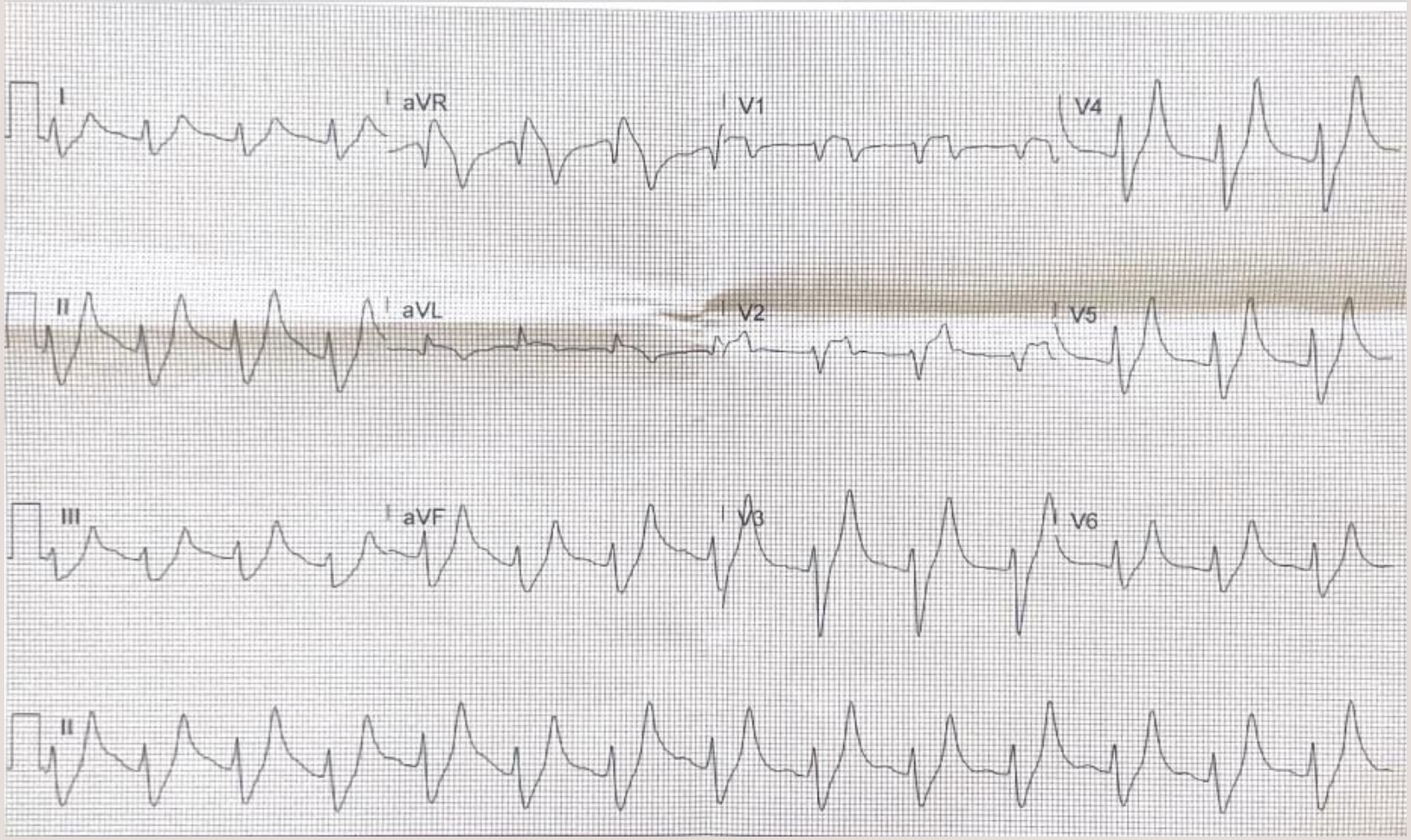




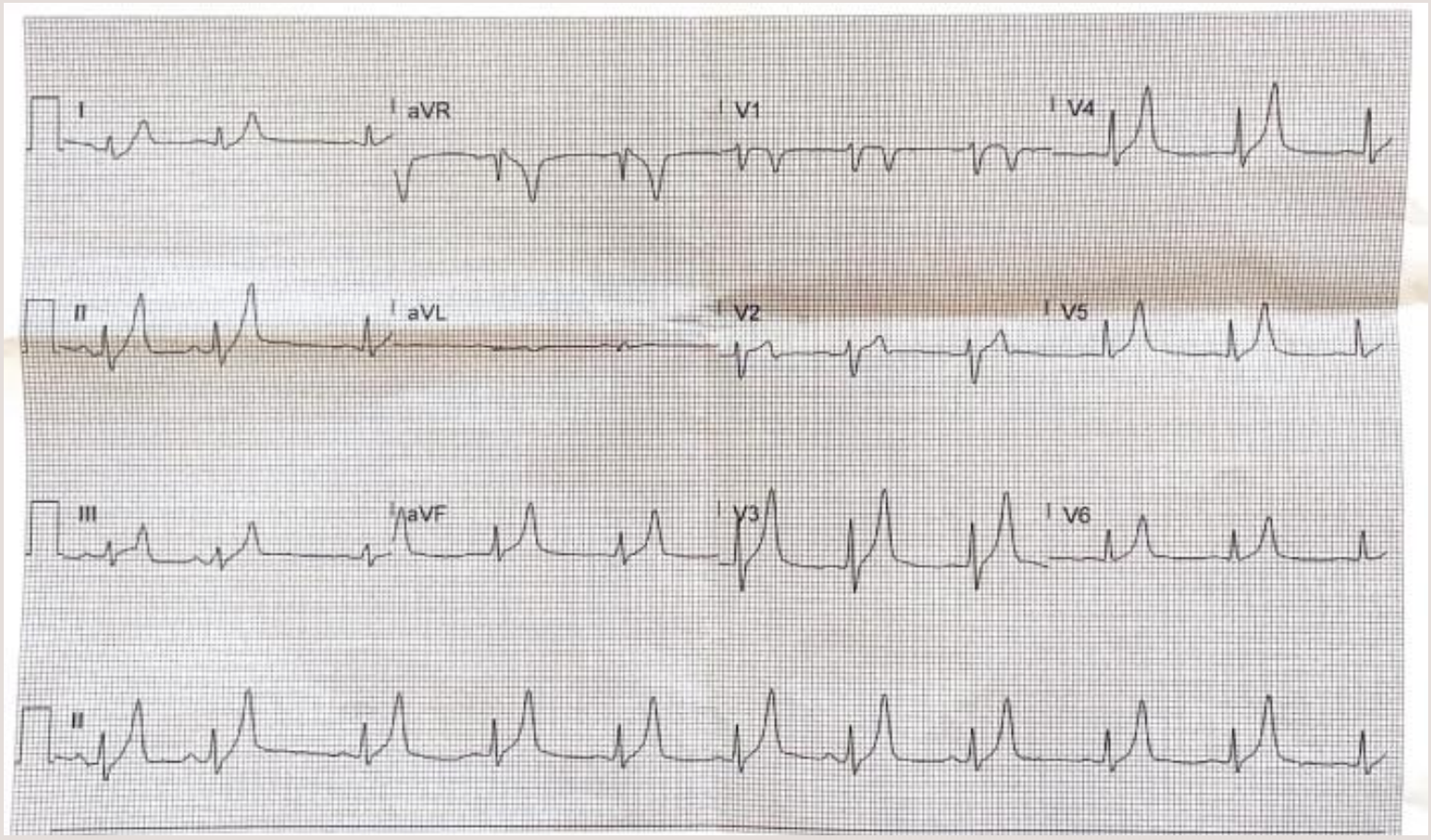
ALS PROCEDURES

- Normal Saline
  - 20ml/kg IV/IO rapid. Prior to release of compressive force
  - May repeat 3 times for a max of 40ml/kg max 2L
- Calcium Chloride
  - 20mg/kg slow IV/IO push
  - Repeat x1 for persistent ECG abnormalities
- Sodium Bicarbonate
  - 1 mEq/kg slow IV/IO push
  - Repeat x1 for persistent ECG abnormalities
- Albuterol
  - 5mg via neb
  - Run continuously until hospital arrival

PRE-CALCIUM CHLORIDE ADMINISTRATION



POST-CALCIUM CHLORIDE ADMINISTRATION



CRUSH INJURY/ SYNDROME

Crush Injury/Syndrome (129)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Assess ABC's • Administer oxygen as needed • Hold manual spinal motion restriction if indicated • Request fire/EMS	• Assess ABC's • Administer oxygen as needed • Hold manual spinal motion restriction if indicated • Request fire/EMS
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Assess ABC's • Administer oxygen as needed • Provide spinal motion restriction if indicated • Apply blanket to keep patient warm • For multi-system trauma, treat in conjunction with Trauma Policies and Procedures. • For anticipated prolonged extrication (> 30 minutes) • Consider Trauma Activation	• Assess ABC's • Administer oxygen as needed • Provide spinal motion restriction if indicated • Apply blanket to keep patient warm • For multi-system trauma, treat in conjunction with Trauma Policies and Procedures. • For anticipated prolonged extrication (> 30 minutes) • Consider Trauma Activation
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Establish IV/IO access. • Initiate cardiac monitoring. • If unable to establish vascular access while entrapped place tourniquet PRIOR to extrication. If patient is at risk for **crush injury syndrome** or if there is **evidence of hyperkalemia** (peaked T-waves in multiple leads, absent p-waves, and/or widened QRS complex) administer: **Calcium Chloride** 20mg/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Sodium Bicarbonate** 1 mEq/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Albuterol** 5mg via neb, repeat continuously until hospital arrival. • For pain management refer to protocol Pain Control/Fever (116) Normal Saline 20mL/kg IV/IO rapid prior to release of compressive force. May repeat x1 for a total of 40mL/kg IV/IO, maximum prior to Base contact 2L. • For nausea or vomiting administer Ondansetron 4mg	• Establish IV/IO access. • Initiate cardiac monitoring. • If unable to establish vascular access while entrapped place tourniquet PRIOR to extrication. If patient is at risk for **crush injury syndrome** or if there is **evidence of hyperkalemia** (peaked T-waves in multiple leads, absent p-waves, and/or widened QRS complex) administer: **Calcium Chloride** 20mg/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Sodium Bicarbonate** 1 mEq/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Albuterol** 5mg via neb, repeat continuously until hospital arrival. • For pain management refer to protocol Pain Control/Fever (116) Normal Saline 20mL/kg IV/IO rapid prior to release of compressive force. May repeat x1 for a total of 40mL/kg IV/IO, maximum prior to Base contact 2L. • For nausea or vomiting administer Ondansetron 4mg
Base Hospital Contact Required	**Base Hospital Contact Required**

