# EMERGENCY MEDICAL CARE COMMITTEE MEETING AGENDA

Thursday, March 20th, 2025, at 8:30 A.M. 2995 McMillan Ave, Ste #178, San Luis Obispo

**MEMBERS**
CHAIR Chris Javine, *Pre-hospital Transport Providers, 2022-2026*
VICE – CHAIR Matt Bronson, *City Government, 2020-2024*
Dr. Brad Knox, *Physicians*, *2022-2026*
Bob Neumann, *Consumers*, *2022-2026*
Alexandra Kohler, *Consumers, 2020-2024*
Jonathan Stornetta, *Public Providers, 2020-2024*
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 Physician*, 2022-2026

**EX OFFICIO**
Ryan Rosander, *EMS Director*
Dr. Bill Mulkerin**,** *EMS Medical Director*
Penny Borenstein, *Health Officer*

**STAFF**
Maya Craig-Lauer, PHEP Representative
Rachel Oakley, *EMS Coordinator*
Eric Boyd, *EMS Coordinator*
Kaitlyn Blanton, *EMS Coordinator*
Alyssa Vardas, *Administrative Assistant*

| AGENDA | ITEM | LEAD |
|---|---|---|
| Call To Order | Introductions<br>Public Comment | C. Javine |
| Action/Discussion | Approval of minutes: January 16th, 2025, Minutes (*attached)* | C. Javine |
| Action/Discussion | Policy Revisions:<br>• 100 – Continuous Quality Improvement<br>• 100 - Attachment A, CQI Review Process<br>• 101 – Quality Assurance Program<br>• 101 – Attachment A, SLOEMSA Provider Case Tracking Form<br>• 125 – Prehospital Determination of Death<br>Protocol Revisions:<br>• 613 – Behavioral Emergencies<br>• 620 – Seizure Active<br>• 616 – Respiratory Distress Bronchospasm<br>• 618 – Respiratory Distress Opiod Overdose<br>• 650 - Childbirth<br>• 651 - Newborn Care<br>Formulary Revisions/Additions:<br>• Midazolam<br>• Calcium Chloride<br>• Epinephrine<br>• Ipatropium Bromide<br>• Magnesium Sulfate<br>• Narcan | R. Rosander<br>K. Blanton |
| Staff Reports | • Health Officer<br>• EMS Agency Director Report<br>• EMS Medical Director Report<br>• PHEP Staff Report | P. Borenstein<br>R. Rosander<br>B. Mulkerin<br>M. Craig-Lauer |
| 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 |

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| Adjourn | **Next Meeting: May 15, 2025** | C. Javine |

# Emergency Medical Care Committee

**DRAFT Meeting Minutes**
**8:30 AM January 16th, 2025**
**2995 McMillan Way, Suite 178**
**San Luis Obispo, CA 93401**

## MINUTES

**MEMBERS' PRESENT:**
Chair Chris Javine, Pre-Hospital Transport Providers
Vice Chair Matthew Bronson, City Government
Jonathan Stornetta, Chief, City of Paso Robles Fire
Alexandra Kohler, Consumers
Dr. Brad Knox, Physicians
Rachel May, Emergency Physicians
Jay Wells, Sheriff's Department

**MEMBERS ABSENT:**
Bob Neumann, Consumers
Dr Penny Borenstein, County Health Officer
Michael Talmadge, EMS Field Personnel
Julia Fogelson, Hospitals
Diane Burkey, MICNs

**EMS AGENCY STAFF PRESENT:**
Alyssa Vardas, EMS Administrative Assistant
Ryan Rosander, EMSA
Rachel Oakley, EMSA
Bill Mulkerin, EMS Medical Director
Kaitlyn Blanton, EMSA
Eric Boyd, EMSA

**PUBLIC COMMENTORS:**
Natasha Lukasiewich
Heidi Hutchison
Rob Jenkins, CALFIRE

### 1. CALL TO ORDER

Chair Chris Javine called the meeting to order at 8:32 a.m. He led the reviewing of the meeting protocols and meeting agenda.

### 2. REVIEW AND APPROVAL OF September 19th, 2024, MINUTES

**Action: Jonathan Stornetta moved approval of September 19th, 2024, Emergency Medical Care Committee Meeting Minutes with corrections of Michael Talmadge asked about hemodynamics for downgrades and Natasha Lukasiewich asked about ketamine for pediatrics and epinephrine for cardiac arrest. Rachel May seconded. The motion carried unanimously with no abstentions.**

### 3. Protocols/Policies

PSFA and CPR Policy: San Luis Obispo County Emergency Medical Services Agency (SLOEMSA) developed several PSFA policies and procedures, primarily for law enforcement agencies requesting to utilize the optional skill of naloxone administration. Prior versions that will be replaced are:

- Policy #213, Naloxone for Public Safety-First Responders Requirements (dated 3/1/18)
- Policy #214, Naloxone for Public Safety-First Responders, which is a clinical procedure guide (dated 2/1/19).

The purpose of developing new PSFA policies is to align with California State regulations that apply to Public Safety personnel (peace officers, firefighters, and lifeguards) and provide a clear process to apply for PSFA training program approval or PSFA optional skills authorization. SLOEMSA removed the requirement to submit use and annual reports for optional skills; however, Public Safety providers that apply are required to have an EMS quality improvement (QI) program in place for any issues or necessary retraining that are identified within their agency. There is no expiration date for optional skills authorization.

Discussion:

Jonathan Stornetta asks why the contagious disease policy is mentioned here.

Rachel Oakley states that it is to inform them of what to do. If you are in an EMS provider agency, you should be aware of that policy. Law enforcement agencies might not be aware that that policy exists, but it applies to them, too.

Bill Mulkerin mentions that it is also because it is not covered in standard training.

STEMI and TRAUMA Destination Policies:

Over the past year, several stakeholders have approached SLOEMSA with a request to incorporate catchment areas into the STEMI and Trauma destination policies. Currently, the field operates without a defined boundary or cutoff for decisions on transporting STEMI or trauma-alert patients to SVRMC/FHMC (SLO County) or MRMC (SB County). The proposed policy revision will help operations by providing clear boundaries. Furthermore, there has been a lot of discussion surrounding prolonged on-scene times for trauma, STEMI, and CVA. A depart scene time goal of 10 minutes or less was incorporated into policy and protocol to reflect these concerns.

Discussion:

Rachel May asks what literature are you using to support the 10-minute times? Is there any literature to support that time?

Ryan Rosander says he has been talking with Dr. Mulkerin and French Hospital. If the patient is having a STEMI, then the patient is likely going to the Cath lab. Why are EMS crews waiting on scene, delaying Cath lab entry?

Rachel May says but what EMS literature have you found to support this? I know there are some traumas and data for traumas, so what literature are you using to support that specific time of 10 minutes?

Bill Mulkerin says he is not aware of any literature. Short on-scene time is relatively standard care for STEMI patients.

Brad Knox asks if it is mirroring other policies.

Bill Mulkerin says if crews are on scene longer than 10 minutes, we want to understand why.

Brad Knox asks if we are close to that time.

Rachel May says that sometimes, we have ALS firefighters on the scene who would be making the initial contact. I have concerns that the on-scene time is not the transporting agency; it is the ALS fire agency.

Chris Javine asks, are these circumstances something you are going to be evaluating in-house?

Bill Mulkerin says yes.

Jonathan Stornetta says we are exceeding 10 minutes, Ryan Rosander and Chris Javine agreed.

Rachel May suggests aligning our data with the SRC metrics. We shouldn't create an arbitrary number to follow.

Brad Knox mentions there is a lot that has nothing to do with EMS. I read this as this is the goal.

Jonathan Stornetta says It is obvious to us, and it is longer than 10 minutes. We should have a goal.

Chris Javine mentions that maybe we should change the expected language to goal.

Brad Knox says It's like saying the expectation is they don't get into a car accident on the way.

Matthew Bronson says he is okay with expectation, but is 10 minutes truly obtainable?

Jay Wells mentions he thinks confusion is that it is an arbitrary 10 minutes and expectation is sterner than goal.

Rachel May says she agrees with a word change because EMS personnel will think that it is punitive.

Brad Knox says there are many aspects involved.

Matthew Bronson mentions he thinks a first step would be to have this as a goal.

Rachel May asks if there is a drop-down to fill in why they are on scene longer?

Katy Blanton says, Yes, there is, but it isn't required, so many personnel don't use it. We are making it required.

Rachel May mentions we should clarify the issue that no STEMIs are going to Marian.

Katy Blanton says that they transport to Marian.

Ryan Rosander mentions South County transports to Marian frequently if the call is located closer to Marian than French.

Public Comment:

Heidi Hutchison thinks Dr. May has good questions, and this was a good way to answer them.

Rob Jenkins mentions he forwarded you studies on the 10-minute discussion.

Natasha Lukasiewich says ten minutes is standard across all pre-hospital specialty care within California, including STEMI.

Discussion:

Brad Knox mentions that over the years, much of that golden hour idea has fallen by the wayside. I want a medic to take the time to look at the patient.

Bill Mulkerin says the plan would be to document why it is taking longer than 10 minutes.

Brad Knox thinks we could be setting ourselves up for failure. If the message is not to rush these patients, we should do this right.

Alexandra Kohler mentions that it does seem strict because it just says "depart" scene.

Rachel May asks if we can include literature to support this. These are often consultations, and sometimes, they need a little more time. I suggest removing the depart scene time from step 3.

Jonathan Stornetta thinks if you are ejected, you will be a code 3, which is step 3. This concerns me in North County because it is going to take a longer time to get to the Trauma Center. Where it talks about the closest transport, would it be helpful to put ground transport? Trauma is misspelled in one section.

Public Comment:

Rob Jenkins says he thinks it is dire to have this in policy since the on-scene times are far longer than 10 minutes. Thank you for putting this into the policy.

