EMERGENCY MEDICAL CARE COMMITTEE MEETING AGENDA

Thursday, May 16th, 2023, at 8:30 A.M.
2995 McMillan Ave, Ste #178, San Luis Obispo

MEMBERS
CHAIR Jonathan Stornetta, *Public Providers, 2020-2024*
VICE – CHAIR Dr. Brad Knox, *Physicians*, *2022-2026*
Bob Neumann, *Consumers*, *2022-2026*
Matt Bronson, *City Government, 2020-2024*
Alexandra Kohler, *Consumers, 2020-2024*
Chris Javine, *Pre-hospital Transport Providers, 2022-2026*
Michael Talmadge, *EMS Field Personnel, 2020-2024*
Jay Wells, *Sheriff's Department, 2020-2024*
Julia Fogelson, *Hospitals*, *2022-2024*
Diane Burkey, *MICNs*, *2022-2026*
Dr. Rachel May, *Emergency Physicians*, 2022-2026

EX OFFICIO
Dr. Penny Borenstein, *Acting EMS Division Director*
Dr. Bill Mulkerin**,** *EMS Medical Director*

STAFF
Denise Yi, PHEP Program Manager
Rachel Oakley, *EMS Coordinator*
VACANT, *EMS Coordinator*
Ryan Rosander, *EMS Coordinator*
Alyssa Vardas, *Administrative Assistant*

AGENDA	ITEM	LEAD
Call To Order	Introductions Public Comment	J. Stornetta
Action/Discussion	Approval of minutes: March 21st, 2024 Minutes (*attached)*	J. Stornetta
Action/Discussion	Protocol and Procedure Revisions: • Revised Protocol #602: Airway Management • Revised Protocol #641: Cardiac Arrest Atraumatic • Revised Protocol #661: Traumatic Cardiac Arrest • Revised Procedure #717: Endotracheal Intubation • Revised Procedure #718: Supraglottic Airway Device	R. Rosander
Staff Reports	• Health Officer • EMS Agency Director Report • EMS Medical Director Report • PHEP Staff Report	P. Borenstein P. Borenstein B. Mulkerin D. Yi
Committee Members Announcements or Reports	Opportunity for Board members to make announcements, provide brief reports on their EMS-related activities, ask questions for clarification on items not on the agenda, or request consideration of an item for a future agenda (Gov. Code Sec. 54954.2[a][2])	Committee Members
Adjourn	**Next Meeting: July 18th*, 2024 at 8:30am***	

Emergency Medical Care Committee
Meeting Minutes
Thursday March 21st, 2024
2995 McMillan Ave, Ste 178, San Luis Obispo

Members
- ☐ CHAIR Jonathan Stornetta, Public Providers
- ☒ VICE CHAIR Dr. Brad Knox, *Physicians*
- ☐ Bob Neumann, *Consumers*
- ☒ Alexandra Kohler, *Consumers*
- ☐ Matt Bronson, *City Government*
- ☒ Chris Javine, *Pre-Hospital Transport Providers*
- ☐ Michael Talmadge, *EMS Field Personnel*
- ☒ Dr. Rachel May, *Emergency Physicians*
- ☐ Jay Wells, *Sheriff's Department*
- ☒ Julia Fogelson, *Hospitals*
- ☒ Diane Burkey, *MICNs*

Ex Officio
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- ☒ Dr. Bill Mulkerin, *LEMSA Medical Director*

Staff
- ☐ Rachel Oakley, EMS Coordinator
- ☒ Ryan Rosander, EMS Coordinator
- ☐ Denise Yi, *PHEP Program Manager*
- ☒ Alyssa Vardas, Administrative Assistant