- Public Safety First Aid Procedures
- BLS Procedures
- ALS Procedure
- Base Contact

CRUSH INJURY/ SYNDROME

SPECIAL CONSIDERATIONS

- Crush Injury w/o risk of crush syndrome
  - Release compression
  - Extricate patient
  - Monitor cardiac rhythm for hyperkalemia
- Crush Syndrome
  - characterized by dysrhythmias and shock
  - circumferential compression causing crush injury
  - AND involvement of a large muscle group
  - AND entrapment for at least 1hour

- Higher dose of albuterol required for hyperkalemia
  - Blow-by to avoid agitation in pediatric patients if mask cannot be tolerated
- Tourniquet PRIOR to extrication is last resort
  - Vascular access not established
  - Anticipated to be > 30 minutes
  - Tourniquet must completely occlude venous and arterial flow
  - Calcium should be administered first after extrication
- Pediatrics higher risk for hypothermia

NEW POLICIES

TRAUMA TRIAGE

National Guideline for the Field Triage of Injured Patients

RED CRITERIA	High Risk for Serious Injury
YELLOW CRITERIA	Moderate Risk for Serious Injury

UPDATED ACS TRAUMA TRIAGE CRITERIA

RED CRITERIA
High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	**All Patients** • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% **Age 0–9 years** • SBP < 70mm Hg + (2 x age years) **Age 10–64 years** • SBP < 90 mmHg or • HR > SBP **Age ≥ 65 years** • SBP < 110 mmHg or • HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA
Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment
• High-Risk Auto Crash – Partial or complete ejection – Significant intrusion (including roof) • >12 inches occupant site OR • >18 inches any site OR • Need for extrication for entrapped patient – Death in passenger compartment – Child (Age 0–9) unrestrained or in unsecured child safety seat – Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height > 10 feet (all ages)	**Consider risk factors, including:** • Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers **If concerned, take to a trauma center**

ADJUSTED GUIDELINES

- Format and Structure
  - Two categories (red and yellow) vs the 4 steps in 2011 field guidelines
  - Within each risk category, the groups of criteria are listed from left to right to follow the flow of information to EMS
  - Injury patterns criteria are organized from head-to-toe to align with rapid field assessment

INJURY PATTERNS (STEP 2)

	Injury Patterns	All ages	Anatomic criteria (step 2)
New criterion	Active bleeding requiring a tourniquet or wound packing with continuous pressure	All ages	None
Clarified criteria	Skull deformity, suspected skull fracture	All ages	Open or depressed skull fracture
	Suspected spinal injury with new motor or sensory loss	All ages	Paralysis
	Chest wall instability, deformity or suspected flail chest	All ages	Chest wall instability or deformity (e.g., flail chest)
	Suspected pelvic fracture	All ages	Pelvic fractures
	Suspected fracture of two or more proximal long bones	All ages	Two or more proximal long-bone fractures

MENTAL STATUS AND VITAL SIGNS (STEP 1)

	Mental Status and Vital Signs	All ages	Physiologic criteria (step 1)
New criteria	Motor GCS <6 (unable to follow commands)	All ages	GCS ≤13
	Heart rate >SBP	≥10 y	None
	SBP <70 mm Hg + (2 × age in years)	0–9 y	None
	Respiratory distress or need for respiratory support	All ages	Respiratory rate <20 in infant aged <1 y; ventilatory support
	Room air pulse oximetry <90%	All ages	None
Relocated criteria	SBP <110 mm Hg for older adults	≥65 y	SBP <110 might represent shock after age 65 y (Special Considerations section)

MECHANISM OF INJURY CRITERIA (STEP 3)

	Mechanism of Injury Criteria	All ages	Mechanism criteria (step 3)
New criterion	Child (age 0–9 y) unrestrained or in unsecured child safety seat	0–9 y	None
Modified criteria	Rider separated from transport vehicle with significant impact (e.g., motorcycle, ATV, horse, etc.)	All ages	Motor cycle crash >20 mph
	Fall from height >10 ft (all ages)	All ages	Adults: >20 ft (one story is equal to 10 ft) Children: >10 ft or two to three times the height of the child
Modified criterion	Pedestrian/bicycle rider thrown, run over, or with significant impact		Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact

EMS PROVIDER JUDGEMENT (STEP 4)

	EMS Judgment	All ages	Special considerations criteria (step 4)
New criteria	Low level falls in young children (≤ 5 y) or older adults (≥ 65 y) with significant head impact	0–5 y, ≥65 y	Older adults — low impact mechanisms (e.g., ground level falls) might result in severe injury
	Suspicion of child abuse	Any child, with focus on ≤5 y	None
	Special, high resource health care needs	All ages	None
Modified criteria	Anticoagulation use	All ages	Anticoagulants and bleeding disorders — patients with head injury are at high risk for rapid deterioration

CENTRAL VENOUS ACCESS POLICY

PURPOSE

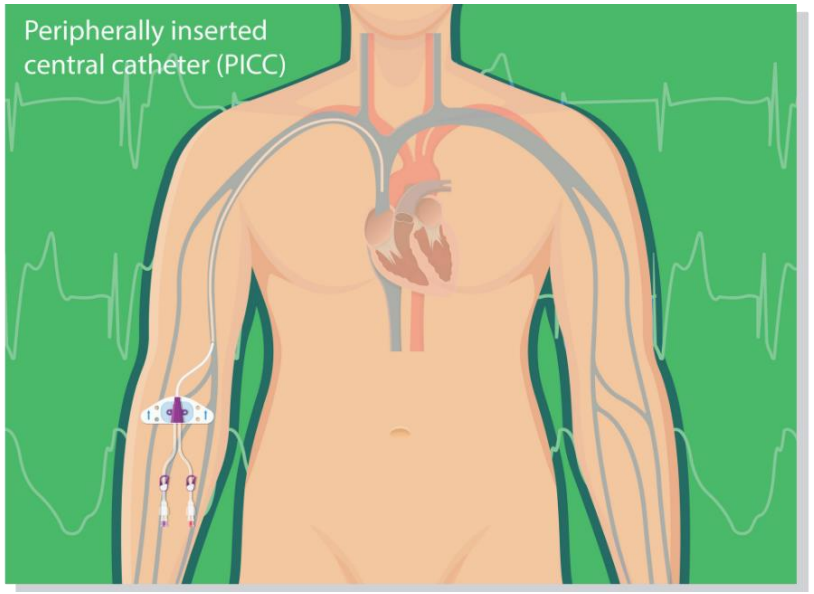
To define training requirements, indications, guidelines, and the standard procedure for access of pre-existing central vascular access devices (CVAD) on critically ill patients

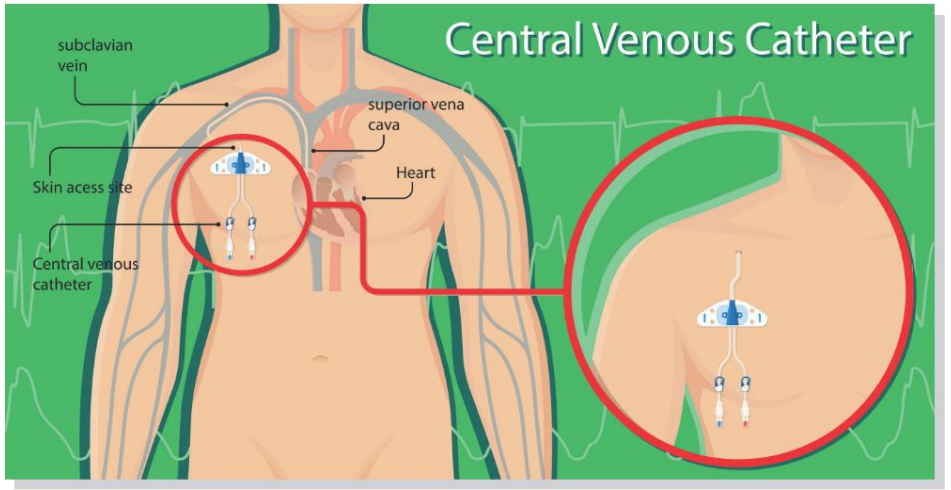
DEFINITIONS

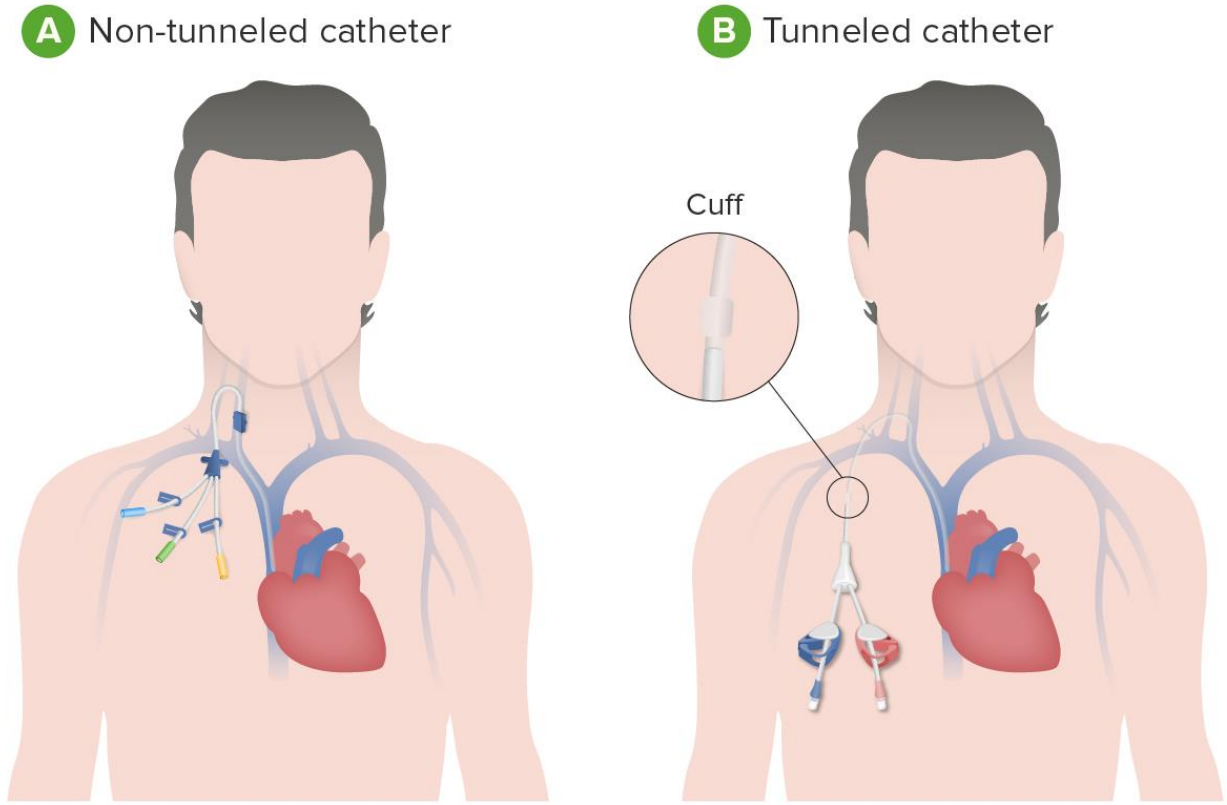
Pre-existing vascular access device (PVAD): An indwelling catheter or device placed into a central vein to provide vascular access for long term use or hemodialysis.