Policy 219 Assisting Patients with their Emergency Medications:

Several Congenital Adrenal Hyperplasia advocacy groups have reached out to SLOEMSA, proposing a policy that addresses the need for paramedics to assist patients with their emergency medications, especially for patients in adrenal crisis. This policy will allow paramedics to receive base hospital orders to assist the parents or caregivers in drawing up and administering medications such as Solu-Cortef. It covers not only patients with Congenital Adrenal Hyperplasia but also any patient who needs assistance from a paramedic with their physician-prescribed emergency medications.

Discussion:

Alexandra Kohler mentions that it says medics can help with the medication. Should we write a specific medication here?

Brad Knox says he thinks this is just a specific example. I like this policy being broad.

Public Comment:

No Public comment

Protocol 601 Universal:

During SLOEMSA's 2024 EMS Update Class, numerous paramedics mentioned that they would like to see a discretionary 500 mL fluid bolus (with repeat if hypotensive) within the Universal Protocol. This would eliminate the need for paramedics to call a base hospital for orders to administer fluids.

Discussion:

Rachel May asks does it have to be a base hospital order to give patients their own emergency medication?

Bill Mulkerin thinks base contact is reasonable.

Jay Wells says he would say if language were a goal in others, it should be changed here as well.

Rachel May says she would probably remove stroke since there is no designated stroke facility.

Bill Mulkerin mentions he would like to keep stroke there. Are we changing everything to goal?

Matthew Bronson says yes but we can always change it back later.

Jay Wells mentions he thinks we should change it to goal or target for everything.

Rachel May thinks stroke is much more complex. It would not be good if you were so busy trying to get off the scene that you did not do a full assessment.

Ryan Rosander mentions that medics cannot provide much in the way of treatment for stroke except to get off the scene and to the hospital as rapidly as possible. All specialty care patients need definitive care from a physician, not a medic.

Brad Knox says he agrees with getting stroke patients off scene rapidly.

Public Comment:

No Public comment

Protocol 611 Allergic Reaction/Anaphylaxis:

During our last CAC, an MD mentioned that they are seeing an increase in anaphylaxis patients being brought into the ED without EPI being administered. This was discussed, and a possibility might be the lack of language clarity surrounding anaphylaxis within the protocol. This has been addressed within the revision.

Discussion:

Brad Knox says he wants to applaud everyone who worked on this. We are not giving enough EPI in the field.

Rachel May says she thinks this is an excellent change.

## 4. ANNOUNCEMENTS

Brad Knox mentions Twin is having significant issues with transfers to French for STEMI, and French is saying not to come.

Jonathan Stornetta says that he just forwarded a case to Ryan about them getting held up because of French.

Rachel May says she feels your pain because of what we have heard happening.

Bill Mulkerin says there have been no changes at the county system level.

Brad Knox says It is becoming a significant issue.

Natasha Lukasiewich mentions that there is another committee to discuss these issues.

Rachel May asks a follow-up question about the Brown Act: Do TAG and STEMI fall under the Brown Act?

Ryan Rosander says he has not heard back from counsel about those yet.

## 5. FUTURE AGENDA ITEMS

Dr. May asks if we can look at OB as well as discuss Dual Sequential Defibrillation.

Bill Mulkerin says he would like to look at the AMA policy.

Ryan Rosander says we are looking at the QI/QA and Investigations policies.

## 6. ADJOURNMENT

**Action: Brad Knox moved to approve PSFA, 152, 153, 219, 601, & 611 with changes. Matthew Bronson seconded. Motion carried unanimously.**

Chair Javine adjourned the meeting at 9:45 a.m.

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| **MEETING DATE** | March 20th, 2025 |
| **STAFF CONTACT** | Ryan Rosander, EMS Director<br>805.788.2512 rrosander@co.slo.ca.us |
| **SUBJECT** | Continuous Quality Improvement (CQI) and Quality Assurance (QA) |
| **SUMMARY** | Policy #300: Investigation and Disciplinary Process, has historically provided the framework for handling investigations, disciplinary actions, and certification reviews for Emergency Medical Technicians (EMTs), paramedics, and Mobile Intensive Care Nurses (MICNs) in San Luis Obispo County. While this policy has served to ensure public safety, its focus on punitive measures has highlighted the need for a broader, more collaborative, and system-focused approach.<br><br>Policy #100: Continuous Quality Improvement (CQI) and Policy #101: Quality Assurance (QA) were developed to align with modern healthcare standards and enhance system-wide evaluation and improvement processes. This transition reflects a shift from a punitive disciplinary approach to a proactive, quality-driven model aimed at identifying systemic issues, and improving performance. |
| **REVIEWED BY** | Dr. William Mulkerin, SLOEMSA Staff, Operations Committee, Clinical Advisory Committee |
| **RECOMMENDED ACTION(S)** | Policy #100, Policy #100 Attachment A, Policy #101, Policy #101 Attachment A, recommended for approval by EMCC. |
| **ATTACHMENT(S)** | Policy #100: Continuous Quality Improvement, Policy #100: CQI Review Process/Attachment A, Policy #101: Quality Assurance, Policy #101: SLOEMSA Provider Case Tracking Form/Attachment A. |

# POLICY #100: CONTINUOUS QUALITY IMPROVEMENT

I. PURPOSE

A. To establish a system-wide quality improvement program to evaluate the services provided within the County of San Luis Obispo Emergency Medical Services System. Emergency Medical Services System Continuous Quality Improvement Program (CQI Program)—evaluation methods composed of structure, process, and outcome evaluations that focus on improvement efforts to identify root causes of problems, intervene to reduce or eliminate these causes, correct the process, and recognize excellence in performance and delivery of care.

II. SCOPE

A. This policy applies to all EMS service providers and base hospitals within the County of San Luis Obispo's EMS System.

III. POLICY

A. The County of San Luis Obispo EMS Agency (SLOEMSA) will:

1. Develop and implement a system-wide written CQI Plan in cooperation with other EMS system participants, as defined in Title 22, Division 9. This plan will include indicators that address, but are not limited to, the following:

a. Personnel

b. Equipment and Supplies

c. Documentation

d. Clinical Care and Patient Outcome

e. Skills Maintenance/Competency

f. Transportation/Facilities

g. Public Education and Prevention

h. Risk Management

2. Establish and facilitate a system-wide comprehensive quality assessment and improvement program. The program will include, but is not limited to, the following activities:

a. Regularly scheduled CQI Committee meetings

(1) The CQI Committee must be multidisciplinary and include representatives from all levels (ALS and BLS) of field prehospital personnel, both public and private, air transport agencies, emergency medical dispatch, base hospitals, specialty care centers, and SLOEMSA staff/personnel.

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(2) The Emergency Medical Care Committee (EMCC) Chair will approve a CQI Committee Chairperson. The term of service will be two (2) years.

(3) Patient, provider, and base hospital confidentiality will be strictly maintained at all times during the CQI process. All committee proceedings and records are exempt from discovery (AB2225). All participants will sign a confidentiality agreement at the beginning of each meeting.

b. Ensure each provider and base hospital comply with reporting and other quality assessment requirements specified or determined in Title 22 Division 9 and the SLOEMSA CQI Plan.

c. Ensures each provider and base hospital submits a CQI plan to SLOEMSA for approval.

d. Ensures each provider and base hospital conducts an annual review of their CQI plan and submits any changes to the SLOEMSA for approval.

e. Review provider and base hospital CQI plans every five years

B. EMS Service Providers and Base Hospitals will:

1. Develop and implement, in cooperation with other EMS system participants, a provider/base hospital-specific written CQI program, as defined in Title 22, Division 9, and the SLOEMSA CQI Plan. Such programs must include indicators which address, but are not limited to, the following:

a. Personnel

b. Equipment and Supplies

c. Documentation

d. Clinical Care and Patient Outcome

e. Skills Maintenance/Competency

f. Transportation/Facilities

g. Public Education and Prevention

h. Risk Management

2. Review the provider/base hospital-specific CQI Program annually to ensure its appropriateness for its operation and revise as needed.

3. Participate in the SLOEMSA CQI Program, which may include making available mutually agreed-upon relevant records for program monitoring and evaluation.

4. When the EMS CQI Program identifies a need for improvement, develop an action plan for performance improvement in cooperation with appropriate personnel/agencies/base hospitals. If the area that needs improvement includes system clinical issues, coordination and consultation with the provider/base hospital and SLOEMSA are required.

5. Provide SLOEMSA with an annual update on the provider/base hospital CQI Program from the approval date and annually thereafter. The update must include, but not be limited to, a summary of how the provider's/base hospital's CQI Program addressed the program indicators.

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## IV. PROCEDURE

### A. Just Culture

Just Culture in EMS promotes a fair and balanced approach to accountability, recognizing that most errors result from system issues rather than individual fault. It encourages EMS providers to report mistakes openly, ensuring that learning and improvement take priority over punishment—except in cases of reckless or willful misconduct. By differentiating between human error, risky behavior, and negligence, Just Culture fosters a supportive environment where providers can improve practices, enhance patient safety, and strengthen overall system performance.

### B. Review Process

1. The first efforts to resolve conflicts should occur on a peer-to-peer level. The base hospital physician should be consulted if the issue is a timely patient care conflict. If the issue remains unresolved at the peer-to-peer level, a SLOEMSA Provider Case Tracking Form (Attachment A of Policy #101: Quality Assurance Program) should be forwarded to the provider's CQI representative. The CQI representative then refers to and follows Policy #101: Quality Assurance Program.