Guests – Dennis Rowley, David Goss

AGENDA ITEM / DISCUSSION	ACTION
CALL TO ORDER	The meeting called to order at 08:36 AM
Introductions	
Public Comment	No comments
Approval of Meeting Minutes –	Minutes approved with adjustments made
Staff Report for revisions for Addition of Ketamine to approved drug formulary: • In the effort to expand our current toolbox of pain medications for our county's patients, efforts were made to investigate and develop a LOSOP for Ketamine in San Luis Obispo County. • With the State of California recently adding Ketamine to the ALS basic scope of practice, SLOEMSA is wanting to renew efforts to add Ketamine to SLOEMSA's protocols and formulary. • Ketamine would be added to the following: • Pain Management Protocol #603 • EMS Equipment and Supply List Policy #205 Attachment A • Ketamine Formulary • Ketamine has successfully passed in both the Operations and Clinical Advisory Committees. • Following a recommendation in EMCC, Ketamine would be implemented after training during the 2024 SLOEMSA Update Class. **Discussion:** B. Knox- It doesn't specify a route of transmission. R. May – Are we going to have IM or intranasal? D. Burkey – We use a compounding pharmacy, and we get a smaller dose, you must be careful about not giving too much. C. Javine – Compounding shortens the shelf life, and it can create waste. R. May – I have concerns with one agency mixing up the bag and then handing it off to another agency. I have personally seen errors with it. B. Knox – I don't think there is any way to account for every contingency. R. May – I think intranasal would be great. B. Knox – I would like to see ketamine added. R. May – Make sure it says IV/IO and add in intranasal. P. Borenstein – What is the hesitancy on IM/IN?	R. Rosander

R. May – None. D. Burkey – Are there other counties that do all the routes? R. May – I don't think so but Santa Barbara does IM/IN. R. May – I am okay with approving it today with the addition of IV/IO, IM/IN, Bill, you could probably help with the dosage. D. Burkey – When you give it IM/IN you take out having to transfer the patient with the med hanging. B. Knox – Do we want to move forward with just IM/IN or with the IV? Motion to approve with changes.	Motion to approve: R. May, B. Knox Second. All in favor.
EMSA Director Report: The EMS community is facing staffing issues and there is a delay in sobering center construction. We are working on the ambulance contract and the EMS is discussing the partnership with the new hospital agency. **EMS Medical Director Report:** Nothing to report. **PHEP Staff Report:** Nothing to report.	P. Borenstein B. Mulkerin M. Craig-Lauer
Announcements: There were some issues with the St. Fratty's Day festivities. Want to make sure that we reinforce the importance of situational awareness and communication during events, especially for hospitals with staff on site.	D. Burkey
Future Agenda Items: None	Adjourn at 9:35 AM.
Next Regular Meeting The next meeting is set for Thursday, May 16th, 2024, at 08:30 AM at the EMS Agency.	

AIRWAY MANAGEMENT

ADULT	PEDIATRIC (≤34 kg)
BLS	

• Universal Protocol #601
• Administer O_2 as clinical symptoms indicate (see notes below)
• Pulse oximetry
• Patients with O_2 Sat ≥ 94% without signs or symptoms of hypoxia or respiratory compromise should not receive O_2
• When applying O_2 use the simplest method to maintain O_2 Sat ≥ 94%
• Do not withhold O_2 if patient is in respiratory distress
 	
• **Foreign Body/Airway Obstruction**
  ○ Use current BLS choking procedures
  ○ Basic airway adjuncts and suctioning as indicated and tolerated
	Same as Adult (except for newborns)
	• Newborn (< 1 day) follow AHA guidelines – Newborn Protocol #651

BLS Elective Skills	
• **Moderate to Severe Respiratory Distress** ○ **CPAP** as needed – CPAP procedure #703	CPAP not used for patients ≤34 kg
ALS Standing Orders	

• **Foreign Body/Airway Obstruction**
If obstruction not relieved with BLS maneuvers
  ○ Visualize and remove obstruction with Magill forceps
  ○ If obstruction persists, consider – Needle Cricothyrotomy Procedure #704
  ○ Upon securing airway monitor O_2 Sat and $ETCO_2$ – Capnography Procedure #701
• Endotracheal intubation – as indicated to control airway – Procedure #717
• Supraglottic Airway – as indicated to control airway ~~if indicated~~ – Procedure #718
• Needle thoracostomy with symptoms of tension pneumothorax – Needle Thoracostomy Procedure #705
	• **Foreign Body/Airway Obstruction**
	If obstruction not relieved with BLS maneuvers
	  ○ Visualize and remove obstruction with Magill forceps
	  ○ If obstruction persists, consider – Needle Cricothyrotomy Procedure #704
	  ○ Upon securing airway monitor O_2 Sat and $ETCO_2$ – Capnography Procedure #701
	• Needle thoracostomy with symptoms of tension pneumothorax – Needle Thoracostomy Procedure #705