PICC & EXTERNAL CENTRAL VENOUS CATHETERS

- Externally accessible central venous line:
  - External central venous catheter
  - May be single or multi-lumen
  - Located in subclavian, jugular, or femoral veins
  - Often called a PICC line (peripherally inserted central catheter)
  - Or central venous catheter
  - Accessed through injection cap







TUNNELED TEMPORARY OR PERMANENT DIALYSIS CATHETER

- External central venous catheter with two lumens
- Located in the subclavian vein on the anterior chest
- Occasionally found in the femoral or jugular
- Shall only be used in unstable patients with impending or existing cardiac arrest

INDICATIONS

- Existing peripheral inserted central catheter (PICC) or central venous catheter (CVC)
  - used in any situation as long as patency is established.
- External central venous catheters (Dialysis catheter)
  - used in unstable patients with impending arrest when no other access can be established.

DOCUMENTATION

- Date and time device accessed
- Type of device accessed
- Prior attempts for establishing peripheral access
- Patient's condition requiring device to be access
- Any complications encountered
- Medication dosages and/or total amount of fluids administered

CENTRAL VENOUS ACCESS PROCEDURE

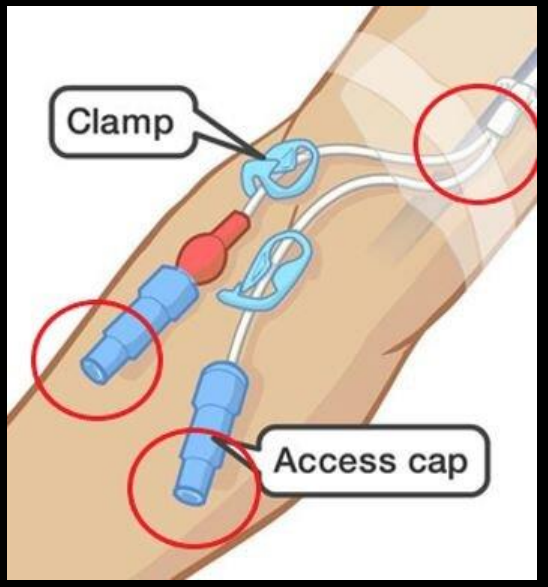
- Assemble necessary equipment
- Educate Patient
- Perform hand hygiene and don exam gloves
- Disconnect any existing IV lines
- Prep injection caps
  - vigorously scrub top and sides of needleless connector hub with alcohol prep pad using friction and a twisting motion for no less than 15 seconds.
- Allow to dry

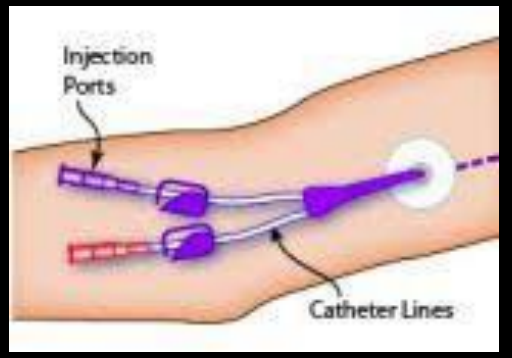
CENTRAL VENOUS ACCESS PROCEDURE

- Assess patency and flush IV catheter prior to medication administration
- Attach empty 10 cc syringe and unclamp catheter
- Withdraw 5 cc of blood and discard. If resistance met, discontinue procedure
- Slowly inject 5-10 cc of normal saline with prefilled syringe. If resistance met, discontinue procedure
- Use a new alcohol prep pad to clean the needleless connector using friction and a twisting motion for no less than 15 seconds and allow to completely air dry and attach IV tubing. Once flowing well, can use for medication administration
- Closely monitor site

SPECIAL CONSIDERATIONS

- CVADs are aspirated for a blood return and flushed prior to each infusion to assess catheter function and prevent complications
- CVADs are flushed after each infusion to clear the infused medication from the catheter lumen, thereby reducing the risk of contact between incompatible medications
- Single use normal saline flushing syringes are never re-used even on same lumen
- A CVAD is never forcibly flushed
- Never access red catheter port
  - Always clamp red catheter port before procedure is initiated





NEW MEDICATIONS

NEW MEDICATIONS

Buprenorphine

Ketorolac

Ketamine (IM)

Ketorolac

Protocol 116

Classification	Nonsteroidal anti-inflammatory drug (NSAID)	
Actions	Inhibits the bodily synthesis of prostaglandins	
Indications	• Mild to moderate pain • Adjunct to other analgesics for severe pain	
Contraindications	• Age <2 years old • Multisystem trauma • Age > 65 years old • Hypersensitivity/ Allergy to (NSAIDS) • Active bleeding • Pregnancy • Hx renal disease, kidney transplant	
Adverse Effects	• Tachycardia • Increased salivation • Laryngospasm • Nausea/ Vomiting	• nausea • vomiting • blurred vision
Adult Dose	Single dose 10 mg IV over 2 minutes Or 10 mg IM	
Pediatric Dose	Single dose 0.5 mg/kg (max of 10 mg) over 2 minutes Or 0.5 mg/kg IM (max of 10 mg)	
Onset	10-15 minutes	
Duration	4-6 hours	
Pregnancy Safety	NO	
Comments	Not indicated for children younger than 2 years old Not indicated for adults greater than 65 years old May increase blood pressure	

KETOROLAC

- First line medication for mild to moderate pain
- Adult dose
  - Pain ≤ 5 on pain scale
  - One single dose
  - 10 mg IV over 2 minutes
  - Or 10mg IM
- Pediatric
  - Pain ≤ 5 on pain scale
  - One single dose
  - 0.5mg/kg IV (max of 10 mg) over 2 minutes
  - Or 0.5mg/kg IM (max of 10mg)

KETAMINE (IM)

Ketamine IM added to protocol Pain Control/Fever (116)

Adult

- 15 mg IM
- DO NOT dilute
- Repeat in 15 minutes prn x 1
- Max total dose 30 mg

Pediatric

- 0.2 mg/kg IM
- DO NOT dilute
- Single max dose of 15 mg IM
- Repeat in 15-minutes prn x 1
- Max 2 total doses

	Buprenorphine	Protocol 118
Classification	Schedule III narcotic analgesic	
Actions	opioid receptor partial agonist	
Indications	• opioid withdrawals	
Contraindications	• Under 18 years of age • Pregnant • any methadone use with in the last 10 days • altered mental status • Sepsis • current intoxication or recent use of benzodiazepine • COWS score of less than 7	
Adverse Effects	may precipitate withdrawal if given when COWS score is less than 7 CNS: Confusion, sedation CV: HTN, palpitations, hypotension EENT: Blurred vision GI: Constipation, dry mouth GU: Urinary retention Resp: Respiratory depression Skin: Sweating, clammy, rash	
Adult Dose	• Initial dose 16mg SL • May administer 2nd dose of 8mg SL if symptoms persist or worsen after 10 minutes	
Pediatric Dose	Not Indicated	
Onset	0 - 15 minutes	
Duration	24-70 hours	
Pregnancy Safety	No	
Comments	Use with caution for pain management patients. Discussion with an expert is required.	

BUPRENORPHINE

SPECIAL CONSIDERATIONS

- Suspected opioid withdrawals, immediately use “COWS” (Clinical Opiate Withdrawal Score)
  - Score of 7 or higher
- Tele911 consult is required prior to buprenorphine administration
- Naloxone leave behind shall be dispensed to all patients receiving buprenorphine

Patient's Name:_____ Date and Time ____/____/____:_____

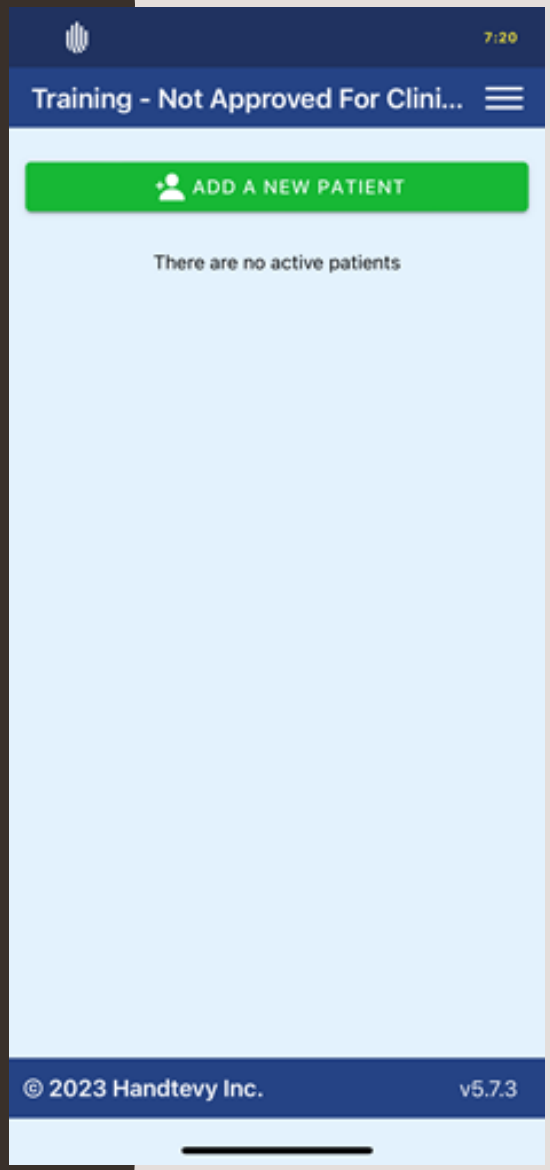
Reason for this assessment:_____

Resting Pulse Rate: _____beats/minute *Measured after patient is sitting or lying for one minute* 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	**GI Upset**: *over last 1/2 hour* 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 multiple episodes of diarrhea or vomiting
Sweating: *over past 1/2 hour not accounted for by room temperature or patient activity.* 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face	**Tremor** *observation of outstretched hands* 0 no tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching
Restlessness *Observation during assessment* 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 unable to sit still for more than a few seconds	**Yawning** *Observation during assessment* 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute
Pupil size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible	**Anxiety or Irritability** 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable or anxious 4 patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort	**Gooseflesh skin** 0 skin is smooth 3 piloerrection of skin can be felt or hairs standing up on arms 5 prominent piloerrection
Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks	Total Score _____ The total score is the sum of all 11 items Initials of person completing assessment: _____