### C. Counseling and Remediation

1. Counseling and remediation are an essential aspect of the quality improvement process and include, but are not limited to:

   a. Recognition, reward, and reinforcement

   b. Case review and counseling on specific issues with focused QI review to monitor for recurrence over a specified period

   c. Didactic courses

   d. Supervised clinical time with a written outcome summary

   e. Didactic remediation with case scenario

   f. Topic-oriented research

   g. Development of in-service or written paper on a specific topic with supervised review

   h. Patient Care Record (PCR) and/or medical dispatch record review with a supervised written summary

   i. Focused quality improvement review of ongoing care, including but not limited to PCR review, field observation, and tape review

2. Recurrence of issues at any level may require increased counseling, monitoring, and/or remediation.

   a. A written remediation agreement with the involved individual(s) may include, but not be limited to:

      (1) Identification of the specific opportunity to improve

      (2) Identification of specific written future expectations, including the expected time frames for successful completion

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(3) Consequences of failure to comply

(4) Signature of personnel involved on the written agreement

(5) Timelines for resolution and conclusion

3. System-wide issues may be referred to the appropriate SLOEMSA committee(s) for assistance in resolving the issue.

## V. AUTHORITY

- California Health and Safety Code, Division 2.5
- California Code of Regulations, Title 22, Division 9

## VI. ATTACHMENTS

A. CQI Review Process – Flow Chart

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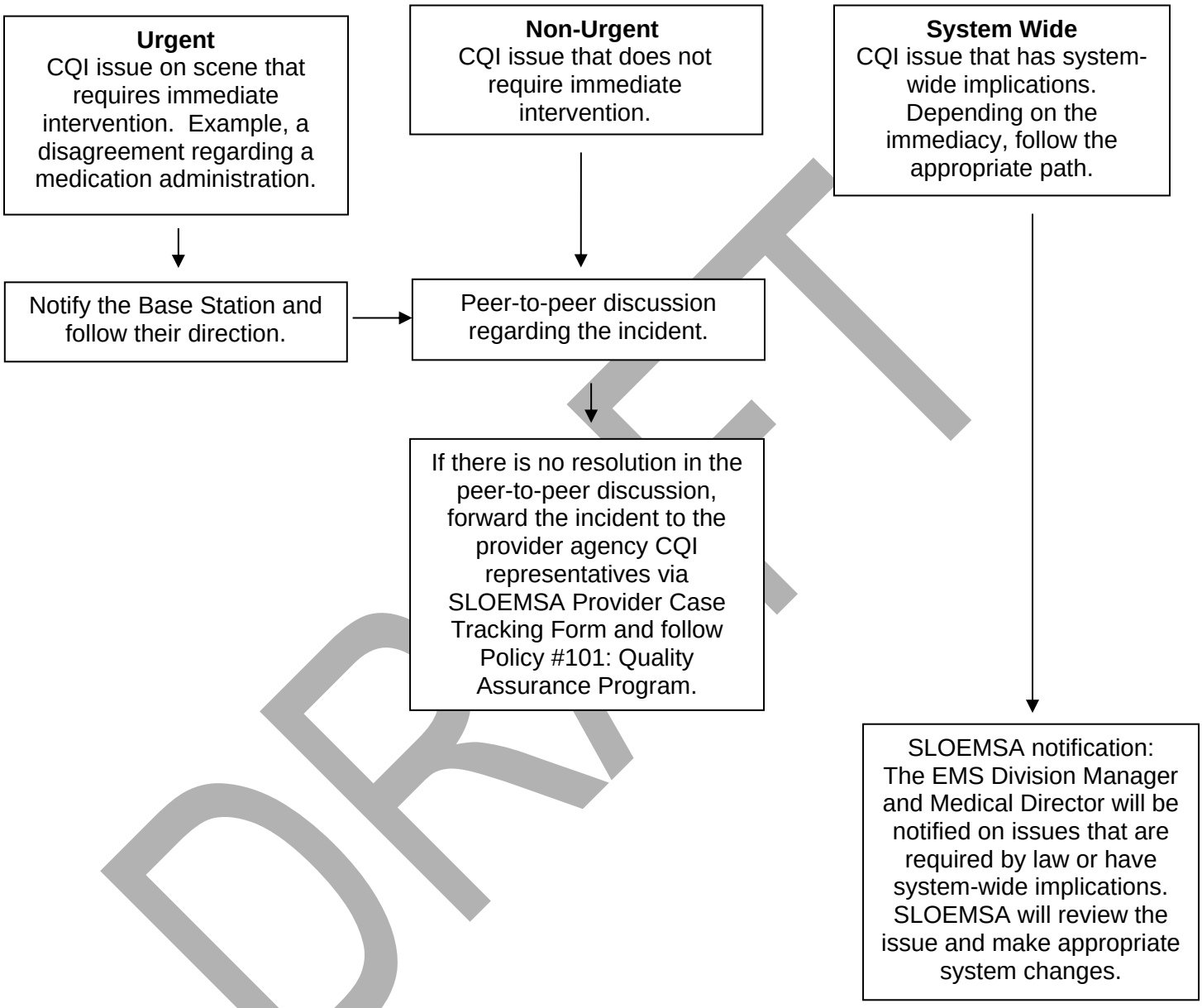
**CQI Review Process:**

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- Depending on the issue, the CQI representative(s) may contact the EMS Agency as soon as necessary.

# POLICY #101: QUALITY ASSURANCE PROGRAM

I. PURPOSE

A. The purpose of this policy is to describe the Quality Assurance Program (QAP), the responsibilities of the County of San Luis Obispo Emergency Medical Services Agency (SLOEMSA), the responsibilities of each emergency medical services (EMS) provider agency, and the incident review process. The primary goal of the SLOEMSA Quality Assurance Program (QAP) is to ensure continued high-quality patient care.

II. LEGAL BASIS:

A. EMT Personnel:

1. An employer of an emergency medical technician (EMT) may conduct investigations as necessary and take disciplinary action against an EMT who is employed by that employer for conduct alleging or indicating the possibility of a threat to public health and safety as listed in Division 2.5 of the Health and Safety Code, §1798.200. The employer shall notify the SLOEMSA medical director within (3) three working days when an allegation has been validated as a potential violation of one or more items listed under Division 2.5 of the Health and Safety Code (H&S), §1798.200.

2. An employer of an EMT employee shall notify the SLOEMSA medical director when a violation of one or more of the items listed under Division 2.5 of the H&S §1798.200 within (3) three working days after the EMT is terminated or suspended for a disciplinary cause, the EMT resigns following notification of an impending investigation based upon evidence that would indicate the existence of a disciplinary cause, or the EMT is removed from EMT-related duties for a disciplinary cause after the completion of the employer's investigation.

3. At the conclusion of an investigation, the employer of an EMT may develop and implement, in accordance with the guidelines for Model Disciplinary Orders (MDO), temporary suspensions and conditions of probation adopted pursuant to H&S §1797.184, a disciplinary plan for the EMT. Upon adoption of the disciplinary plan, the employer shall submit that plan to SLOEMSA within (3) three working days. The employer’s disciplinary plan may include a recommendation that the SLOEMSA medical director consider taking action against the holder’s certificate.

B. Paramedic Personnel:

1. When information comes to the attention of the SLOEMSA medical director that a paramedic license holder has committed any act or omission that appears to constitute grounds for disciplinary action under Division 2.5 of the H&S, §1798.200, the SLOEMSA medical director may evaluate the information to determine if there is reason to believe that disciplinary action may be necessary.

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2. If the medical director refers the matter to the California Emergency Medical Services Authority (EMSA) for further investigation and/or discipline of the paramedic license holder, the recommendation shall include all documentary evidence that was collected by the medical director while evaluating whether or not to make that referral. The recommendation and accompanying evidence shall be deemed in the nature of an investigative communication and be protected by §6254 of the Government Code. In deciding what level of disciplinary action is appropriate in the case, EMSA shall consult with the SLOEMSA medical director.

III. REPORTABLE INCIDENTS:

Issues that contributed to a negative patient outcome and/or issues involving grossly inappropriate behavior by any personnel involved. Additionally, issues that may potentially be a threat to public health and safety but did not necessarily contribute to a negative patient outcome. Listed below are examples of potential incidents:

A. Sentinel Events – A sentinel event is an unexpected occurrence involving death, serious physical or psychological injury, or the risk thereof. The phrase "or the risk thereof" includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome. Such events are called "sentinel" because they signal the need for immediate investigation and response.

B. Breach of the standard of care (i.e., failure to assess/act, patient abandonment).

C. Medication errors – errors in drug choice, dosage, and route.

D. Treatment errors – procedural errors (e.g., unrecognized esophageal intubation) or errors in assessment/application of treatment guidelines that lead to treatment errors (e.g., medication given or procedure done when not warranted).

E. Key equipment failure on a call directly related to the care of the patient.

F. Care beyond the appropriate scope of practice.

G. Failure to follow SLOEMSA policy or protocol.

H. Suspected violations of Division 2.5 H&S §1798.200.

I. Any alleged or known injury to a patient as a result of actions by EMS personnel.

IV. INCIDENT REVIEW

A. Any individual or organization may refer an incident for QA review.

B. Responsible organization must review each referred incident through their QA program as directed by the organization’s QA Policy and implement a Performance Improvement Plan (PIP) when indicated by review.

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C. At the end of the QA review, the organization responsible must provide feedback to the referring party and involved individual(s).

D. At the end of the QA review, regardless of level, the organization responsible must send the completed SLOEMSA Provider Case Tracking Form to SLOEMSA.

E. Disposition of QA review by Level:

1. **Level 1**

a) Maintain records within the organization's QIP Program

2. **Level 2**

a) Maintain records within the organization's QIP Program.

3. **Level 3:** (When they occur, SLOEMSA waits to see the provider's outcome)

a) Maintain records within the organization's QIP Program

b) Notify SLOEMSA within (3) three working days of the alleged violation

c) Submit a completed review and recommendation to SLOEMSA for review and approval

4. **Level 4**: (when they occur and SLOEMSA is notified and is involved with the investigation).

a) Maintain records within the organization's QIP Program

b) Follow employer review and action, with notification and involvement of SLOEMSA and the SLOEMSA Medical Director, as indicated by H&S §1798 et al.

c) Any patient care which may have occurred during the incident must also undergo QA/QI review and be reported to SLOEMSA.