Base Hospital Orders Only	

• **Symptomatic Esophageal Obstruction**
  ○ **Glucagon** 1mg IV followed by rapid flush. Give oral fluid challenge 60 sec after admin - check a blood sugar prior
• As needed
	• **Symptomatic Esophageal Obstruction**
	  ○ **Glucagon** 0.1mg/kg IV not to exceed 1mg followed by rapid flush. Give oral fluid challenge 60 sec after admin - check a blood sugar prior

	• As needed

Notes

- Oxygen Delivery
  - Mild distress – 0.5-6 L/min nasal cannula
  - Severe respiratory distress – 15 L/min via non-rebreather mask
  - Moderate to severe distress – CPAP 3-15 cm H2O
  - Assisted respirations with BVM – 15 L/min
- Pediatric intubation is no longer an approved ALS skill – maintain with BLS options
- Patients requiring an advanced airway, providers shall decide which ALS airway to utilize based on discretion ~~the complexity of the patient's anatomy. If the patient's vocal cords are easily visualized, then Endotracheal Intubation shall be utilized. If the patient's vocal cords are difficult or unable to be visualized, then a Supraglottic Airway Device shall be utilized.~~
- ~~During assessments of an airway for advanced airway placement, an attempt at visualization shall be defined as placement of a laryngoscope blade and the lifting of the patient's jaw in order to visualize vocal cords. An attempt at ETI shall be defined as attempting to pass the tube through the patient's vocal cords without success.~~
- After placement of any advanced airway, providers shall verify placement of the advanced airway by waveform capnography and a minimum of one additional method. This additional method can be any of the following:
  - Auscultation of lung and stomach sounds.
  - Colorimetric CO2 Detector Device.
  - Esophageal Bulb Detection Device.

CARDIAC ARREST (ATRAUMATIC)

ADULT	PEDIATRIC (≤34 KG)
BLS Procedures	

• Universal Algorithm #601
• High Performance CPR (HPCPR) (10:1) per Procedure #712
  • Continuous compressions with 1 short breath every 10 compressions
• AED application (if shock advised, administer 30 compressions prior to shocking)
• Pulse Oximetry
  • O_2 administration per Airway Management Protocol #602
	• Same as Adult (except for neonate)
	• Neonate (<1 month) follow AHA guidelines
	• CPR compression to ventilation ratio
	  • Newborn – CPR 3:1
	  • 1 day to 1 month – CPR 15:2
	  • >1 month – HPCPR 10:1
	• AED – pediatric patient >1 year
	• Use Broselow tape or equivalent if available

ALS Procedures	

Rhythm analysis and shocks
• At 200 compressions begin charging the defibrillator while continuing CPR
• Once fully charged, stop CPR for rhythm analysis
• **Defibrillate V-Fib/Pulseless V-tach** – Shock at 120J and immediately resume CPR
  • Subsequent shock, after 2 mins of CPR: 150J, then 200J
  • Recurrent V-fib/Pulseless V-tach use last successful shock level
• **No shock indicated** – dump the charge and immediately resume CPR
 	
V-Fib/Pulseless V-Tach and Non-shockable Rhythms
• **Epinephrine 1:10,000** 1mg IV/IO repeat every 3-5 min
  • Do not give epinephrine during first cycle of CPR
 	
V-Fib/Pulseless V-Tach
• **Lidocaine** 1.5mg/kg IV/IO repeat once in 3-5 min (max total dose 3 mg/kg)
	• **<u>Emphasize resuscitation and HPCPR rather than immediate transport</u>**
	
	Rhythm analysis and shocks
	• Coordinate compressions and charging same as adult
	• **Defibrillate V-Fib/Pulseless V-Tach** – shock at 2 J/kg and immediately resume CPR
	  • Subsequent shock, after 2 mins of CPR: 4J/kg
	  • Recurrent V-Fib/Pulseless V-tach use last successful shock level
	• **No shock indicated –** dump the charge and immediately resume CPR
	
	V-Fib/Pulseless V-Tach and Non-shockable Rhythms
	• **Epinephrine 1:10,000** 0.01 mg/kg (0.1 ml/kg) IV/IO not to exceed 0.3mg, repeat every 3-5 min
	  • Do not give epinephrine during first cycle of CPR
	
