

SAMHSA Opioid Overdose TOOLKIT:

Five Essential Steps for First Responders



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Also see the other components of this Toolkit:

- ★ Facts for Community Members
- ★ Information for Prescribers
- ★ Safety Advice for Patients & Family Members
- ★ Recovering from Opioid Overdose:
Resources for Overdose Survivors & Family Members

FIVE ESSENTIAL STEPS FOR FIRST RESPONDERS

Overdose is common among persons who use illicit opioids such as heroin and among those who misuse medications prescribed for pain, such as oxycodone, hydrocodone, and morphine. The incidence of opioid overdose is rising nationwide. For example, between 2001 and 2010, the number of poisoning deaths in the United States nearly doubled, largely because of overdoses involving prescription opioid analgesics [1]. This increase coincided with a nearly fourfold increase in the use of prescribed opioids for the treatment of pain [2].

To address the problem, emergency medical personnel, health care professionals, and patients increasingly are being trained in the use of the opioid antagonist naloxone hydrochloride (naloxone), which is the treatment of choice to reverse the potentially fatal respiratory depression caused by opioid overdose. (Note that naloxone has no effect on non-opioid overdoses, such as those involving cocaine, benzodiazepines, or alcohol [3].)

Based on current scientific evidence and extensive experience, the steps outlined below are recommended to reduce the number of deaths resulting from opioid overdoses [4-9].

STEP 1: CALL FOR HELP (DIAL 911)

AN OPIOID OVERDOSE NEEDS IMMEDIATE MEDICAL ATTENTION. An essential step is to get someone with medical expertise to see the patient as soon as possible, so if no EMS or other trained personnel are on the scene, dial 911 immediately. All you have to say is: "Someone is not breathing." Be sure to give a clear address and/or description of your location.

STEP 2: CHECK FOR SIGNS OF OPIOID OVERDOSE

Signs of **OVERDOSE**, which often results in death if not treated, include [3]:

- Extreme sleepiness inability to awaken verbally or upon sternal rub
- Breathing problems can range from slow to shallow breathing in a patient that cannot be awakened
- Fingernails or lips turning blue/purple
- Extremely small "pinpoint" pupils
- Slow heartbeat and/or low blood pressure

Signs of **OVERMEDICATION**, which may progress to overdose, include [3]:

- Unusual sleepiness, drowsiness, or difficulty staying awake despite loud verbal stimulus or vigorous sternal rub
- Mental confusion, slurred speech, intoxicated behavior
- Slow or shallow breathing
- Extremely small "pinpoint" pupils; although normal size pupils do not exclude opioid overdose
- Slow heartbeat, low blood pressure
- Difficulty waking the person from sleep.

Because opioids depress respiratory function and breathing, one telltale sign of a person in a critical medical state is the "death rattle." If a person emits a "death rattle" — an exhaled breath with a very distinct, labored sound coming from the throat — emergency resuscitation will be necessary immediately, as it almost always is a sign that the individual is near death [8].

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STEP 3: SUPPORT THE PERSON'S BREATHING

Ideally, individuals who are experiencing opioid overdose should be ventilated with 100% oxygen before naloxone is administered so as to reduce the risk of acute lung injury [5,7]. In situations where 100% oxygen is not available, rescue breathing can be very effective in supporting respiration [5]. Rescue breathing for adults involves the following steps:

- Be sure the person's airway is clear (check that nothing inside the person's mouth or throat is blocking the airway).
- Place one hand on the person's chin, tilt the head back and pinch the nose closed.
- Place your mouth over the person's mouth to make a seal and give 2 slow breaths.
- The person's chest should rise (but not the stomach).
- Follow up with one breath every 5 seconds.

STEP 4: ADMINISTER NALOXONE

Naloxone should be administered to any person who shows signs of opioid overdose, or when overdose is suspected [4]. Naloxone injection is approved by the FDA and has been used for decades by emergency medical services (EMS) personnel to reverse opioid overdose and resuscitate individuals who have overdosed on opioids.

Naloxone can be given by intramuscular, subcutaneous, or intravenous injection every 2 to 3 minutes [7-9]. The most rapid onset of action is achieved by intravenous administration, which is recommended in emergency situations [8]. The dose should be titrated to the smallest effective dose that maintains spontaneous normal respiratory drive.

Opioid-naïve patients may be given starting doses of up to 2 mg without concern for triggering withdrawal symptoms [5-7, 9].

The intramuscular route of administration may be more suitable for patients with a history of opioid dependence because it provides a slower onset of action and a prolonged duration of effect, which may minimize rapid onset of withdrawal symptoms [5-7].

