SAN JOAQUIN COUNTY
EMERGENCY MEDICAL SERVICES AGENCY

Administration of Naloxone for Opiate Overdose

Disclaimer:
Authorization - EMT Optional Skills
Only authorized Emergency Medical Technicians (EMT) who are on duty with a provider that has been authorized by the San Joaquin County EMS Agency may utilize EMT Optional Skills.

Objective
The participant should be able to identify the need for use of naloxone by intranasal administration for suspected opiate overdose. They should be able to:

1. List the common cause of suspected opiate overdose;
2. Cite the signs and symptoms;
3. Describe the need for personal protective equipment and scene safety;
4. Demonstrate the ability to implement the following policies:
   a. SJCEMSA Policy No. 5503, BLS Routine Medical Care
   b. SJCEMSA Policy No. 5504, BLS Patient Assessment – Primary Survey
   c. SJCEMSA Policy No. 5505, BLS Patient Assessment – Secondary Survey
   d. SJCEMSA Policy No. 5520, BLS Respiratory Distress
   e. SJCEMSA Policy No. 5542, BLS Poisoning and Overdose
5. Define the indications, contraindications, side/adverse effects, dosages, mechanisms of drug action;
6. Administer naloxone by intranasal spray and dispose of contaminated items and sharps;
7. List the steps for providing on-going care of the patient until ALS transport arrives;
8. Demonstrate the ability to perform patient transfer of care to the arriving transport paramedic;
9. Demonstrate the ability to clearly document use on the patient care report (PCR).
Opiate

Opiates are a group of drugs that are used for treating pain. They are derived from opium which comes from the poppy plant. Opiates go by a variety of names including opiates, opioids, and narcotics. The term opiates is sometimes used for close relatives of opium such as codeine, morphine and heroin, while the term opioids is used for the entire class of drugs including synthetic opiates such as Vicodin, but the most commonly used term is opiates.

Naloxone

Naloxone, an opioid antagonist, prevents or reverses the effects of opioids including respiratory depression, sedation and hypotension. The effects of naloxone last about 30-60 minutes. Multiple doses may be required as the duration of action of most opioids is greater than that of naloxone.

Naloxone is not effective against respiratory depression due to non-opioid drugs.

Common causes of opiate overdose

Taking too many opioids can occur if:

Accidental overdose
Mix opioids together
Combining opioids with alcohol or sedative medication
Abuse the drugs (take them without a prescription or for long periods of time)

Due to their effect on the part of the brain which regulates breathing, opioids in high doses can cause respiratory depression and death.

Respiratory Rates

The normal respiratory rate of adults is 12-20 per minute.
Hypoventilation is a respiratory rate of less than 10 times per minute.
Hyperventilation is a respiratory rate of greater than 30 times per minute.

When assessing a patient’s ventilatory status, always evaluate the rate, rhythm (abnormal pattern, shallow), effort (labored), lung sounds (wheezing, stridor), cough, fever, spitting/coughing blood or pink froth, or barking.
Common opioid medications and drugs

Vicodin
OxyContin (Oxycodone)
Codeine
Methadone
Morphine
Heroin

Certain risk factors can lead to opioid overdose. For example, elderly patients may forget that they have already taken their medication and accidentally take another dose. Changes in a person’s metabolism can affect the way that a medication is absorbed. Those with a metabolic disorder must be closely monitored while taking prescription pain medication.

Prescription drug abuse is becoming more common among American youth. According to the National Institute on Drug Abuse, up to 10% of high school students abuse opioids every year.

Identify the signs and symptoms of an opiate overdose

The severity of symptoms varies based on the amount of the opioid taken. Symptoms of opioid overdose include:

- Altered level of consciousness
- Respiratory depression
- Apnea (absent breathing)
- Pinpoint (constricted) pupils
- Changes in heart rate

Naloxone is administered for respiratory depression or apnea. If the patient is under the influence of opioids, but breathing adequately, naloxone is not indicated. The patient must be monitored closely for respiratory depression or apnea.

Describe the need for personal protective equipment and scene safety

Wear personal protective equipment (PPE) and ensure scene safety for both the medical responders and the patient.

Whenever on an EMS call, always have a heightened sense of situational awareness to ensure responder and patient safety.

When a narcotic overdose occurs, it can be from IV drug use or from medication taken in pill format. Be aware of the potential risks and challenges associated with each environment.

Profile of Narcan
Medication Name

Generic: Naloxone  
Trade: Narcan  
Delivery system: Mucosal Atomization Device (MAD)

Indications for naloxone administration

History of opioid use or a high index of suspicion of opioid use  
Respiratory depression  
Altered level of consciousness

Differential diagnosis

Definition: The process of differentiating between two or more conditions that share similar signs or symptoms.

- Hypoglycemia (low blood sugar)  
- Sepsis  
- Bradycardia (slow heart rate)  
- Cardiac arrest

Contraindications

None in a life-threatening situation

Relative contraindications

Hypersensitivity

Side / adverse effects

Naloxone may precipitate withdrawal in patients receiving opioids. The severity and duration of the withdrawal syndrome are related to the dose of naloxone and to the degree and type of opioid dependence. Withdrawal is characterized by:

Agitation  
Dyspnea  
Nausea  
Pulmonary edema  
Vomiting  
Abdominal cramps  
Sweating  
Diarrhea  
Tachycardia  
Cardiac arrest  
Increased blood pressure  
Tremulousness  
Ventricular fibrillation
Routes of administration

Intranasal spray via the Mucosal Atomization Device (MAD).

The nasal cavity possesses a dense vascular network providing a direct route into the blood stream for medication that easily cross mucous membranes. This direct route avoids gastrointestinal destruction and hepatic first pass metabolism of these medications, effectively increasing their bioavailability, which is the fraction of administered drug that reaches the target tissue.