	V-Fib/Pulseless V-Tach
	• **Lidocaine** 1 mg/kg IV/IO repeat every 5 min (max total dose 3 mg/kg)

Base Hospital Orders Only	
ROSC with Persistent Hypotension • **Push-Dose Epinephrine 10 mcg/ml** 1ml IV/IO every 1-3 min	Contact closest Base Hospital for additional orders **ROSC with Persistent Hypotension for Age**

- Repeat as needed titrated to SBP >90mmHg
- See notes for mixing instructions

OR

- **Epinephrine Drip** start at 10 mcg/min IV/IO infusion
  - Consider for extended transport
  - See formulary for mixing instructions

Contact STEMI Receiving Center (French Hospital)

- Refractory V-Fib or V-Tach not responsive to treatment
- Request for a change in destination if patient rearrests en route
- Termination orders when unresponsive to resuscitative measures
- As needed

Contact appropriate Base Station per Base Station Report Policy #121 – Atraumatic cardiac arrests due to non-cardiac origin (OD), drowning, etc.)

- **Push-Dose Epinephrine 10 mcg/ml** 1 ml IV/IO (0.1 ml/kg if <10kg) every 1-3 min
  - Repeat as needed titrated to age appropriate SBP
  - See notes for mixing instructions

OR

- **Epinephrine Drip** start at 1 mcg/min, up to max of 10 mcg/min IV/IO infusion
  - Consider for extended transport
  - See formulary for mixing instructions

- As needed

Notes

- **Mixing Push-Dose Epinephrine 10 mcg/ml (1:100,000):** Mix 9 ml of Normal Saline with 1 ml of **Epinephrine 1:10,000**, mix well.
- Use manufacturer recommended energy settings if different from listed
- Assess for reversible causes: tension PTX, hypoxia, hypovolemia, hypothermia, hyperkalemia, hypoglycemia, overdose
- Vascular access – IV preferred over IO – continue vascular access attempts even if IO access established)
- Shall utilize Oral Intubation or Supraglottic Airways (Adults), provider discretion ~~– Utilize if airway is not patent or with maintained ROSC~~
- ~~During the initial visualization of the patient's airway if~~
- If the provider cannot accomplish an ALS airway, they should document in the PCR why an ALS airway wasn't accomplished
- Once an SGA has been placed, it should not be removed for an ETI
- Stay on scene to establish vascular access, provide for airway management, and administer the first dose of epinephrine followed by 2 min of HPCPR
- Adult ROSC that is maintained:
- Obtain 12-lead ECG and vital signs
- Transport to the nearest STEMI Receiving Center ***regardless of 12-lead ECG reading***
- Maintain O2 Sat greater than or equal to 94%
- Monitor ETCO2
- ~~Protect airway with oral intubation or Supraglottic Airway~~

- With BP < 100 mmHg, contact SRC (French Hospital) for fluid, or pressors
- Termination for patients > 34 kg – Contact SRC (French Hospital) for termination orders
- If the patient remains pulseless and apneic following 20 minutes of resuscitative measures
- Persistent ETCO2 values < 10 mmHg, consider termination of resuscitation
- Documentation shall include the patient's failure to respond to treatment and of a non-viable cardiac rhythm (copy of rhythm strip)
- Pediatric patients less than or equal to 34 kg
- Evaluate and treat for respiratory causes
- Use Broselow tape if available
- Contact and transport to the nearest Base Hospital
- Receiving Hospital shall provide medical direction/termination for pediatric patients