Score: 5-12 = mild; 13-24 = moderate; 25-36 = moderately severe; more than 36 = severe withdrawal

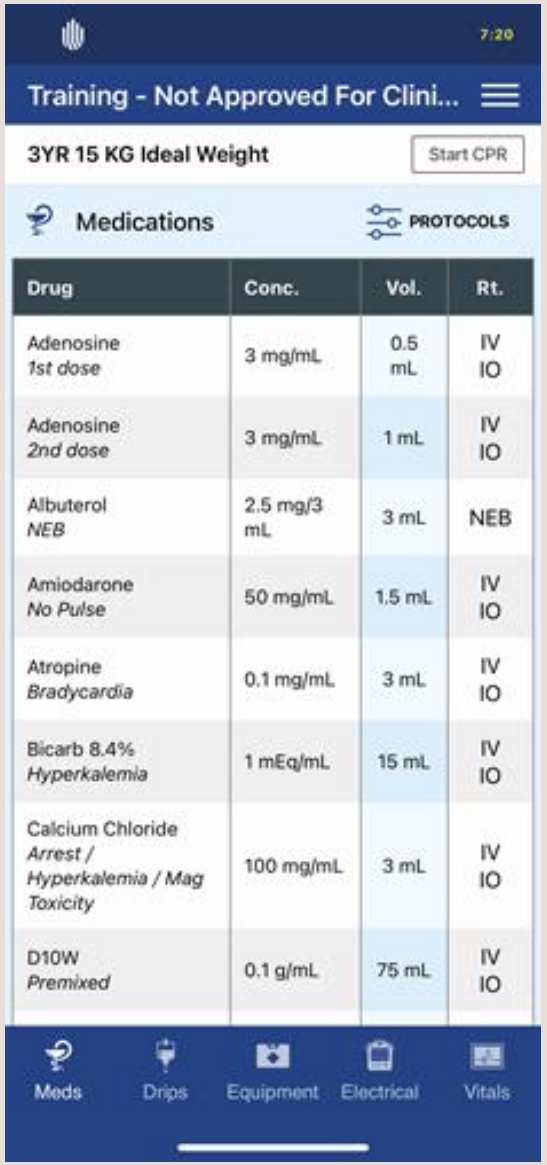
TELE911

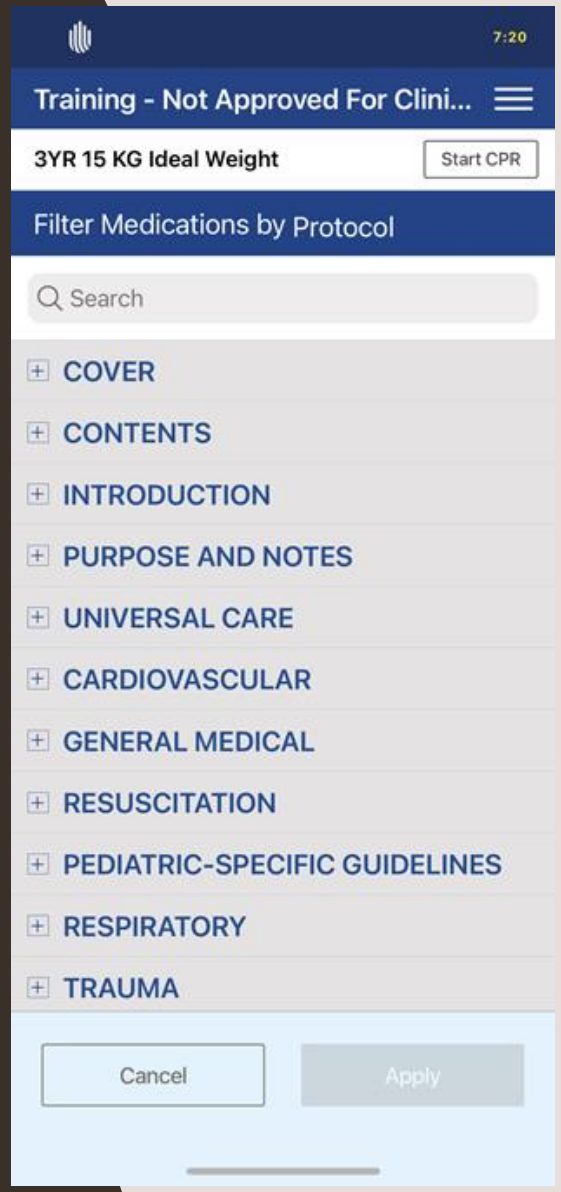
HANDTEVY UPDATE


7:20
Training - Not Approved For Clini...
ADD A NEW PATIENT
There are no active patients
© 2023 Handtevy Inc.
v5.7.3

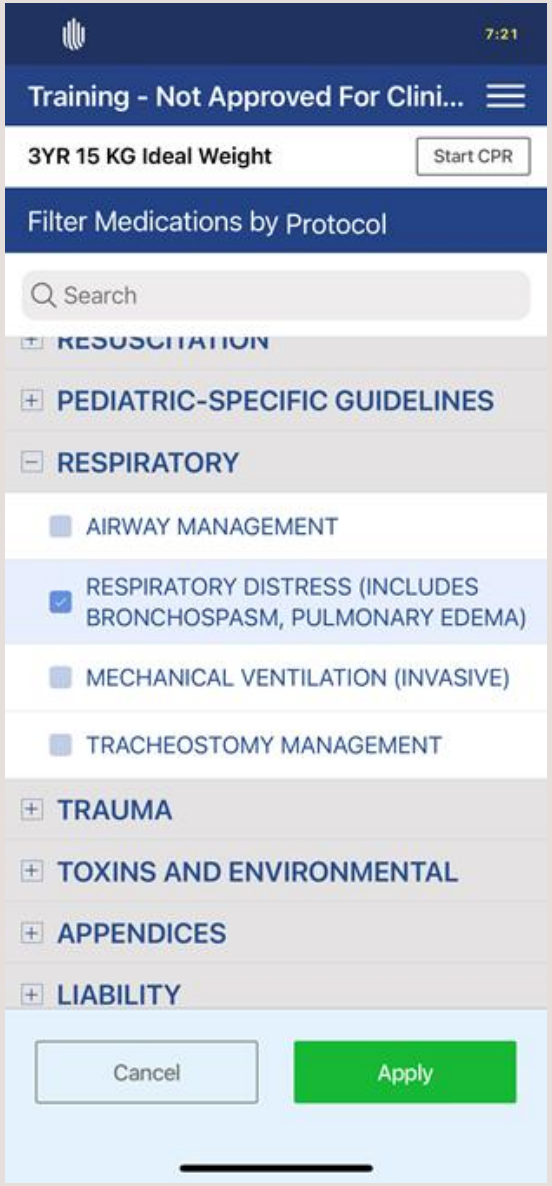

7:20
Training - Not Approved For Clini...
Change Patient Age
9YR 30 KG Ideal Weight Green
10YR 35 KG Ideal Weight Green
11YR 40 KG Ideal Weight Green
12YR 50 KG Ideal Weight Green
13YR 60 KG Ideal Weight Green
ADULT 75 KG Ideal Weight Light Blue
ADULT 100 KG Ideal Weight Light Blue
© 2023 Handtevy Inc.
v5.7.3

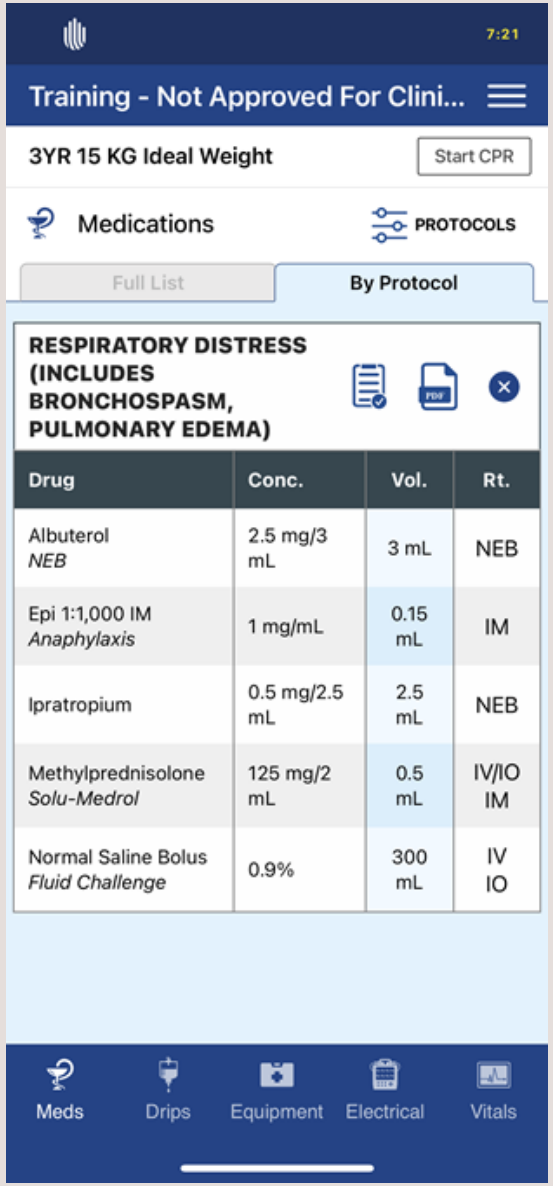

7:20
Training - Not Approved For Clini...
Change Patient Age
NB 4 KG Ideal Weight Gray
4MO 6 KG Ideal Weight Pink
6MO 8 KG Ideal Weight Red
1YR 10 KG Ideal Weight Purple
2YR 12 KG Ideal Weight Yellow
3YR 15 KG Ideal Weight White
4YR 17 KG Ideal Weight White
5YR 20 KG Ideal Weight Blue
© 2023 Handtevy Inc.
v5.7.3