V. DEFINITIONS OF INCIDENT LEVELS (SLOEMSA CAN UPGRADE OR DOWNGRADE):

**1. Level 1**

a) Policy compliance or system issues that do not directly impact patient care

b) Disrupted communication with treatment in compliance with protocol

Examples include, but not limited to:

- Communication or transport issues between responding agencies
- Documentation issues with a single or multiple responding medics

**2. Level 2**

a) Recurrent (more than 2) Level 1 incidents

b) Non-compliance with treatment protocols or policies with minimal potential for patient harm

Examples include, but not limited to:

- Failure to administer Aspirin (ASA) for chest pain

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- Failure to take a right-sided 12 lead for inferior infarct.

**3. Level 3**

a) Recurrent (more than 2) Level 2 incidents

b) Non-compliance with treatment protocols or policies with potential for patient harm

c) Care rendered or ordered outside scope of practice as defined by SLOEMSA policies and procedures:

Examples include, but not limited to:

- Failure to take STEMI or Trauma patient to the appropriate designated hospital
- Giving incorrect medication or incorrect dose of medication
- Failure to apply SMR when indicated by protocol

d) If a provider places an individual on a PIP for level 3 medical errors or above, notification to SLOEMSA shall occur.

**4. Level 4**

a) Any incident which qualifies for review under H&S §1798 et al.

## VI. POLICY

A. Prehospital Personnel Responsibilities:

1. Immediately report the above-defined incidents to an on-duty provider agency supervisor.
2. Immediately notify the RN or physician staff at the receiving facility if an error impacts or has a potential to impact patient health and well-being.
3. Immediately notify the base hospital MICN and/or physician who directed the call regarding errors involving base/modified base hospital contact issues.
4. Within 24 hours of the incident, submit a written incident report to the provider agency supervisory personnel describing the details of the alleged incident.
5. Reasonably cooperate with the investigation of the alleged incident.

B. Prehospital Provider Agency Responsibilities:

1. If the prehospital provider agency is the reporting entity, the following procedures shall be followed:

a) Provide a written report of the incident and any other incident-related materials (PCR, voice recordings, etc.) to the appropriate allied agency or hospital within (3) three working days of becoming aware of a reportable incident.

b) Provide reasonable and appropriate information to the investigating agency to assist them in completing their investigation.

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2. If the prehospital provider agency receives notification of a reportable incident from another entity, the following procedures shall be followed:

   a) Acknowledge receipt of the incident to the reporting party within 24 hours. In cases where an agency's CQI representative is off duty, the 24 hours will begin upon arrival on duty.

   b) Conduct a thorough incident investigation.

   c) Determine what action, if any, should be taken as a result of the findings of the investigative process. Such actions may include one or more of the following:

   - No action is necessary.
   - Remedial education.
   - Provider disciplinary action.
   - Referral to SLOEMSA and/or the California EMS Authority for potential certification/licensure action.
   - Referral to SLOEMSA for possible case review and/or policy/protocol revision.

   d) Prehospital providers shall document the tracking and resolution of reportable incidents using the SLOEMSA Provider Case Review Form. The SLOEMSA Provider Case Review Tracking Form shall be made available to SLOEMSA for any incident that requires referral to SLOEMSA for additional review/action.

   e) Notification of resolution shall be provided to the reporting agency/person(s). This notification shall be in compliance with current employment and confidentiality laws and, at a minimum, will advise that the incident has been investigated, resolved, and closed.

C. Base/Receiving Hospital Responsibilities:

1. If the base/receiving hospital is the reporting entity, the following procedures shall be followed:

   a) Provide a written report of the incident and any other incident-related materials (patient outcome information, voice recordings, etc.) to the appropriate prehospital provider agency within (3) three working days of becoming aware of a reportable incident.

   b) Provide reasonable and appropriate information to the investigating agency to assist them in completing their investigation.

2. If the base/receiving hospital receives a concern/complaint from a prehospital provider that involves the EMS system, the following procedures shall be followed:

   a) Conduct a thorough incident investigation.

   b) Determine what action, if any, should be taken as a result of the findings of the investigative process. Such actions may include one or more of the following:

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- No action is necessary.
- Remedial education.
- Provider disciplinary action.
- Referral to SLOEMSA for possible case review and/or policy/protocol revision.

c) Notification of resolution shall be provided to the reporting agency/person(s). This notification shall be in compliance with current employment and confidentiality laws and, at a minimum, will advise that the incident has been investigated, resolved, and closed.

D. Prehospital provider agencies and base hospitals shall report to SLOEMSA within (3) three working days if the reporting entity is not satisfied with the provider's investigation and/or resolution of the incident.

## VII. AUTHORITY

- California Health and Safety Code, Division 2.5
- California Code of Regulations, Title 22, Division 9

## VIII. ATTACHMENTS

A. SLOEMSA Provider Case Tracking Form

Approvals:

| | |
|---|---|
| EMS Agency, Administrator | |
| EMS Agency, Medical Director | |

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# Policy #101: Attachment A: SLOEMSA Provider Case Tracking Form

Reporting Party:

Agency Name:

Name of Reporting Party:

Date Reported: (MM/DD/YYYY)

Phone Number**:**

E-mail Address:

Date of Incident or Situation:

Time of Incident: (Military Time)

Run Number:

Date Investigation Initiated:

Parties Involved:

Agency Reported to:

Reporting Party Concerns:

Personnel (Units/ Engines / Shifts) Involved:

Level of Care Review:

- ◯ Level 1- Issue that does not directly impact patient care
- ◯ Level 2- Issue with potential for limited patient harm
- ◯ Level 3- Issue with potential for patient harm
- ◯ Level 4- Any incident which qualifies for review under California Health and safety Code 1798

Issue Category:

- ☐ Agency(LEMSA)
- ☐ Provider
- ☐ Hospital
- ☐ Individual
- ☐ None

Specific Issue(s):

- ☐ Airway
- ☐ Destination
- ☐ Documentation
- ☐ Equipment
- ☐ Interpersonal
- ☐ MCI
- ☐ Medication
- ☐ MICN Issue
- ☐ Patient Transfer of Care
- ☐ Physician Issue
- ☐ Base Modified/ Contact
- ☐ Dispatch
- ☐ Inappropriate Behavior
- ☐ Manpower Utilization
- ☐ Medical Control
- ☐ Patient Assessment
- ☐ Policy/ Protocol
- ☐ Other

Responding Party Response:

Final Level of Case Review Outcome:

- ◯ Level 1- Issue that does not directly impact patient care
- ◯ Level 2- Issue with potential for limited patient harm
- ◯ Level 3- Issue with potential for patient harm
- ◯ Level 4- Any incident which qualifies for review under California Health and safety Code 1798
- ◯ No Issue

Additional Information Provided/ Available to SLOEMSA:(Confidential)

- ☐ Base Hospital Audio Files
- ☐ Dispatch Audio Files
- ☐ Patient refusal of Service
- ☐ Pre Hospital Personnel Interviews
- ☐ Incident Reports
- ☐ Cardiac monitor/ AED
- ☐ PCR
- ☐ Base Hospital Documentation
- ☐ Dispatch Logs
- ☐ SLOEMSA Policy/ Protocol
- ☐ Body Cam Footage

Resolved Between Parties?

- ◯ Yes
- ◯ No ( Resolution to be Determined by SLOEMSA)

Resolution / Indetermination Comments:

Date Submitted to SLOEMSA:

Submitted by:

| | |
|---|---|
| **MEETING DATE** | March 20th, 2025 |
| **STAFF CONTACT** | Kaitlyn Blanton, EMS Coordinator<br>805.788.2513 kblanton@co.slo.ca.us |
| **SUBJECT** | Addition of Magnesium Sulfate and Ipratropium Bromide formularies for respiratory distress bronchospasms; increased naloxone dosing for opiate overdose; increased midazolam (Versed) dosing for active seizures and behavioral emergency patients.<br>Expansion of pre-term delivery protocol to include fetal viability and termination criteria for pre-term births in the field. |
| **SUMMARY** | The Respiratory Distress Bronchospasm Protocol #616 currently operates with standing orders for Albuterol and Epinephrine 1;1000. Based on feedback from field paramedics, a revision and broadening of the standing orders within Protocol #616 is requested for committee review. The option to include Ipratropium Bromide and Magnesium Sulfate as possible treatments for moderate and severe distress patients was added for review based on consultation with Dr. Mulkerin<br><br>Updates to dosing and formularies for Calcium Chloride and Epi 1;1000 are included, as well as the introduction of new formularies for Ipratropium Bromide and Magnesium Sulfate.<br><br>In addition to Magnesium Sulfate, the updated formulary for Calcium Chloride is included since Calcium Chloride is the accepted reversal for extreme cases of Magnesium Sulfate overdose. Keeping Calcium Chloride as a base order medication remains the same.<br><br>Increased adult IN dosing to operate in line with the current standard of practice is the revision of Naloxone dosing under protocol #618.<br><br>Additionally, increased dosing of midazolam (Versed) is proposed for adults and pediatric patients under Active Seizure protocol #620, and Behavioral Emergencies protocol #613 only. Dosing remains the same for sedation pre-cardioversion.<br><br>Lastly, due to recent conversations with field medics about a handful of unfortunate scene calls within the last few months involving pre-term deliveries as well as traumatic births, a need to expand protocol #650 Childbirth, #651 Newborn and policy #125 Prehospital Determination of Death, to include fetal viability was discussed with Dr. Mulkerin. This expansion was drafted in the hopes to better guide and support crews in their resuscitation efforts on these challenging calls. The EMSA will be further reviewing our OB protocols for more changes through the next few rounds of committees as well. |