The rates of absorption and time to peak plasma concentrations are comparable to IV administration, and are generally superior to subcutaneous or intramuscular routes.

Dosages

Adult: 2mg – 1mg each nostril intranasal (IN) – May repeat once for total max dose 4mg

Pediatric: 0.1mg/kg intranasal (IN) (half dose in each nostril) – Max total dose is 2mg

A pediatric patient is 14 years or younger

Pediatric patients shall be administered only one (1) dose of Naloxone.

Calculating medication dosages for pediatric patients - Naloxone 0.1mg/kg

<table>
<thead>
<tr>
<th>Pediatric Weight / Dose Chart</th>
<th>Pediatric patient is 14 years or younger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight in kilograms / pounds</td>
<td>Dose</td>
</tr>
<tr>
<td>5 kg / 11 pounds</td>
<td>0.5mg</td>
</tr>
<tr>
<td>10 kg / 22 pounds</td>
<td>1.0mg</td>
</tr>
<tr>
<td>15 kg / 33 pounds</td>
<td>1.5mg</td>
</tr>
<tr>
<td>20 kg / 44 pounds</td>
<td>2.0mg - Do Not Exceed 2.0mg – Max Dose</td>
</tr>
</tbody>
</table>
Mechanisms of medication action

Opioid antagonist; prevents or reverses effects of opioids, including respiratory depression, sedation, and hypotension, by competing for the mu, kappa, and sigma opiate receptor sites in the CNS, with the greatest affinity for the mu receptor.

- The effects of naloxone last about 30-45 minutes. Multiple doses may be required as the duration of action of most opioids is greater than that of naloxone.

Aseptic technique

Definition: A procedure used by medical staff to prevent the spread of infection. The goal is to reach asepsis, which means an environment that is free of harmful microorganisms.

Use proper PPE and sterile techniques when administering medication to a patient, in order to ensure asepsis.

Prior to medication administration

ALWAYS ask the patient if they have any allergies to medications.

If possible, remove the source of the opiate. Examples would be removing transdermal opioid patches (morphine, fentanyl) from the patient’s skin, or removing a suspected heroin needle from a patient’s arm.

Removing the source of the opiate does not include inducing the patient to vomit.

Syrup of Ipecac

Commonly referred to as ipecac, is a medication that was once used to induce vomiting. It is obtained from the dried rhizome and roots of Carapichea Ipecacuanha from which it derives its name. Current literature concludes that vomiting alone does not reliably remove poisons from the stomach.
List the steps for administering naloxone by the mucosal atomization device (MAD)

1. Take universal body/substance isolation precautions.
2. Perform scene size-up.
3. Perform primary survey.
4. Provide supplemental oxygen or respiratory support as needed.
5. Remove any transdermal opioid patches or hypodermic needles.
6. State the indications for the administration of naloxone.
7. Ask the patient if they are allergic to any medications.
8. Check for correct medication, concentration, integrity of container, dosage and expiration date.
9. Remove the syringe from the vial adapter.
10. Attach the MAD Nasal Device to the syringe via the luer lock connector.
11. Use the free hand to hold the occiput of the head stable, places the tip of the MAD snugly against the nostril aiming slightly up and outward (toward the top to the ear).
12. Rapidly depress the syringe plunger to administer 1mg of medication into the first nostril.
13. Reposition and repeat steps 11 & 12, administering the remaining 1mg of medication into the second nostril.
14. Dispose of the syringe and MAD in sharps container.
15. Continue monitoring of patient and observing for improvement or worsening of the patient’s respiratory distress.
16. Complete the secondary survey.
17. State indications for repeating naloxone administration.

Disposal of contaminated items and sharps

Sharps disposal containers should be of sufficient thickness or construction design to be durable, leak resistant, and puncture resistant under normal use and stresses imposed during storage, handling, installation, use, closure, and transport by the user before final disposal.
List the steps for providing on-going care of the patient until an ALS provider arrives

1. Continue to support respirations as necessary which may include positive pressure ventilation via bag-valve mask (BVM) and supplemental oxygen;
2. Monitor for signs and symptoms of opioid withdrawal (agitation, vomiting, tachycardia);
3. Complete BLS Secondary Survey (allergies, medications, past medical history, etc.).
4. Ensure ALS transport is en route.
5. Prepare to initiate basic life support procedures (CPR, AED)

If the patient’s condition does not improve within 2-3 minutes after administering the initial dose of naloxone, or if the patient’s condition worsens (increasing respiratory depression, decreasing mental status), may repeat a second dose (for adults only). The total maximum dose not to exceed 4mg of naloxone for adults and 2mg of naloxone for pediatrics.

Pediatric patients shall be administered only one (1) dose of Naloxone

For adult patients that suffer from respiratory-induced cardiac arrest, initiate CPR at 30:2.

Minimally Interrupted Cardiac Resuscitation (MICR) is contraindicated for respiratory or trauma-induced cardiac arrest.

Respiratory-induced cardiac arrests include:
- Drowning
- Hanging / asphyxiation
- Severe asthma
- Apnea (absent breathing) secondary to overdose

Clearly document use on patient care report

The patient care report (PCR) is a legal document that speaks for the patient when they are unable to do so. The PCR documentation must be clear, concise and accurate to ensure proper continuum of care once the patient arrives at the hospital.

Transfer of Care

Upon arrival of the ALS transport unit, provide the transport paramedic with a complete report and history of care. This report should include, (1) findings from the initial assessment (2) history of the treatment provided to the patient by EMS, and (3) the current status of the patient.