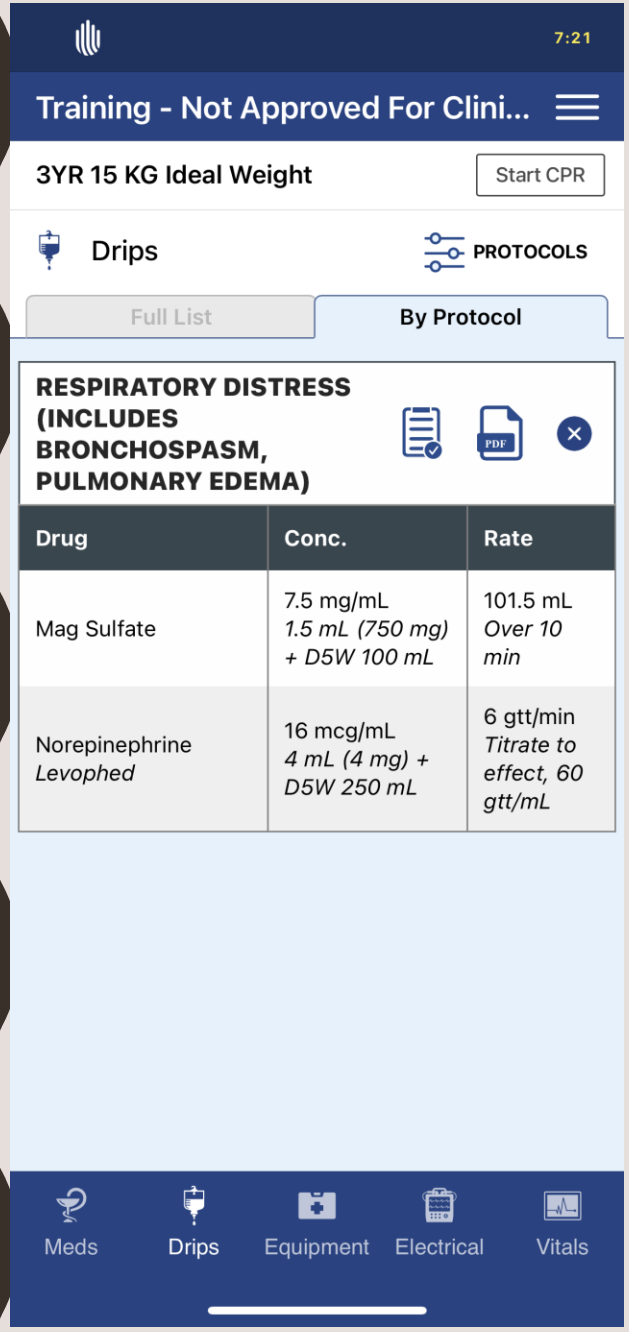

7:20
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Medications
PROTOCOLS
Drug | Conc. | Vol. | Rt.
Adenosine 1st dose | 3 mg/mL | 0.5 mL | IV IO
Adenosine 2nd dose | 3 mg/mL | 1 mL | IV IO
Albuterol NEB | 2.5 mg/3 mL | 3 mL | NEB
Amiodarone No Pulse | 50 mg/mL | 1.5 mL | IV IO
Atropine Bradycardia | 0.1 mg/mL | 3 mL | IV IO
Bicarb 8.4% Hyperkalemia | 1 mEq/mL | 15 mL | IV IO
Calcium Chloride Arrest / Hyperkalemia / Mag Toxicity | 100 mg/mL | 3 mL | IV IO
D10W Premixed | 0.1 g/mL | 75 mL | IV IO
Meds
Drips
Equipment
Electrical
Vitals

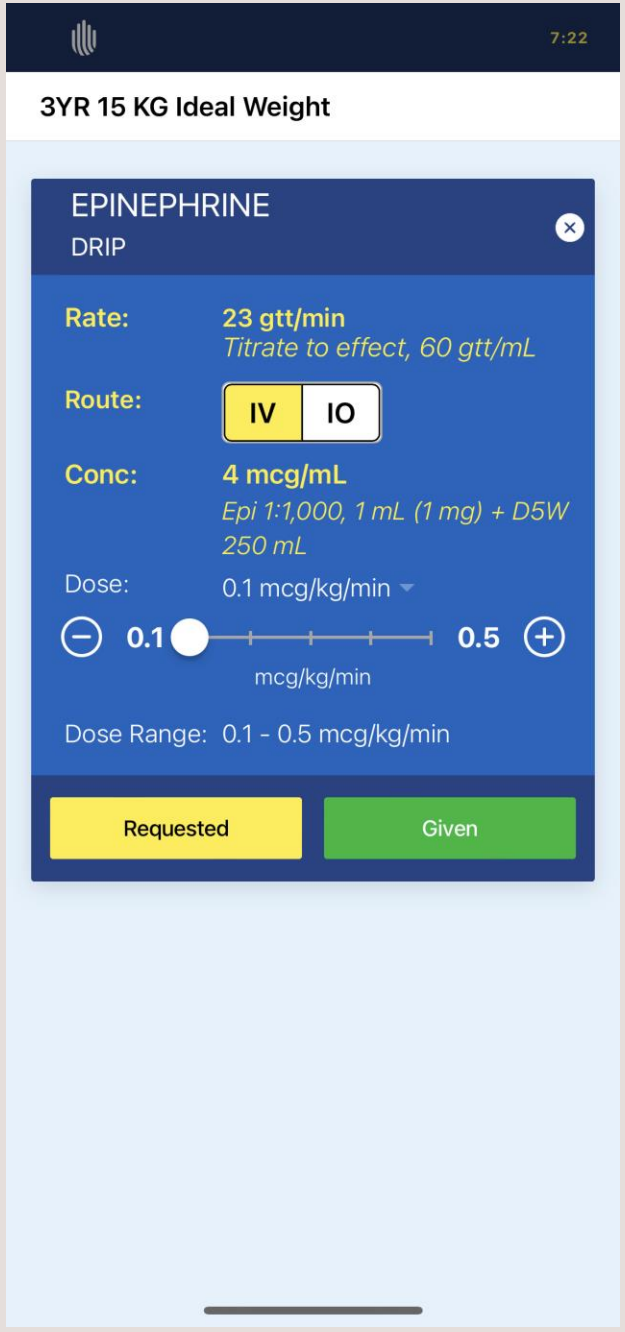

7:20
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Filter Medications by Protocol
Search
COVER
CONTENTS
INTRODUCTION
PURPOSE AND NOTES
UNIVERSAL CARE
CARDIOVASCULAR
GENERAL MEDICAL
RESUSCITATION
PEDIATRIC-SPECIFIC GUIDELINES
RESPIRATORY
TRAUMA
Cancel
Apply

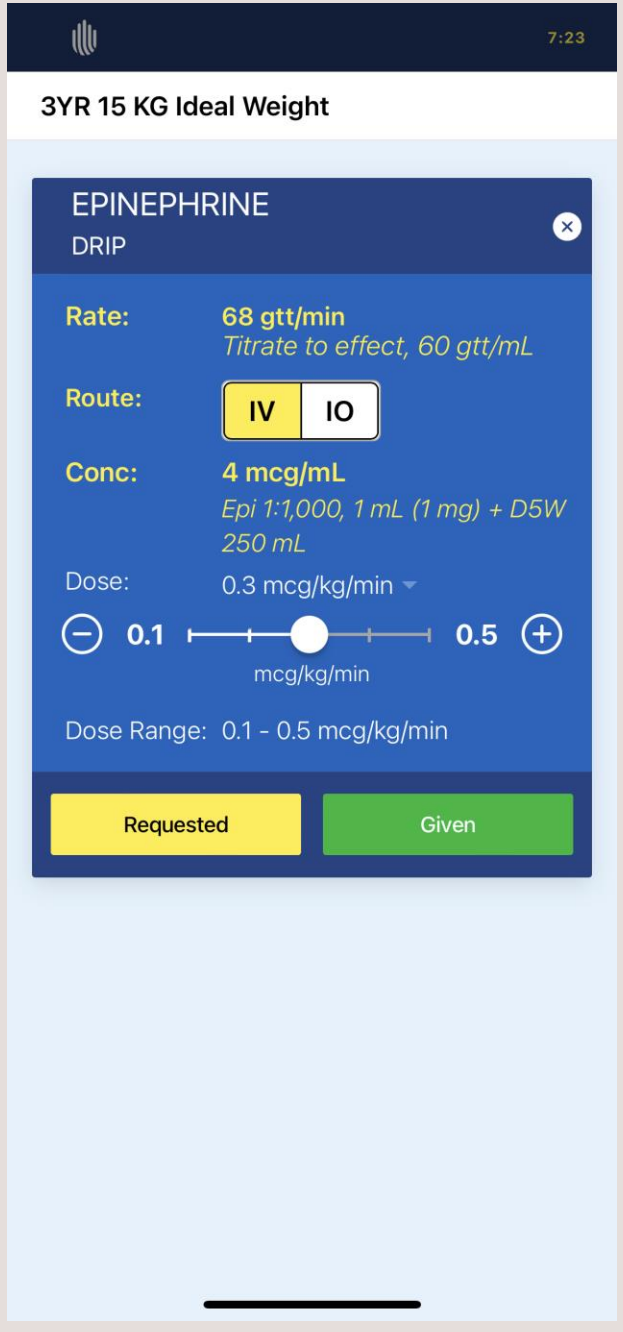

7:21
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Filter Medications by Protocol
Search
PEDIATRIC-SPECIFIC GUIDELINES
RESPIRATORY
AIRWAY MANAGEMENT
RESPIRATORY DISTRESS (INCLUDES BRONCHOSPASM, PULMONARY EDEMA)
MECHANICAL VENTILATION (INVASIVE)
TRACHEOSTOMY MANAGEMENT
TRAUMA
TOXINS AND ENVIRONMENTAL
APPENDICES
LIABILITY
Cancel
Apply