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| | |
|---|---|
| **REVIEWED BY** | Dr. William Mulkerin, SLOEMSA Staff |
| **RECOMMENDED ACTION(S)** | Listed attachments are recommended for EMCC approval and to be published for field implementation. |
| **ATTACHMENT(S)** | Protocol #613 Behavioral Emergencies, Protocol #616 Respiratory Distress-Bronchospasm, Protocol #618 Respiratory Distress – Opiate OD, Protocol #620 Seizure Active, Ipratropium Bromide/Atrovent formulary, Magnesium Sulfate formulary, Midazolam formulary, Naloxone formulary, Calcium Chloride formulary<br><br>Protocol #650 Childbirth, Protocol #651 Newborn, Policy #125 Prehospital determination of Death |

# BEHAVIORAL EMERGENCIES

| ADULT | PEDIATRIC (≤34 KG) |
|---|---|
| **BLS** | |
| • Universal Protocol #601<br>• Pulse Oximetry<br>  ○ $O_2$ administration per Airway Management Protocol #602<br>• Assess for reversible causes such as: hypoxia, shock, hypoglycemia<br>• **Restraints per** Use of Restraints Procedure #711 | |
| **ALS Standing Orders** | |
| • Obtain a blood glucose as possible/safe<br>• **Midazolam**<br>  ○ Up to ~~2 mg~~ 5mg slow IV or<br>  ○ 5 mg IM/IN (split between nares)<br>  ○ May repeat once after 5 minutes - for significant agitation / threat to self or others | • Obtain blood glucose as possible/safe<br>• **Midazolam**<br>  ○ ~~0.1 mg/kg~~ up to 0.2 mg/kg slow IV not to exceed 5 mg<br>  Or<br>  ○ ~~0.1 mg/kg~~ up to 0.2 mg/kg IM/IN (split between nares) not to exceed 5 mg<br>  ○ Total max dose 5mg |
| **Base Hospital Orders Only** | |
| • As needed | • Repeat doses of **Midazolam**<br>• As needed |
| **Notes** | |
| • Behavioral Emergencies – severely agitated or aggressive patients that interfere with patient care or patient/crew safety<br>• IV or IM administration of Midazolam are the preferred routes<br>• Consider law enforcement support for violent or threatening patients<br>• "Tasered" patients – EMS personnel not to remove barbs, law enforcement may remove<br>• Pediatric maximum **volume** of one (1) mL per nostril per atomization (0.2-0.3 mL per nostril is ideal)<br>  ○ volumes > 1 mL are more likely to saturate the mucosal surface causing medication runoff into the proximal pharynx | |

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| SEIZURE (ACTIVE) | |
|---|---|
| **ADULT** | **PEDIATRIC (≤34KG)** |
| **BLS** | |
| • Universal Protocol #601<br>• Pulse Oximetry<br>  ○ $O_2$ administration per Airway Management Protocol #602<br>• Prevent patient from injuring themselves – Do not restrain | Same as Adults |
| **BLS Elective Skills** | |
| Obtain Blood Sugar Level – if <60 mg/dL see Altered Mental Status Protocol #612 | |
| **ALS Standing Orders** | |
| • **Midazolam**<br>  ○ ~~2 mg~~ 5 mg slow IV or<br>  ○ 5 mg IM/IN (split between nares)<br>  ○ May repeat once after 5 min - for patients with persistent or recurrent seizure<br>• Obtain blood sugar level | • **Midazolam**<br>  ○ ~~0.1 mg/kg~~ 0.2 mg/kg slow IV not to exceed ~~2 mg~~ 5 mg<br>  ○ ~~0.1 mg/kg~~ 0.2mg/kg IM/IN (split between nares) not to exceed 5 mg<br>• Obtain blood sugar level |
| **Base Hospital Orders Only** | |
| • As needed<br>• For patients who are pregnant and seizing (concerns for eclampsia) – consult Base Physician for possible Magnesium Sulfate administration and dosing | • Repeat doses of **Midazolam**<br>• As needed |
| **Notes** | |
| • Pediatric maximum **volume** of one (1) mL per nostril per atomization (0.2-0.3 mL per nostril is ideal)<br>  ○ volumes > 1 mL are more likely to saturate the mucosal surface causing medication runoff into the proximal pharynx | |

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# MIDAZOLAM (Versed®)

**Classification:** Benzodiazepine

**Actions:**

1. Hypnotic, amnesiac, sedative, anticonvulsant
2. Potent but short-acting, 3-4 times more potent than diazepam
3. Has NO effect on pain

**Indications:**

1. Active, continuous seizure
2. Status epilepticus
3. Sedation prior to cardioversion
4. Acute behavior disorder (agitated patient danger to self or others)
5. Severe muscle spasms (base physician order only)

**Contraindications (Relative):**

1. **History of hypersensitivity to benzodiazepines**
2. **Shock with depressed vital signs**
3. **ALOC of unknown etiology / polypharmacy ingestion**
4. **Narrow-angle glaucoma**
5. **Eclampsia (base physician order only)**

**Adverse Effects (Precautions, Side Effects and Notes):**

**Midazolam may cause respiratory depression and/or hypotension especially if administered rapidly. Monitor patient closely.**

1. Common side effects include drowsiness, hypotension, respiratory depression and apnea. These are more likely to occur in the very young and the very elderly. Rarely, patients may experience paradoxical agitation.
2. Respiratory depression is more likely in patients who have taken other CNS depressant drugs such as opioids, alcohol, other benzodiazepines or barbiturates, or when given rapidly.
3. Midazolam is metabolized in the liver and excreted by the kidneys. **Doses should be adjusted accordingly in patients with underlying hepatic or renal diseases or cardiac diseases with low flow states such as CHF.**
4. GI effects include nausea, vomiting, hiccough/hiccup
5. Pain at injection site (IV/IM), intranasal irritation if given IN

**Administration:**

**ADULT DOSE**

1. **Seizure**:
   - ~~1-2 mg~~ 5 mg SLOW IV or
   - 5 mg IM or IN ~~(2.5 mg each nostril)~~ (split dose between nares)
   - **May repeat once after 5 minutes**

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**MIDAZOLAM (Versed®) - continued**

2. **Pre-cardioversion sedation**:
   - 1-2 mg SLOW IV
   - 5 mg IN (intranasal) ~~(split dose: 2.5 mg each nostril)~~ (split dose between nares)
   - **May repeat once after 10 minutes**

3. **Agitated patient sedation** (danger to self or others):
   - ~~1-2 mg~~ Up to 5 mg SLOW IV
   - 5 mg IM or IN (intranasal) ~~(split dose: 2.5 mg in each nostril)~~ (split dose between nares)
   - **May repeat once after 5 minutes**

*****EKG, Pulse oximetry, and ETCO2 (when equipment is available) monitoring will be used at all times.**

**PEDIATRIC DOSE**

1. **Seizure/Agitated Patient Sedation**:
   - ~~0.1 mg/kg~~ 0.2 mg/kg SLOW IV not to exceed 5 mg
   - ~~0.1 mg/kg~~ 0.2 mg/kg IM/IN not to exceed 5 mg
   - Total max dose 5 mg

   (IN **volume** for pediatric patient up to ~~0.3ml~~ 1ml per nostril)
   Pediatric maximum **volume** of one (1) mL per nostril per atomization (0.2-0.3 mL per nostril is ideal)

   - volumes > 1 mL are more likely to saturate the mucosal surface causing medication runoff into the proximal pharynx

2. **Pre-cardioversion:**
   - 0.1 mg / kg IN or SLOW IV.
   - Max 2mg

*****EKG, Pulse oximetry, and ETCO2 (when equipment is available) monitoring will be used at all times.**

**Onset:** 1.5 - 5 minutes IV
2 - 6 minutes IN
15 minutes IM

**Duration:** 2 - 6 hours for IV/IN/IM

# RESPIRATORY – BRONCHOSPASM ASTHMA/COPD/CROUP

| ADULT | PEDIATRIC (≤34 KG) |
|---|---|
| **BLS** | |
| • Universal Protocol #601<br>• Pulse Oximetry<br>  ○ $O_2$ administration per Airway Management Protocol #602<br>• May assist with patient's prescribed medication, inhaler, etc. | |
| **BLS Elective Skills (Approved Providers Only)** | |
| • **CPAP** per Airway Management Protocol #602 | • None |
| **BLS Optional Scope Skill (Approved Providers Only)** | |
| **ASTHMA**<br>~~**Unstable/Extremis**~~ **Moderate to Severe Distress**<br>• **Epinephrine 1:1,000** 0.3 mg IM<br>  ○ No repeat | **ASTHMA**<br>~~**Unstable/Extremis**~~ **Moderate to Severe Distress (≥15 kg)**<br>• **Epinephrine 1:1,000** 0.15 mg IM – anterolateral thigh<br>  ○ No repeat |
| **ALS Standing Orders** | |
| **BRONCHOSPASM/ASTHMA/COPD**<br>~~**Stable**~~ **Mild**<br>• **Albuterol** 2.5-5 mg via HHN/Mask/CPAP/BVM with adjunct over 5-10 min<br>  ○ repeat as needed<br><br>~~**Unstable**~~ **Moderate**<br>• **Albuterol** 2.5-5 mg via HHN/Mask/CPAP/BVM with adjunct over 5-10 min<br><br>Combined with:<br>• **Ipratropium Bromide** 500 mcg via HHN/Mask/CPAP/BVM with adjunct over 5-10 min<br>  ○ Repeat once after 20 minutes<br><br>• ~~**Epinephrine 1:1,000** 0.01 mg/kg IM – not to exceed 0.5 mg~~<br>  ○ ~~may repeat every 5 min, max 3 doses~~<br>~~**Extremis**~~ **Severe distress**<br>• In addition to previous therapies:<br>• **Epinephrine 1:1,000** 0.01 mg/kg IM – not to exceed 0.3 mg<br>  ○ Additional doses – base order only<br>  ○ Age less than 70<br>  ○ History of Asthma or COPD<br>  ○ No signs or symptoms suggestive of MI/STEMI<br>  ○ No history of angina, CVA, MI | **BRONCHOSPASM/ASTHMA**<br>~~**Stable**~~ **Mild**<br>• **Albuterol** 2.5-5 mg via HHN/Mask/BVM with adjunct over 5-10 min<br>  ○ repeat as needed<br><br>~~**Unstable**~~ **Moderate**<br>• **Albuterol** 2.5-5 mg via HHN/Mask/BVM with adjunct over 5-10 min<br><br>Combined with:<br>• **Ipratropium Bromide** 250 mcg via HHN/Mask/BVM with adjunct over 5-10 min<br>  ○ Repeat once after 20 minutes<br><br>~~**Extremis**~~ **Severe distress**<br>• In addition to previous therapies:<br>• **Epinephrine 1:1,000** 0.01 mg/kg IM – not to exceed 0.3 mg<br>  ○ Additional doses – Base order only<br><br>**Severe distress – unresponsive to previous therapy**<br>• **Magnesium sulfate** IV 50 mg/kg max of 2 Gm (over 20 minutes)<br>  ○ Additional doses – base order only<br>  ○ See notes or formulary for mixing instructions<br>• ~~**Epinephrine 1:1,000** 0.01 mg/kg SL – not to exceed 0.3 mg~~<br>  ○ ~~may repeat every 5 min, max 3 doses~~ |