TRAUMATIC CARDIAC ARREST

ADULT	PEDIATRIC (≤34KG)
BLS	
• Universal Protocol #601 • Obvious Death – see Prehospital Determination of Death Policy #125 • Follow HPCPR guidelines for CPR (10:1) and minimize interruptions (< 5 seconds)	Same as Adult
BLS Optional	
Pulse Oximetry – O_2 administration per Airway Management Protocol #602	
ALS Standing Orders	
Traumatic arrest <u>with</u> signs of life on EMS arrival <u>and</u> < 20 min from trauma center or hospital • Do not delay transport • Perform ALS treatments en route • **Normal Saline** up to 500 mL – repeat x1 if no ROSC or SBP of < 90 mmHg • **<u>Do not use Epinephrine or Lidocaine</u>** unless the arrest is suspected to be of medical origin • Resuscitate and treat for reversible causes, i.e. hypoxia, hypovolemia, tension pneumothorax • For suspected tension pneumothorax see Needle Thoracostomy Procedure #705 **Traumatic arrest <u>with absent</u> signs of life on EMS arrival** • With absent signs of life consider non-initiation – Prehospital Determination of Death Policy #125	Same as Adult (except as noted below) • **Normal Saline** 20 mL/kg IV/IO – reassess and repeat
Base Hospital Orders Only	
• Traumatic arrest <u>with</u> signs of life on EMS arrival <u>and</u> > 20 min from trauma center or hospital ○ Contact SLO Trauma Center for treatment and/or destination • Termination of resuscitation • As needed	Same as Adult

Notes

- Absent signs of life assessment include: pulseless, apneic, lack of heart and lung sounds, fixed and dilated pupils
- Trauma Center is the preferred destination if equal or near equal distance
- Do not delay transport for advanced airway or other treatment modalities
- Consider medical origin in older patients with low probable mechanism of injury
- Unsafe scene or other circumstances may warrant transport despite low potential for survival
- Minimize disturbance of potential crime scene
- Shall utilize Oral Intubation or Supraglottic Airways (Adults), provider discretion

- If the provider cannot accomplish an ALS airway, they should document in the PCR why an ALS airway wasn't accomplished

Endotracheal Intubation

FOR USE IN PATIENTS >34 KG

BLS

Universal Protocol #601
Pulse Oximetry – O_2 administration per Airway Management Protocol #602

ALS Standing Orders

Indications:

- Patients with a respiratory compromise.
- ~~ROSC~~ Patients requiring airway stabilization, including cardiac arrest and ROSC.
- ~~Situations where the airway cannot be adequately maintained by BLS techniques.~~

Contraindications:

- Intact gag reflex

Policy:

- ~~If patient presents with an easily accessible airway (able to visualize the patient's vocal cords), ETI will be indicated.~~
- Prepare, position, and oxygenate the patient with 100% Oxygen. Ideal positioning is keeping the ears in line with the sternal notch.
- Consider use of video laryngoscopy when available.
- Select appropriate size ET tube and consider the need for endotracheal introducer (Bougie); have suction ready.
- Using the laryngoscope, visualize vocal cords.
- Determine how accessible the patient's airway is. If the patient has a complex airway (unable to visualize the vocal cords due to surrounding anatomy) which would be difficult and time consuming to intubate, consider the use of a supraglottic airway device Procedure # 718.
- Visualization of vocal cords will take no longer than 10 seconds.
- Visualize tube/bougie passing through vocal cords.
- Inflate the cuff with 3-10mL of air.
- Apply waveform capnography (reference Policy #701).
- Auscultate for bilaterally equal breath sounds and absence of sounds over the epigastrium.
- If ET intubation efforts are unsuccessful after the 1st attempt, ~~continue with a BLS airway,~~ oxygenate and re-evaluate the airway positioning before the 2nd attempt. After first failed attempt, consider use of Supraglottic Airways (reference Procedure #718).
- If ET intubation efforts are unsuccessful after the 2nd attempt, oxygenate and ~~continue with a BLS airway and~~ provider shall then proceed to Supraglottic Airway Procedure #718.

- Patients who have an advanced airway established shall have that airway secured with tape or a commercial device. Devices and tape should be applied in a manner that avoids compression of the front and sides of the neck, which may impair venous return from the brain.

- If the patient has a suspected spinal injury:
  - Open the airway using a jaw-thrust without head extension.
  - If airway cannot be maintained with jaw thrust, use a head-tilt/chin-lift maneuver.
  - Manually stabilize the head and neck rather than using an immobilization device during CPR.
- Following placement of the Endotracheal Tube, if the patient is noted to have an ETCO2 less than 10, the ALS Provider shall extubate the patient and oxygenate prior to an additional attempt.