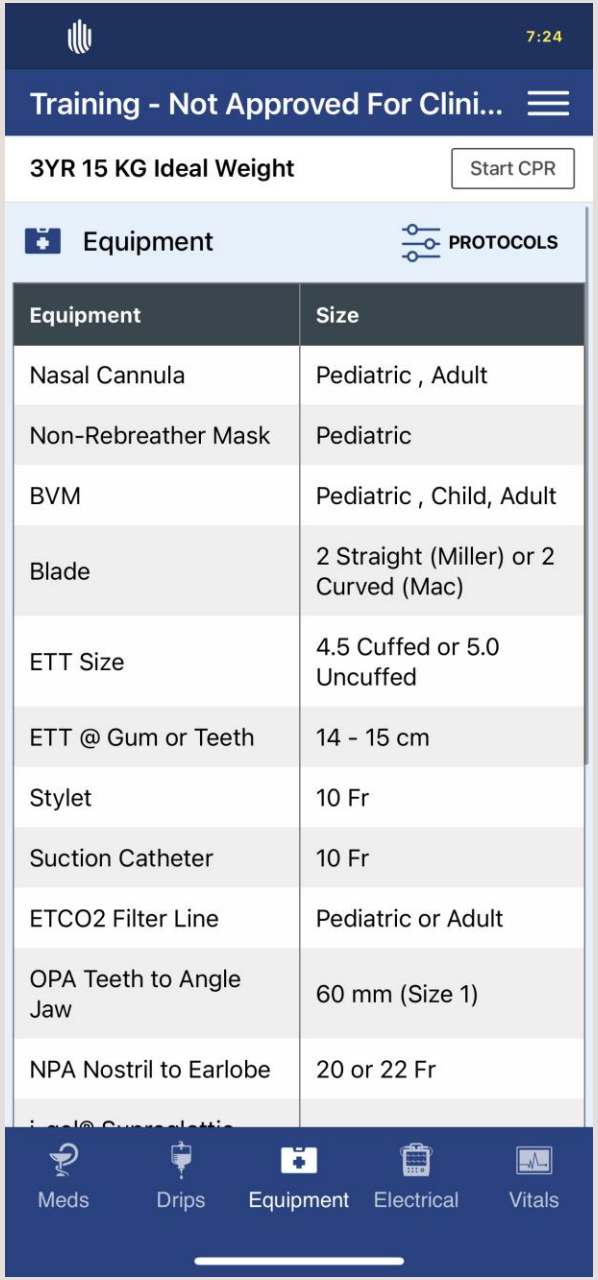

7:21
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Filter Medications by Protocol
Search
PEDIATRIC-SPECIFIC GUIDELINES
RESPIRATORY
AIRWAY MANAGEMENT
RESPIRATORY DISTRESS (INCLUDES BRONCHOSPASM, PULMONARY EDEMA)
MECHANICAL VENTILATION (INVASIVE)
TRACHEOSTOMY MANAGEMENT
TRAUMA
TOXINS AND ENVIRONMENTAL
APPENDICES
LIABILITY
Cancel
Apply

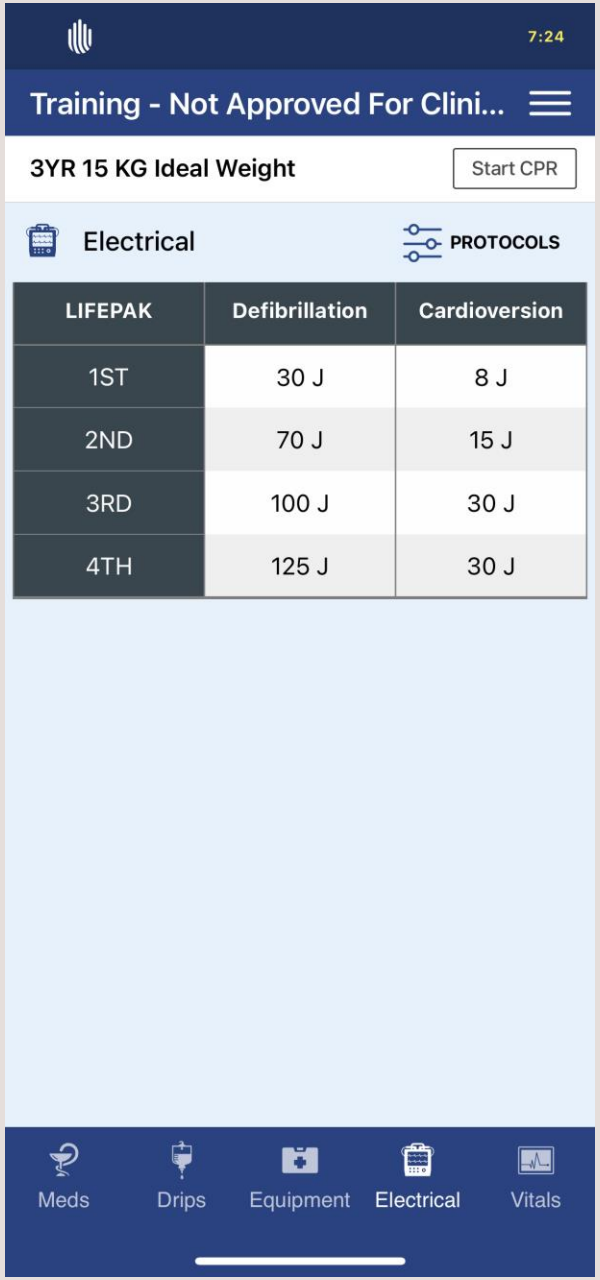

7:21
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Medications
PROTOCOLS
Full List
By Protocol
RESPIRATORY DISTRESS (INCLUDES BRONCHOSPASM, PULMONARY EDEMA)
Drug
Conc.
Vol.
Rt.
Albuterol NEB
2.5 mg/3 mL
3 mL
NEB
Epi 1:1,000 IM Anaphylaxis
1 mg/mL
0.15 mL
IM
Ipratropium
0.5 mg/2.5 mL
2.5 mL
NEB
Methylprednisolone Solu-Medrol
125 mg/2 mL
0.5 mL
IV/IO IM
Normal Saline Bolus Fluid Challenge
0.9%
300 mL
IV IO
Meds
Drips
Equipment
Electrical
Vitals

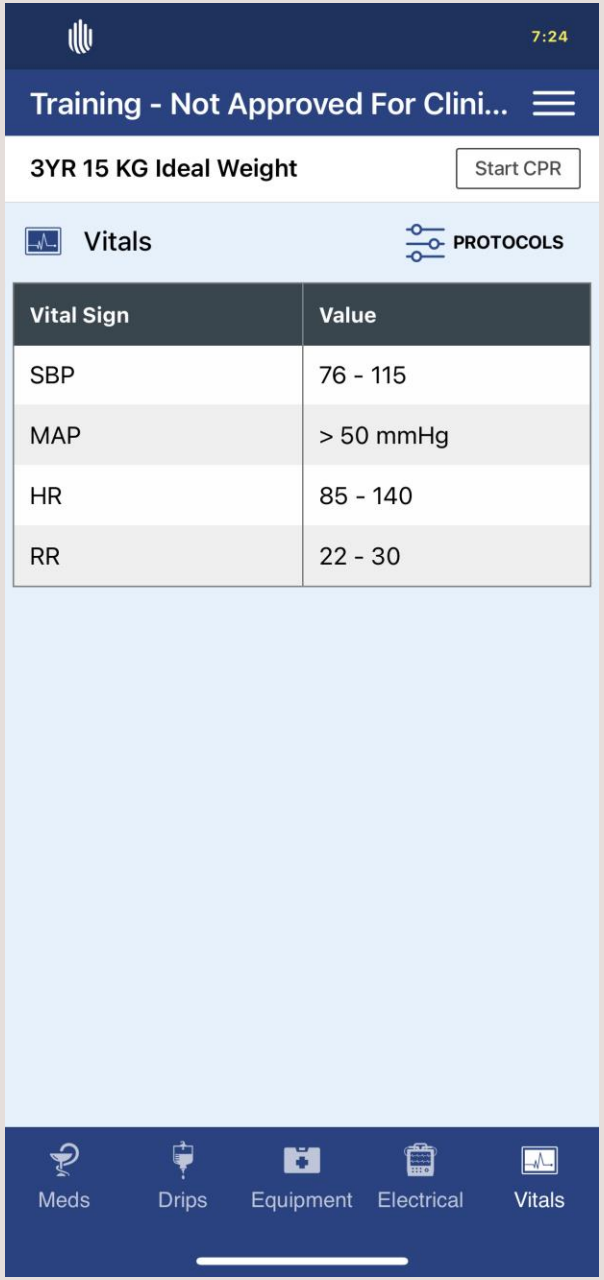

7:21
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Drips
PROTOCOLS
Full List
By Protocol
RESPIRATORY DISTRESS (INCLUDES BRONCHOSPASM, PULMONARY EDEMA)
PDF
Drug
Conc.
Rate
Mag Sulfate
7.5 mg/mL
1.5 mL (750 mg) + D5W 100 mL
101.5 mL
Over 10 min
Norepinephrine
Levophed
16 mcg/mL
4 mL (4 mg) + D5W 250 mL
6 gtt/min
Titrate to effect, 60 gtt/mL
Meds
Drips
Equipment
Electrical
Vitals