**Severe distress – unresponsive to previous therapy**

- **Magnesium Sulfate** IV 2 Gm (over 20 minutes)
  - May repeat once
  - See notes or formulary for mixing instructions
- ~~**Epinephrine 1:1,000** 0.01 mg/kg SL – not to exceed 0.5 mg~~
  - ~~may repeat every 5 min, max 3 doses~~

**~~COPD/BRONCHOSPASM~~**

**Stable**

- ~~**Albuterol** 2.5-5 mg via HHN/Mask/CPAP/BVM with adjunct over 5-10 min~~
  ~~repeat as needed~~

**CROUP**

**Stable**

- **Humidified oxygen** via HHN/Mask or blow-by

## Base Hospital Orders Only

**Unresponsive to previous therapy**

- **Epinephrine 1:1,000** 0.01 mg/kg IM – subsequent doses
- **Epinephrine 1:10,000** 0.01 mg/kg (0.1 mL/kg) slow IV titrated – not to exceed 0.5 mg
- If Magnesium Sulfate toxicity is suspected, contact base for Calcium Chloride orders
  - **Indications:**
  - Hyporeflexia
  - Respiratory Depression
  - New onset altered mental status
  - New onset cardiac rate and rhythm changes
- As needed

**Unresponsive to previous therapy**

- **Epinephrine 1:10,000** 0.01 mg/kg (0.1 mL/kg) slow IV titrated – not to exceed 0.3 mg
- If Magnesium Sulfate toxicity is suspected, contact base for Calcium Chloride orders
  - **Indications:**
  - Hyporeflexia
  - Respiratory Depression
  - New onset altered mental status
  - New onset cardiac rate and rhythm changes

**CROUP**

- **Albuterol** 2.5-5 mg via HHN/Mask/BVM over 5-10 min
  - repeat per base order
- As needed

## Notes

**BRONCHOSPASM –** narrowing of lower airways, may be associated with: wheezes, cough, and chest tightness

- Can be caused by: respiratory infections, exposures (toxins, allergens, fire/smoke), exercise, stress, cold dry air
- Evaluate history of: chronic lung disease, prescribed medications, allergies, chronic infections (TB, Coccidioidomycosis)

**Magnesium Sulfate Mixing Instruction –** 1 Gm IV in 100cc normal saline over 10 minutes, immediately repeated once for a total dose of 2 Gm IV.

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# CALCIUM CHLORIDE (CaCl2)
## (Base Hospital Order Only)

**Classification**: Electrolyte

**Actions:**

1. Acts as an activator in transmission of nerve impulses and contraction of cardiac, skeletal, and smooth muscles.
2. Maintains cell membrane and capillary permeability.

**Indications:**

1. Cardiac arrest or significant instability associated with hyperkalemia (suspect in renal failure) or Ca channel blocker toxicity.
2. Overdose on Calcium Channel Blocker medications.
3. Signs of Magnesium toxicity:
   - Hyporeflexia (indicated by decreased deep tendon reflexes)
   - Respiratory Depression
   - New onset altered mental status
   - New onset of cardiac rate and rhythm changes

**Contraindications:** Hypercalcemia

**Adverse Effects**:

| **Cardiovascular** | **Metabolic** |
|---|---|
| Cardiac arrest | Hypercalcemia |

**Administration**:

**ADULT DOSE**
1 Gm slow IVP/IO

**PEDIATRIC DOSE**
20 mg/kg slow IVP/IO not to exceed 500 mg per dose

**Onset**: Immediate

**Duration**: 30 minutes - 2 hours

**Notes**:

- Calcium Chloride will precipitate if in a solution with Sodium Bicarbonate.

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# EPINEPHRINE 1:1,000 (Adrenalin®)

**Classification**: Sympathomimetic agent (catecholamine)

**Actions:**

1. Increases cardiac output due to increased inotropy, chronotropy, dromotropy, and AV conduction (*b*1 effect)
2. Relaxes smooth muscles of the respiratory tract (*b*2 effect)
3. Increases systolic blood pressure due to increased cardiac output (*b*1effect) and vasoconstriction (*a* effect)
4. Increases coronary perfusion during CPR by increasing aortic diastolic pressure

**Indications:**

1. Cardiopulmonary arrest
2. Anaphylaxis
3. Respiratory distress with wheezing
4. Pediatric symptomatic bradycardia
5. Neonatal resuscitation
6. Suspected croup or epiglottitis

**Contraindications:**

1. **Use with caution in pregnancy.**
2. **Consider base physician consultation if possible if the patient has signs or history suggestive of MI, angina or hypertension**
3. **Age greater than 70 in cases of Respiratory Distress/Bronchospasm**

**Adverse Effects**:

**Cardiovascular**
Tachycardia
Hypertension
Chest pain
Palpitations
Ventricular fibrillation

**Neurological**
Anxiety
Dizziness
Headache
Tremors
Seizures

**Gastrointestinal**
Nausea/vomiting

**Administration:** **ADULT DOSE**

1) ~~Asthma~~ **Severe Bronchospasm/Asthma/COPD:** 0.01 mg/kg IM, not to exceed 0.3mg ~~0.5 mg, may repeat every 5 minutes, not to exceed 3 doses~~, additional doses – base order only

a) **BLS Optional Skill (approved providers only):** 0.3 mg IM – no repeat

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2) **Allergic reaction/anaphylaxis:** 0.01 mg/kg **IM**, not to exceed 0.5 mg, may repeat every 5 minutes, not to exceed 3 Additional doses – base order only

## EPINEPHRINE 1:1,000 (Adrenalin®) CONTINUED

### PEDIATRIC DOSE

~~1)~~ **Bronchospasm/Asthma:** 0.01 mg/kg, IM, not to exceed 0.3 mg, additional doses – base order only ~~may repeat every 5 minutes, not to exceed 3 doses~~ 0.01 mg/kg

a) **BLS Optional Skill (approved providers only):** 0.15 mg IM – no repeat

2) **Allergic reaction/anaphylaxis:** 0.01 mg/kg, **IM**, not to exceed 0.3 mg, may repeat every 5 minutes, not to exceed 3 doses

3) **Bradycardia:** The first line drug in pediatric bradycardia is epinephrine 1:10,000

**Notes:**

- IM administration is with 1-1½" needle in anterior/lateral thigh or deltoid.
- Tachycardia is not a contraindication to Epinephrine.

# Ipratropium Bromide (Atrovent®)

**Classification:** Anticholinergic Bronchodilator

**Actions:**

1. Blocks interaction of acetylcholine (antagonist) at muscarinic cholinergic receptors and bronchial smooth muscle receptor sites
2. Reduced mucus production
3. Decreased level of cyclic guanosine monophosphate

**Indications:**

1. Respiratory distress with wheezes/bronchospasm
2. SOB due to COPD exacerbation or asthma
3. Persistent bronchospasms

**Contraindications:** **Known hypersensitivity to Ipratropium or Atropine**

**Adverse Effects:**

| | |
|---|---|
| Mydriasis | Headache |
| Tachycardia | Anxiety |
| Blurred Vision | Skin Flushing |
| Nausea/Vomiting | Paradoxical Bronchospasm |

**Administration:**

**ADULT DOSE**

500 mcg via HHN/Mask/CPAP/BVM with adjunct over 5-10 minutes

- Repeat once after 20 minutes

**PEDIATRIC DOSE**

250 mcg via HHN/Mask/BVM with adjunct over 5-10 minutes

- Repeat once after 20 minutes

**Onset:** <15 minutes

**Duration:** 2-4 hours

**Notes:**

- Ipratropium Bromide should be administered with oxygen, be sure to closely monitor the patient's vital signs and cardiac status
- Ipratropium Bromide is to be utilized in combination with Albuterol
- Ipratropium Bromide aerosols can cause paradoxical bronchospasms which usually happen upon initial use of medication. If this occurs, Ipratropium Bromide should immediately be discontinued
- Avoid contact with eyes

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# Magnesium Sulfate (xxxxxxxx®)

**Classification:** Electrolyte, Anticonvulsant, CNS Depressant

**Actions:**

1. Blocks peripheral neuromuscular transmission by reduction of acetylcholine release
2. Reduces striated muscle contraction

**Indications:**

1. Status asthmaticus unresponsive to beta-antagonists or anticholinergics
2. SOB due to COPD exacerbation or asthma

**Contraindications:**

**Heart blocks**

**MI / History of MI**

**Hypotension**

**Hypermagnesemia**

**Precautions:** Renal Insufficiency

**Adverse Effects:**

| | |
|---|---|
| Hyporeflexia (decreased reflexes) | Diaphoresis |
| AV Block/Complete Heart Block | Itching/Rash |
| Bradycardia | Drowsiness |
| Respiratory Depression | Facial Flushing |