Base Hospital Orders Only

As needed

Notes

- Respiratory compromise is defined as any condition that prevents the movement of oxygenated air into and out of the lungs. This includes cardiac arrests
- ETI during cardiac arrest is indicated if the ALS provider can accomplish intubation without interruption in HPCPR. With ALS provider judgement, determines ETI cannot be accomplished, provider shall proceed to Supraglottic Airway Procedure #718
- Once an SGA has been placed, it should not be removed for an ETI
- If the provider cannot accomplish an ALS airway, they should document in the PCR why an ALS airway wasn't accomplished
- ~~During the initial visualization of the patient's airway if the ALS provider determines the airway to be difficult (unable to visualize the patient's vocal cords), ETI will not be utilized and ALS providers will reference Procedure 718 for SGA.~~
- After placement of the Endotracheal Tube, providers shall verify placement of the ETI by waveform capnography and a minimum of one additional method. This additional method can be any of the following:
- Auscultation of lung and stomach sounds.
- Colorimetric CO2 Detector Device
- Esophageal Bulb Detection Device
- During placement of an ETI, apneic oxygenation is recommended to be utilized when available. If appropriate, providers shall place a nasal cannula onto the patient prior to the intubation attempt and continue use of the nasal cannula during placement to assist in oxygenation

Supraglottic Airway Device

FOR USE IN PATIENTS >34 KG

BLS

Universal Protocol #601

Pulse Oximetry – O_2 administration per Airway Management Protocol #602

ALS Standing Orders

- Patients who meet indications for **Endotracheal Intubation Procedure #717**
- ~~Patients who after the ALS Provider has visualized the patient's airway and has determined that their airway will be difficult to access.~~
- ALS provider judgement.
- SGA use is not approved for pediatric use. SGA shall only be used for patients >34kg.

I-GEL

- Monitor End-tidal capnography throughout use.
- Select appropriate tube size.

	3	Small Adult	30-60kg
	4	Medium Adult	50-90kg
	5	Large Adult	90+kg

- While preparing tube, have assistive personnel open the airway, and clear of any foreign objects. Pre-oxygenate with 100% oxygen via bls airway and BVM.
- Apply water soluble lubricant to the distal tip and posterior aspect (only) of the tube, taking care to avoid introduction of the lubricant into or near the ventilatory openings.
- Grasp the lubricated i-gel firmly along the integral bite block. Position the device so that the i-gel cuff outlet is facing towards the chin of the patient.
- Position patient into "sniffing position" with head extended and neck flexed. The chin should be gently pressed down before proceeding to insert the i-Gel.
- Introduce the leading soft tip into the mouth of the patient in the direction towards the hard palate.
- Glide the device downwards and backwards along the hard palate with a continuous but gentle push until a definitive resistance is felt.
- At this point the tip of the airway should be located into the upper esophageal opening and the cuff should be located against the laryngeal framework. The incisors should be resting on the integral bite-block.
- Attach a BVM. While gently bagging the patient to assess ventilation, carefully withdraw the airway until ventilation is easy and free flowing (large tidal volume with minimal airway pressure).
- Confirm proper position by auscultation, chest movement and verification of ETCO2 by waveform capnography.
- The i-gel should be secured down per manufacturer recommendation.
- Patients who have an advanced airway established shall have that airway secured with tape or a commercial device. Devices and tape should be applied in a manner that avoids compression of the front and sides of the neck, which may impair venous return from the brain.

- Ensure proper documentation of placement of the i-Gel placement including verification methods.

Base Hospital Orders Only

As needed

Notes

Contraindications

•Gag reflex. •Caustic ingestion. •Known esophageal disease (e.g., cancer, varices, or stricture).

- SGA during cardiac arrest is indicated
- Once an SGA has been placed, it should not be removed for an ETI
- If the provider cannot accomplish an ALS airway, they should document in the PCR why an ALS airway wasn't accomplished
- ~~Following visualization of the patient's airway and determining the patient's airway to be accessible (able to visualize the patient's vocal cords), SGA shall not be utilized and ALS providers shall reference Procedure #717 for ETI.~~
- To verify patency and placement of the SGA Device, providers shall verify placement of the i-Gel device by waveform capnography and a minimum of one additional method. This additional method can be any of the following:
- Auscultation of lung sounds
- Colorimetric CO2 Detector Device
- Esophageal Bulb Detection Device
- During placement of an SGA, apneic oxygenation is recommended to be utilized when available. If appropriate, providers shall place a nasal cannula onto the patient prior to i-Gel placement and continue use of the nasal cannula during placement in order to assist in oxygenation.