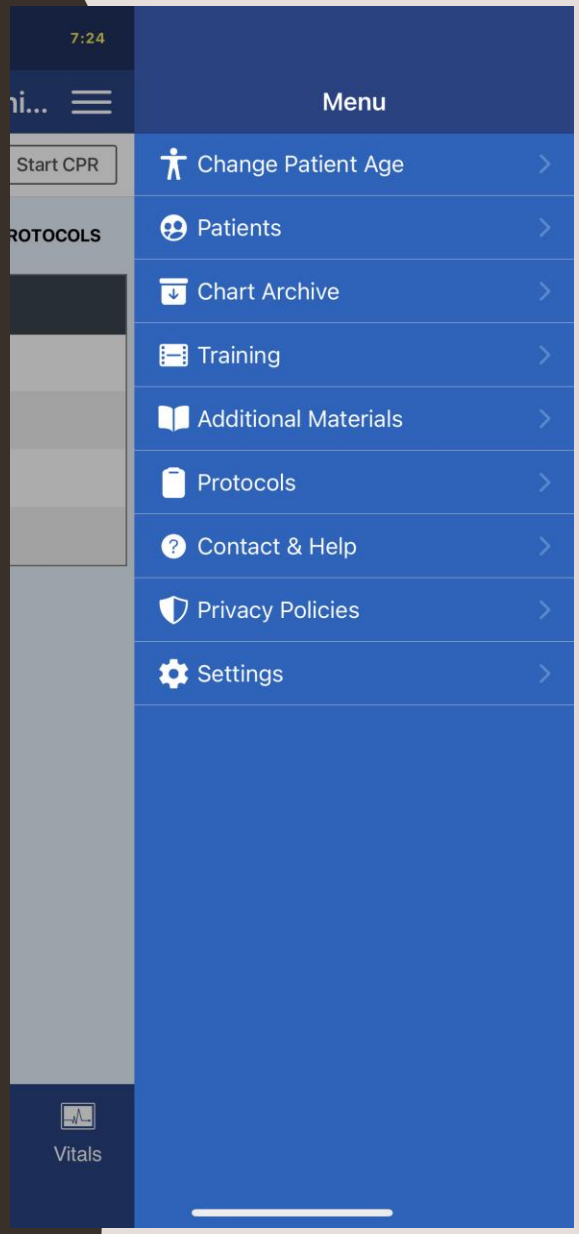

7:22
3YR 15 KG Ideal Weight
EPINEPHRINE
DRIP
Rate:
23 gtt/min
Titrate to effect, 60 gtt/mL
Route:
IV
IO
Conc:
4 mcg/mL
Epi 1:1,000, 1 mL (1 mg) + D5W 250 mL
Dose:
0.1 mcg/kg/min
0.1
0.5
mcg/kg/min
Dose Range: 0.1 - 0.5 mcg/kg/min
Requested
Given

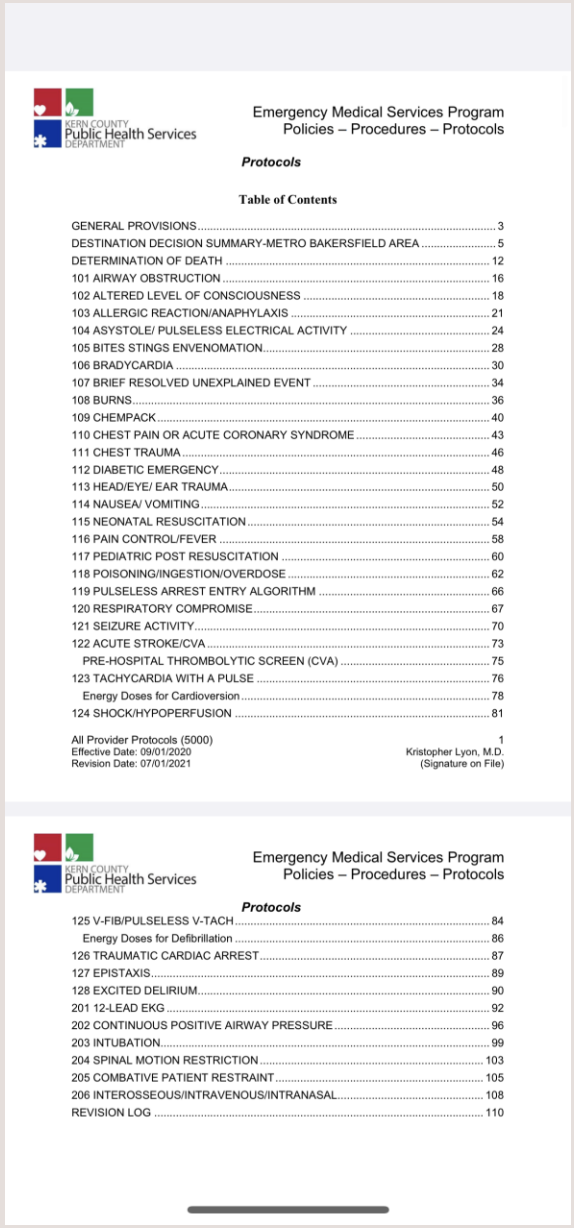

7:23
3YR 15 KG Ideal Weight
EPINEPHRINE
DRIP
Rate:
68 gtt/min
Titrate to effect, 60 gtt/mL
Route:
IV
IO
Conc:
4 mcg/mL
Epi 1:1,000, 1 mL (1 mg) + D5W 250 mL
Dose:
0.3 mcg/kg/min
0.1
0.5
mcg/kg/min
Dose Range: 0.1 - 0.5 mcg/kg/min
Requested
Given


7:24
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Equipment
PROTOCOLS
Equipment
Size
Nasal Cannula
Pediatric , Adult
Non-Rebreather Mask
Pediatric
BVM
Pediatric , Child, Adult
Blade
2 Straight (Miller) or 2 Curved (Mac)
ETT Size
4.5 Cuffed or 5.0 Uncuffed
ETT @ Gum or Teeth
14 - 15 cm
Stylet
10 Fr
Suction Catheter
10 Fr
ETCO2 Filter Line
Pediatric or Adult
OPA Teeth to Angle Jaw
60 mm (Size 1)
NPA Nostril to Earlobe
20 or 22 Fr
Meds
Drips
Equipment
Electrical
Vitals


7:24
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Electrical
PROTOCOLS
LIFEPAK
Defibrillation
Cardioversion
1ST
30 J
8 J
2ND
70 J
15 J
3RD
100 J
30 J
4TH
125 J
30 J
Meds
Drips
Equipment
Electrical
Vitals


7:24
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Vitals
PROTOCOLS
Vital Sign
Value
SBP
76 - 115
MAP
> 50 mmHg
HR
85 - 140
RR
22 - 30
Meds
Drips
Equipment
Electrical
Vitals





Emergency Medical Services Program
Policies – Procedures – Protocols

Protocols

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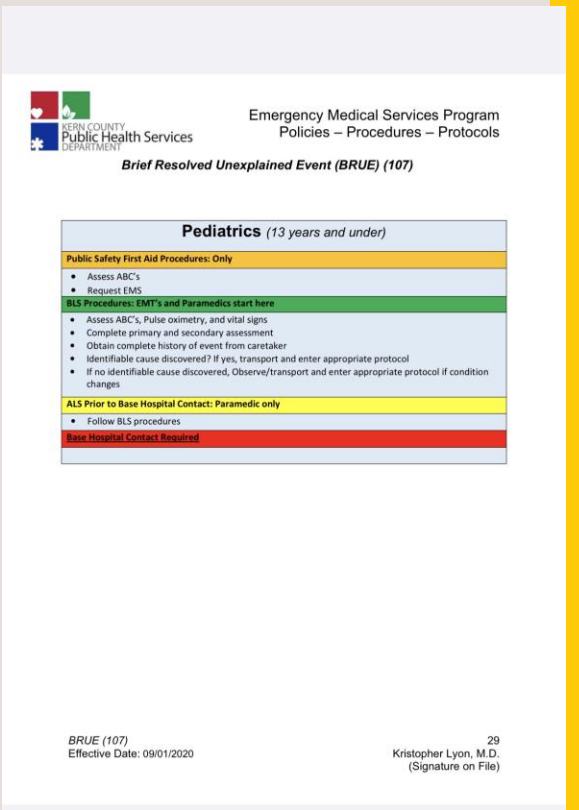
Emergency Medical Services Program
Policies – Procedures – Protocols

Protocols



Emergency Medical Services Program
Policies – Procedures – Protocols

Brief Resolved Unexplained Event (BRUE) (107)

Pediatrics *(13 years and under)*

Public Safety First Aid Procedures: Only

- Assess ABC's
- Request EMS

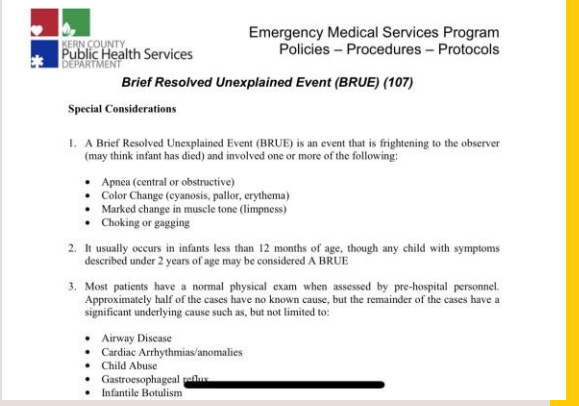
BLS Procedures: EMT's and Paramedics start here

- Assess ABC's, Pulse oximetry, and vital signs
- Complete primary and secondary assessment
- Obtain complete history of event from caretaker
- Identifiable cause discovered? If yes, transport and enter appropriate protocol
- If no identifiable cause discovered, Observe/transport and enter appropriate protocol if condition changes

ALS Prior to Base Hospital Contact: Paramedic only

- Follow BLS procedures

Base Hospital Contact Required



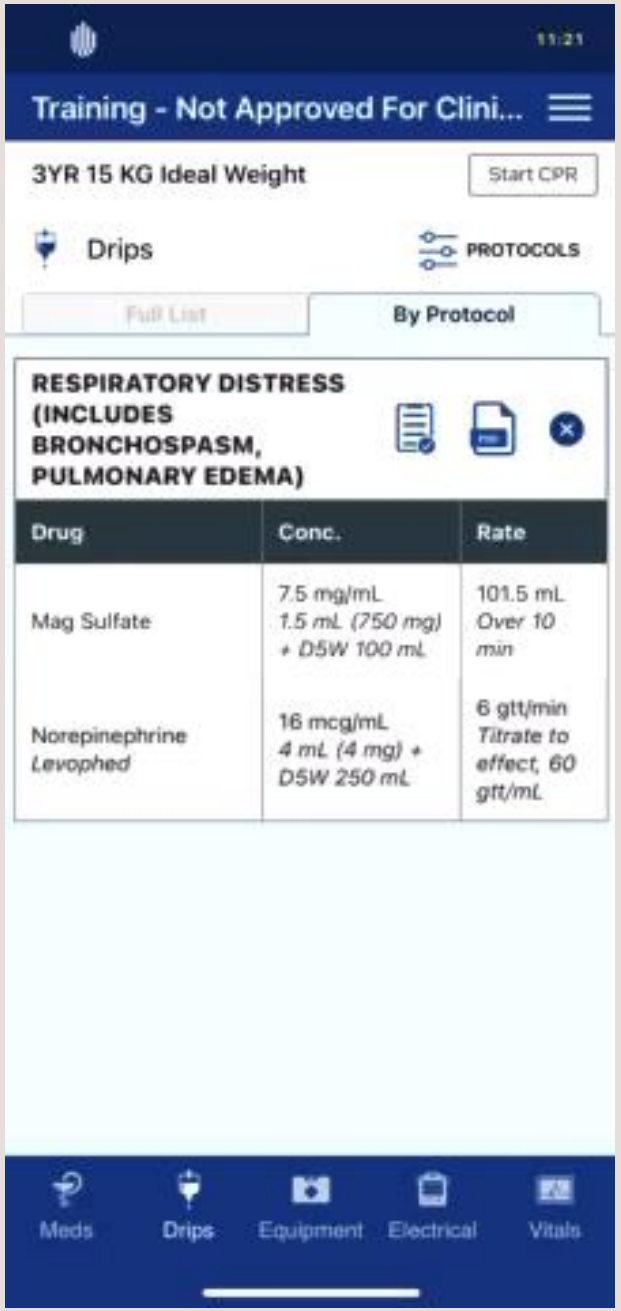
Emergency Medical Services Program
Policies – Procedures – Protocols