**Administration:**

**ADULT DOSE**

**Refractory in Severe Respiratory Distress and Bronchospasm:**

2Gm in 250cc Normal Saline over 20 minutes

- May repeat once after 5 minutes

**PEDIATRIC DOSE**

**Refractory in Severe Respiratory Distress and Bronchospasm:**

50mg/kg max of 2Gm in 250cc Normal Saline over 20 minutes

- Repeat doses – base order only

**Onset:** IV - immediate

**Duration:** IV - 30-60 minutes

**Notes:**

- If patient presents with hyporeflexia, discontinue Magnesium Sulfate immediately
- If overdose is suspected consult with base immediately to give calcium chloride to reverse effects
- Magnesium Sulfate Overdose Indications:
  - New onset altered mental status

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- New onset of cardiac rhythm and rate changes
- Respiratory depression
- Hyporeflexia - Decreased deep tendon reflexes

# RESPIRATORY DISTRESS – OPIOID OVERDOSE

| ADULT | PEDIATRIC (≤34 KG) |
|---|---|
| **BLS** | |
| • Universal Protocol #601<br>• Pulse Oximetry<br>  ○ $O_2$ administration per Airway Management Protocol #602<br>• May assist with administration of patient's prescribed medication | Same as Adult |
| **BLS Elective Skills** | |
| **Suspected Opiate Overdose with inadequate respirations**<br>($O_2$ Sat < 94%, rate ≤ 8 bpm)<br>• **Narcan** 4 mg IN in one nare – assess for adequate respirations<br>  ○ may repeat in alternate nare if no improvement after 2 min, max total of 2 doses | |
| **ALS Standing Orders** | |
| **Suspected Opiate Overdose with inadequate respirations**<br>($O_2$ Sat < 94% or $ETCO_2$ > 45 mmHg)<br>• **Narcan**<br>  • Up to 1 mg IV/IM<br>  ○ Repeat as needed<br>  • Up to 2 mg IN (split between nares) – assess for adequate respirations<br>  ○ Repeat as needed<br>~~**Extremis**~~<br>• ~~**Narcan** 0.5 mg SL – assess for adequate respirations~~<br>  ○ ~~repeat as needed~~ | **Suspected Opiate Overdose with inadequate respirations**<br>($O_2$ Sat < 94% or $ETCO_2$ > 45 mmHg)<br>• **Narcan** 0.1 mg/kg IV/IM/IN (split between nares) up to 1 mg – assess for adequate respirations<br>  ○ repeat as needed<br>~~**Extremis**~~<br>• ~~**Narcan** 0.5 mg SL – assess for adequate respirations~~<br>  ○ ~~repeat as needed~~ |
| **Base Hospital Orders Only** | |
| • As needed | • As needed |
| **Notes** | |
| • IV is preferred route for Narcan administration<br>• Inadequate airway, and respirations should be supported with BLS adjuncts and ventilations prior to Narcan administration<br>• Poly-mixed drugs may require additional doses of Narcan titrated to maintain respirations<br>• Alternate Narcan dosing for BLS Elective Skills may be added with approval of the EMS Agency Medical Director | |

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# NARCAN (Naloxone®)

**Classification**: Narcotic antagonist

**Actions:**

1. Displaces narcotics from opiate receptor sites
2. Reverses respiratory depression, sedation, and pupillary effects of narcotics.

**Indications:** Respiratory depression and/or altered LOC associated with suspected narcotic overdose

**Contraindications:** None

**Adverse Effects**:

**Cardiovascular**
Tachycardia
Hypertension

**Neurological**
Pupillary dilation

**Gastrointestinal**
Nausea/vomiting

**Administration**:

**ADULT DOSE**

1. Titrate 1 mg IV/IM
    a. Repeat as needed
2. Up to 2 mg IN (split dose between nares) – repeat to maintain adequate respirations (IV preferred route)
    a. Repeat as needed
3. ~~Extremis 0.5 mg SL - repeat to maintain adequate respirations~~

**PEDIATRIC DOSE**

1. Titrate 0.1 mg/kg IV/IM/IN (split dose between nares) - to a maximum dose of 1 mg - may repeat to maintain adequate respirations
2. ~~Extremis 0.5 mg SL - repeat to maintain adequate respirations~~

**Onset**: 1-2 minutes

**Duration**: 45 minutes

**Notes**:

- Administer Narcan prior to intubation in a patient with severe respiratory depression when narcotic induced coma is suspected.
- If there is no response to IV Narcan after 1-2 minutes, the etiology of the altered level of consciousness should be questioned (5 minutes for IM).
- IM administration is with 1 1½ " needle in anterior/lateral thigh or deltoid.
- ~~SL injection is with a small 25 gauge ¼" TB syringe.~~

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# POLICY #125: PREHOSPITAL DETERMINATION OF DEATH / DO NOT RESUSCITATE (DNR) / END OF LIFE CARE

## I. PURPOSE

A. To establish criteria for the determination of death and/or the termination of resuscitative measures and outline the procedure to be followed by EMS personnel in the County of San Luis Obispo (SLO).

## II. DEFINITIONS

- Obvious Death Criteria: When a patient is assessed to be pulseless and apneic and one or more of the following conditions is present:
  1. Decapitation
  2. Evisceration of heart or brain
  3. Incineration
  4. Rigor Mortis
  5. Decomposition
- Resuscitation: Advanced Life Support (ALS) interventions whose purpose is to restore cardiac or respiratory activity at the scene of an emergency.
- Resuscitative Measures: includes chest compressions (CPR), assisted ventilation (breathing), endotracheal intubation, defibrillation, and cardiotonic drugs (drugs which stimulate the heart).
  - Such measures do **not** affect the provision of life sustaining measure such as artificial nutrition or hydration or the provisions of other emergency medical care, including treatment for pain, difficulty breathing, major bleeding, or other medical conditions.
- End of Life Care: Medical interventions whose purpose is to alleviate suffering and provide comfort, in association with information provided in a POLST form, Advanced Directives, Durable Power of Attorney or other end of life care documents
- Do Not Resuscitate (DNR) Order – An order to withhold resuscitation, including:
  1. California Durable Power of Attorney for Health Care (DPAHC): As defined in California Civil Code, Sections 2410-2444. And a health care agent designated therein is present, and that agent requests that resuscitation not be done.
  2. Physician Order for Life-Sustaining Treatment (POLST) – Section A “Do not attempt resuscitation/DNR (Allow Natural Death)”
  3. A fully executed Natural Death Act Declaration
  4. DNR Medallion: A metal or permanently imprinted insignia, worn by a patient, that has been manufactured and distributed by an organization approved by the California State Emergency Medical Services Authority. The insignia must be

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imprinted with the words “Do Not Resuscitate, EMS,” “Do Not Resuscitate, or “POLST”.

5. A written document in the patient’s permanent medical record for patients who are in a licensed health care facility, or who are being transferred between licensed health care facilities containing the statement “Do Not Resuscitate”, “No Code”, or “No CPR” and whose authenticity has been verbally documented by a witness from the health care facility.

## III. POLICY

A. All patients require immediate medical evaluation.

B. Patients without signs of life and without signs of Obvious Death must be evaluated for resuscitation unless the First Responder is presented with an operative Do Not Resuscitate (DNR) order.

C. A **First Responder** may withhold resuscitation when:

1. The criteria of Obvious Death are present.
2. The Patient has no signs of life and it is verified the patient is the person with the DNR order.

3. Pre-term deliveries or spontaneous abortions with a gestation ≤20 weeks without signs of life (pulseless, not breathing) are considered non-viable. A first responder may withhold resuscitation on scene.

   a. If uncertain as to gestational age begin resuscitation and establish base hospital contact.

   b. Initiation of resuscitation efforts may be also made based on provider judgement of scene itself.

D. An **“on-duty EMT, Paramedic or Flight/CCT Nurse”** may additionally withhold resuscitation when one or more of the following conditions are present:

1. Base Physician or MICN contact is not required

   a. Reliable history of cardiac arrest with no CPR for more than 20 minutes

   b. Traumatic arrest without signs of life upon EMS arrival

   c. Severe or multiple injuries clearly incompatible with life

   d. Resuscitation was initiated and information became available that would have prevented the initiation of resuscitation (i.e. Physician Orders for Life Sustaining Treatment (POLST) or advanced directive)

2. Consultation with the STEMI Base Hospital (French Hospital) physician or MICN:

   a. For termination of resuscitative measures for medical arrest of cardiac origin > 34 kg unresponsive to ALS procedures after 20 min of resuscitation (include a capnography reading if available)

   b. Left Ventricular Assist Device (LVAD) or other mechanical ventricular devices are present

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3. Consultation with the SLO Trauma Center (SVRMC) physician or MICN:

    a. Traumatic Arrest with signs of life upon EMS arrival, unresponsive to ALS procedures and more than 20 minutes estimated time for transport to Trauma Center or closest hospital (refer to protocol #661)

4. Consultation with the closest SLO base hospital physician or MICN:

    a. All other termination orders: e.g. medical arrest of pediatrics <34 kg, atraumatic arrests due to non-cardiac origin (refer to protocol #641)

E. DNR Orders must be considered operative only if one or more of the following circumstances exist:

1. The patient is wearing a DNR Medallion.
2. An approved DNR Order as defined above is present (original or photocopy), fully executed, and the document has been read and reviewed on scene by the First Responder.
3. For patients who are in a licensed health care facility, or who are being transferred between licensed health care facilities, a written document in the patient's permanent medical record containing the statement "Do Not Resuscitate", "No Code", or "No CPR" has been read and reviewed on scene by the First Responder. The authenticity of this document must be verbally documented by a witness from the health care facility.