Brief Resolved Unexplained Event (BRUE) (107)

Special Considerations

1. A Brief Resolved Unexplained Event (BRUE) is an event that is frightening to the observer (may think infant has died) and involved one or more of the following:
   - Apnea (central or obstructive)
   - Color Change (cyanosis, pallor, erythema)
   - Marked change in muscle tone (limpness)
   - Choking or gagging
2. It usually occurs in infants less than 12 months of age, though any child with symptoms described under 2 years of age may be considered A BRUE
3. Most patients have a normal physical exam when assessed by pre-hospital personnel. Approximately half of the cases have no known cause, but the remainder of the cases have a significant underlying cause such as, but not limited to:
   - Airway Disease
   - Cardiac Arrhythmias/anomalies
   - Child Abuse
   - Gastroesophageal reflux
   - Infantile Botulism

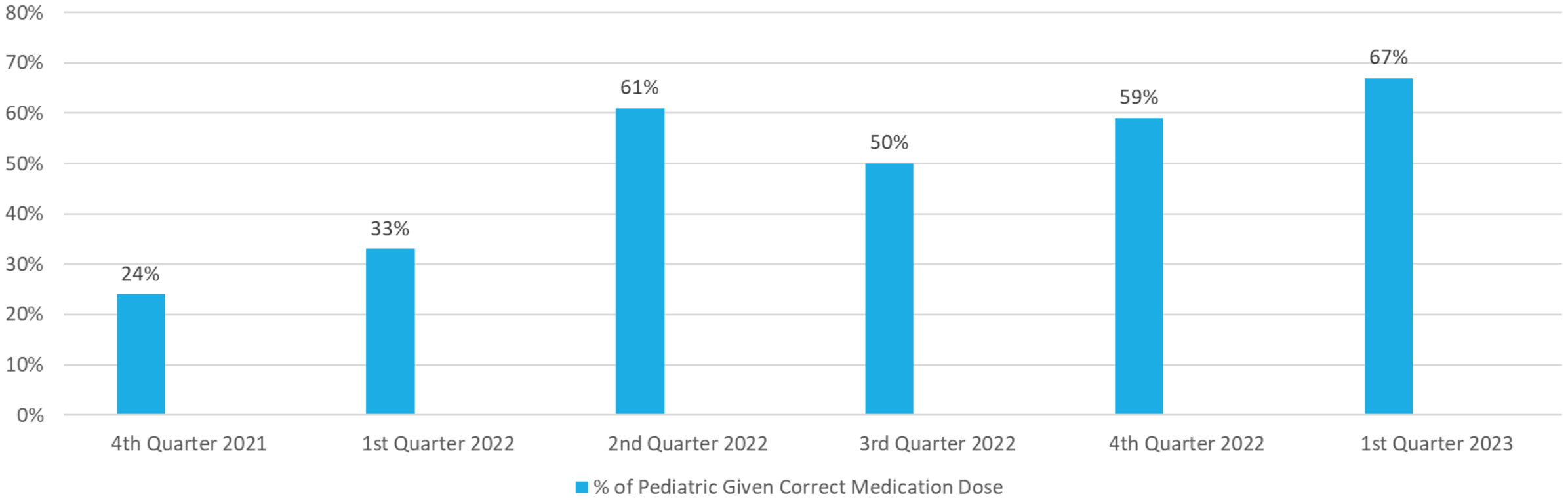

11:19
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Medications
PROTOCOLS
Drug
Conc.
Vol.
Rt.
Adenosine
1st dose
3 mg/mL
0.5 mL
IV IO
Adenosine
2nd dose
3 mg/mL
1 mL
IV IO
Albuterol
NEB
2.5 mg/3 mL
3 mL
NEB
Amiodarone
No Pulse
50 mg/mL
1.5 mL
IV IO
Atropine
Bradycardia
0.1 mg/mL
3 mL
IV IO
Bicarb 8.4%
Hyperkalemia
1 mEq/mL
15 mL
IV IO
Calcium Chloride
Arrest / Hyperkalemia / Mag Toxicity
100 mg/mL
3 mL
IV IO
D10W
Premixed
0.1 g/mL
75 mL
IV IO
Meds
Drips
Equipment
Electrical
Vitals


11:21
Training - Not Approved For Clini...
3YR 15 KG Ideal Weight
Start CPR
Drips
PROTOCOLS
Full List
By Protocol
RESPIRATORY DISTRESS (INCLUDES BRONCHOSPASM, PULMONARY EDEMA)
Drug
Conc.
Rate
Mag Sulfate
7.5 mg/mL
1.5 mL (750 mg) + D5W 100 mL
101.5 mL
Over 10 min
Norepinephrine
Levophed
16 mcg/mL
4 mL (4 mg) + D5W 250 mL
6 gtt/min
Titrate to effect, 60 gtt/mL
Meds
Drips
Equipment
Electrical
Vitals

EMS POLICY MEMORANDUM NO. 2022-03

MANDATORY HANDTEVY USE

- HandTevy training and usage is MANDATORY for paramedics operating in Kern County and EMS is conducting 100% quality improvement reviews on all patients 13 years or younger that received medications to assure that dosages match HandTevy. If a Kern County Paramedic fails to appropriately use HandTevy, the following actions will be taken by EMS:
  - **First Warning**- Verbal warning in the form of a letter to be placed in the paramedic's permanent file.
  - **Second Warning**- Written warning along with a meeting with Kern County EMS Program staff.
  - **Third Warning**- Paramedic will be put on probation for no less than 6 months and shall attend a mandatory Handtevy Retraining course.
  - If the Paramedic fails to utilize Handtevy a **fourth time**, the paramedic's Kern County's Accreditation shall be suspended for no less than 30 days, placed on probation for 1 year and they shall attend a mandatory Handtevy Retraining course.
- It is our desire that all paramedics operating in Kern County comply with HandTevy to assure that proper medication administration occurs for these young and fragile patients.



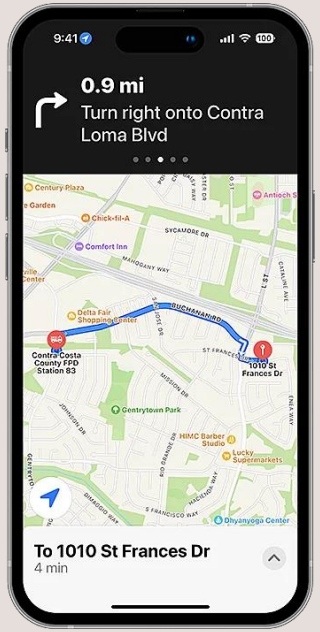
MEDICATION DOSAGES
4TH QUARTER 2021- 1ST QUARTER 2023

PULSE POINT

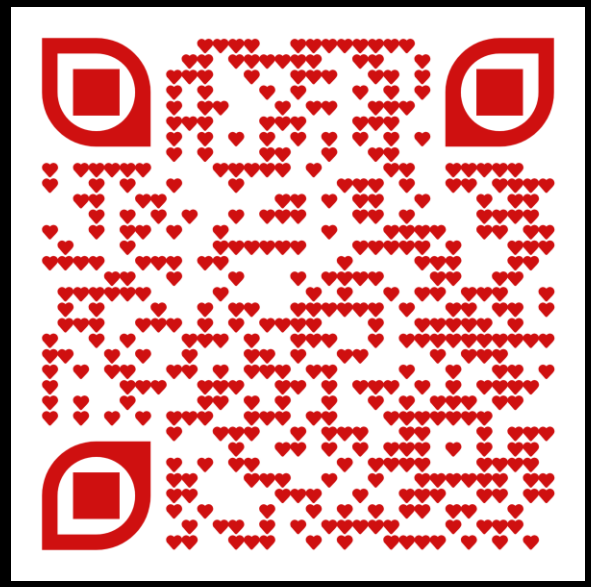
CASE REVIEW

Off duty Paramedic who lives in a rural area was notified of a nearby cardiac arrest.
They arrived on scene within 2-5 minutes. No agencies were on scene yet.
They were unable to make access via the front door.
Made patient contact in the backyard and took over CPR from family.
Fire department arrived next and worked with the Paramedic
ROSC Obtained and patient was flown to a local hospital
Patient was eventually discharged and is recovering at home.

PULSEPOINT UPDATE FEATURES



VERIFIED RESPONDER REGISTRATION



KERN COUNTY EMS ONLINE

PARAMEDIC ACCREDITATION

ONLINE CERTIFICATION PLATFORM

Kern County EMS is now 100% online.

- We do not accept walk-ins for certification or recertification.
- Everyone that is currently certified in Kern County already has an account.
  - If logging in as a returning applicant, do not create a new account. Click on "**forgot username**". You will be asked a few questions, and it will send you an email with your username and a link to reset your password.

PARAMEDIC PROTOCOL EXAM

The paramedic protocol exam will still be administered at public health.

After you finish the online process for initial or reaccreditation you will receive a message instructing you to call Kern County EMS and schedule your exam.

The exam will be offered by appointment only. Excluding county holidays.

SHIELDING THE FRONTLINE
KERN COUNTY

Phone (661) 621-2845

Email info@shieldingthefrontline.org

- 501 C3 Nonprofit organization committee
- For all first responders
  - Police, Sheriff, Kern CHP
  - Fire
  - EMS
  - Dispatchers
  - Hospital ER Physicians & Nurse's
- Free confidential counseling services
  - Self
  - Spouse
  - Children
- Access to licensed clinicians specializing in
  - Trauma
  - Behavioral Health
  - Family support
- shieldingthefrontline.org

THANK YOU

QUESTIONS?

Paramedic Update Quiz

Course Evaluation