F. During an MCI

1. No Base Hospital contact is necessary.
2. A triage tag denoting "black" with the time of the initial evaluation and findings must be applied.
3. Deceased patients should not be moved unless directed by the Coroner, as needed to access other patients requiring medical care or assessment, for the safety of First Responders, or for other extraordinary circumstances.

G. Nothing in this policy will prevent peace officers from acting within the scope and course of their official duties and pronouncing death as permitted by the policies of their agencies.

## IV. PROCEDURE

A. DNR order is presented:

1. A patient with no pulse and no respiratory effort - resuscitation efforts must be withheld or terminated.

    a. No Base Station contact is necessary unless the validity of the DNR is unclear

2. A patient with a pulse and or respiratory effort:

    a. POLST - follow the directions noted in Section A - cardiopulmonary resuscitation (CPR) and Section B - medical intervention (http://capolst.org/)

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b. Other advanced directives - follow any supportive care and interventions as noted

c. Provide care and treatment within paramedic scope of practice, unless clearly excluded by the documents

d. Consult the Base Hospital if situation is unclear

B. No DNR order presented:

1. Patient evaluated for resuscitation as defined above (III:B,C,D)

C. When resuscitation has been withheld or terminated:

1. The Coroner must be contacted.
2. Deceased patients should not be moved unless directed by the Coroner except to access other patients requiring medical care or assessment, for the safety of First Responders, or for other extraordinary circumstances.
3. A cellular or landline telephone to the Base Hospital should be used rather than radio communication in order to maintain patient confidentiality and family privacy.

Whenever resuscitation is terminated in the field, all IV lines, airways, etc., must be left in place.

## V. DOCUMENTATION

1. The circumstances under which resuscitation was not initiated or was terminated, including results of the physical exam, and/or any additional findings such as a lack of heart and lung sounds, fixed and dilated pupils, skin color, ECG tracing and capnography if available
2. The resuscitation measures performed, if any, and the results thereof.
3. The name of the First Responder terminating resuscitative measures or the name of the Base Hospital physician who pronounced the patient
4. The time of termination or non-initiation of resuscitation
5. When DNR is present:
    a. Name of physician on the DNR
    b. Date the DNR order was signed
    c. Type of DNR - attach copy when possible
    d. Name of the person that confirmed patient identity
    e. Name and certification # of the person and the agency name if determination or resuscitative measures were made by other than the transporting agency

## VI. AUTHORITY

- A. Health and Safety Code, Division 2.5, Sections 1797.200, 1797.220, 1798, 1798.6. and Division 7, Section 7180.

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- California Code of Regulations, Title 22, Division 9, Sections 100015, 100144, 100147, and 100169.
- California Probate Code Sections 4780-4785.
- California Code of Regulations, Title 22, Sections 70707(6), 72527(a) (4).
- AB19 California POLST eRegistry

## VII. REFERENCES

- POLST California

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# CHILDBIRTH

## NORMAL

### BLS

- Universal Protocol #601
- Pulse Oximetry
  - 02 administration per Airway Management Protocol #602

**Delivery**

- Patient assessment with visual exam of perineum for crowning
- Control head and speed of delivery
- Check for cord around neck
- Deliver upper, then lower shoulder
- Dry, stimulate, and wrap baby
- Suction airway as needed
- Cut and clamp cord 6" from newborn's umbilicus
- Healthy infant to mother's breast
- Prepare for delivery of placenta

**Postpartum Hemorrhage Control**

- Perform visual exam to determine site of bleeding
- For perineal tear, apply direct pressure
- Firmly massage fundus

### ALS Standing Orders

- Refer to appropriate protocol based on patient's presentation

### Base Hospital Orders Only

- As needed

### Notes

## COMPLICATIONS

### BLS

- Universal Protocol #601
- Pulse Oximetry
  - 02 administration per Airway Management Protocol #602

**Initiate Transport Early**

- Hypertension BP > 180/110 mmHg
- Seizures — follow Seizure Protocol #620
- Vaginal bleeding in last trimester not associated with labor may indicate Placenta Previa/Abruptio
- Breech/Limb presentation
- Prolapsed cord – Place mother in knee-chest position. Feel cord for pulse. With gloved hand, push baby into vagina slightly to take pressure off cord. Maintain this position. Do not attempt to push cord back

**Newborn Viability**

- Gestation ≤20 weeks without signs of life (pulseless, not breathing) are not considered viable. Resuscitation may be withheld by first responder
  - If gestational age is uncertain – initiate resuscitation and contact nearest Base hospital
  - Provider judgement of scene may also warrant initiation of resuscitation efforts in gestation of ≤ 20 week newborn
  - If resuscitation initiated - contact nearest Base Hospital

### ALS Standing Orders

- Refer to appropriate protocol based on patient's presentation

### Base Hospital Orders Only

- As needed

### Notes

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- Knee-chest position for prolapse cord presentation (above)
- General guideline transport in left lateral position Obtain Para/Gravida
- Refer to policy #125 for withholding resuscitation on pre-term fetal delivery ≤ 20 weeks gestation.
- If delivery of neonate with gestational age ≤20 weeks without resuscitation efforts, transport of pregnant patient is still encouraged. Use OB-kit swaddle/blanket for transport of neonate.
- If resuscitation of gestational age ≤ 20 weeks is initiated, continue with newborn resuscitation per protocol #641 with early base hospital notification and rapid transport.

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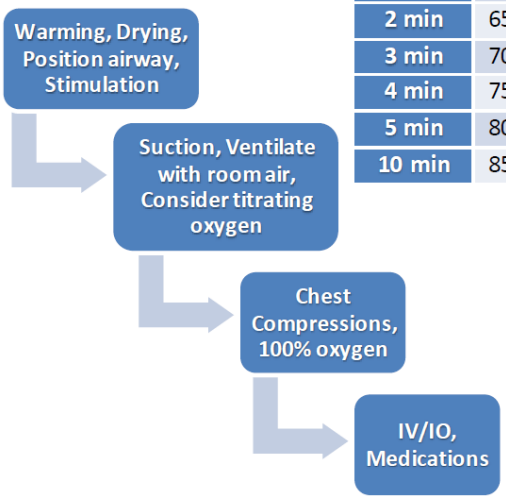
# NEWBORN CARE

| STABLE | UNSTABLE |
|---|---|
| **BLS** | |
| • Universal Protocol #601<br>• Assess vital signs then dry thoroughly and cover head and body to maintain body heat<br>• Position infant on back and suction as needed<br>• Stimulate infant by vigorously rubbing the back or flicking the soles of the feet | • Universal Protocol #601<br>• Respiratory distress – assist with BVM using room air (RA)<br>• HR < 100 BPM – assist with BVM RA 40-60/min<br>• HR < 60 BPM – BVM 100% $O_2$, provide chest compressions X 1 minute and reassess<br><br>**Newborn Viability**<br><br>• Gestation ≤20 weeks without signs of life (pulseless, not breathing) are not considered viable. Resuscitation may be withheld by first responder<br>  ○ If gestational age is uncertain – initiate resuscitation and contact nearest Base hospital<br>  ○ Provider judgement of scene may also warrant initiation of resuscitation efforts in gestation of ≤ 20 week newborn<br>  ○ If resuscitation initiated - contact nearest Base Hospital |
| **BLS Optional** | |
| Pulse Oximetry – $O_2$ administration per Airway Management Protocol #602 | |
| **ALS Standing Orders** | |
| • None indicated | • ALS resuscitation measures if indicated<br>• Monitor EKG, and pulse oximetry in right upper extremity (preductal $O_2$ Sat)<br>• Consider oxygen titrated to preductal $O_2$ Sat<br>• With APGAR < 7 at 5 min check blood sugar level (treat if <40 mg/dL) |
| **Base Hospital Orders Only** | |
| • As needed | • As needed |
| **Notes** | |

- Asphyxiation/respiratory distress is most common cause of neonatal arrest
- Prompt warming, airway management and ventilations are the key to a successful resuscitation
- A 3:1 compression-to-ventilation ratio is used for neonatal resuscitation where compromise of gas exchange is nearly always the primary cause of cardiovascular collapse
- High-concentrations of oxygen may result in adverse outcomes, particularly in preterm infants
- Meconium-stained infants – Routine intubation for tracheal suction is not approved. Suction oropharynx with bulb syringe and provide BLS airway management
- Use proper sized equipment based on Broselow tape or equivalent
- Determine **APGAR at 1 minute**, **5 minutes**, and after any intervention

| APGAR | 0 Points | 1 Point | 2 Point |
|---|---|---|---|
| Activity (muscle tone) | Absent | Arms and legs flexed | Active movement |
| Pulse | Absent | Below 100 | Over 100 |
| Grimace (reflex excitability) | Does not react | Makes a grimace | Screams, coughs, or sneezes |
| Appearance (skin color) | Pale, blue | Pink trunk with blue extremities | Pink skin |
| Respiratory Effort | Absent | Irregular, slow, or weak cry | Vigorous cry |
| 0-3 Severely depressed<br>4-6 Moderately depressed<br>7-10 Excellent condition | | | |




| Normal Preductal O2 Sat After Birth | |
|---|---|
| 1 min | 60%-65% |
| 2 min | 65%-70% |
| 3 min | 70%-75% |
| 4 min | 75%-80% |
| 5 min | 80%-85% |
| 10 min | 85%-95% |

- Refer to policy #125 for withholding resuscitation on pre-term fetal delivery ≤ 20 weeks gestation.
- If delivery of neonate with gestational age ≤20 weeks without resuscitation efforts, transport of pregnant patient is still encouraged. Use OB-kit swaddle/blanket for transport of neonate.
- If resuscitation of gestational age ≤ 20 weeks is initiated, continue with newborn resuscitation per protocol #641 with early base hospital notification and rapid transport.