DURATION OF EFFECT. The duration of effect of naloxone is 30 to 90 minutes depending on dose and route of administration, and patients should be observed after this time frame for the return of overdose symptoms [7-9]. The goal of naloxone therapy should be to restore adequate spontaneous breathing, but not necessarily complete arousal [7].

More than one dose of naloxone may be needed to revive someone who is overdosing. Patients who have taken longer-acting opioids may require further intravenous bolus doses or an infusion of naloxone [7].

Comfort the person being treated, as withdrawal triggered by naloxone can feel unpleasant. As a result, some persons become agitated or combative when this happens and need help to remain calm.

SAFETY OF NALOXONE. The safety profile of naloxone is remarkably high, especially when used in low doses and titrated to effect [5-8]. When given to individuals who are not opioid-intoxicated or opioid-dependent, naloxone produces no clinical effects, even at high doses. Moreover, while rapid opioid withdrawal in tolerant patients may be unpleasant, it is not life-threatening.

Naloxone can safely be used to manage opioid overdose in pregnant women. The lowest dose to maintain spontaneous respiratory drive should be used to avoid triggering acute opioid withdrawal, which may cause fetal distress [4].

On April 3, 2014 the FDA approved a new naloxone delivery device called Evzio®¹ (naloxone hydrochloride injection.) The device rapidly delivers a single dose of the drug naloxone via a hand-held auto-injector that can be carried in a pocket or stored in a medicine cabinet. The currently available naloxone kits that include a syringe and naloxone ampules or vials require the user to be trained on how to fill the syringe with naloxone and administer it to the victim. No special training is required to use Evzio®.

Evzio® is injected into the muscle (intramuscular) or under the skin (subcutaneous). Once turned on, the device provides verbal instruction to the user describing how to deliver the medication, similar to automated defibrillators.

¹ Source:

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm391465.htm>

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STEP 5: MONITOR THE PERSON'S RESPONSE

All patients should be monitored for recurrence of signs and symptoms of opioid toxicity for at least 4 hours from the last dose of naloxone or discontinuation of the naloxone infusion. Patients who have overdosed on long-acting opioids should have more prolonged monitoring [5-7].

Most patients respond by returning to spontaneous breathing, with minimal withdrawal symptoms [7]. The response generally occurs within 3 to 5 minutes of naloxone administration. (Rescue breathing should continue while waiting for the naloxone to take effect. [5-7])

Naloxone will continue to work for 30 to 90 minutes, but after that time, overdose symptoms may return [8,9]. Therefore, it is essential to get the person to an emergency department or other source of medical care as quickly as possible, even if he or she revives after the initial dose of naloxone and seems to feel better.

SIGNS OF OPIOID WITHDRAWAL. The signs and symptoms of opioid withdrawal in an individual who is physically dependent on opioids may include, but are not limited to, the following: body aches, diarrhea, tachycardia, fever, runny nose, sneezing, piloerection, sweating, yawning, nausea or vomiting, nervousness, restlessness or irritability, shivering or trembling, abdominal cramps, weakness, and increased blood pressure. In the neo-nate, opioid withdrawal may also include convulsions, excessive crying, and hyperactive reflexes [8].

NALOXONE NON-RESPONDERS. If a patient does not respond to naloxone, an alternative explanation for the clinical symptoms should be considered. The most likely explanation is that the person is not overdosing on an opioid but rather some other substance or may even be experiencing a non-overdose medical emergency. A possible explanation to consider is that the individual has overdosed on buprenorphine, a long-acting opioid partial agonist. Because buprenorphine has a higher affinity for the opioid receptors than do other opioids, naloxone may not be effective at reversing the effects of buprenorphine induced opioid overdose [9]

In all cases, support of ventilation, oxygenation, and blood pressure should be sufficient to prevent the complications of opioid overdose and should be given priority if the response to naloxone is not prompt.

SUMMARY:

Do's and Don'ts in Responding to Opioid Overdose

- **DO** support the person's breathing by administering oxygen or performing rescue breathing.
- **DO** administer naloxone.
- **DO** put the person in the "recovery position" on the side, if he or she is breathing independently.
- **DO** stay with the person and keep him/her warm.
- **DON'T** slap or try to forcefully stimulate the person — it will only cause further injury. If you are unable to wake the person by shouting, rubbing your knuckles on the sternum (center of the chest or rib cage), or light pinching, he or she may be unconscious.
- **DON'T** put the person into a cold bath or shower. This increases the risk of falling, drowning or going into shock.
- **DON'T** inject the person with any substance (salt water, milk, "speed," heroin, etc.). The only safe and appropriate treatment is naloxone.
- **DON'T** try to make the person vomit drugs that he or she may have swallowed. Choking or inhaling vomit into the lungs can cause a fatal injury.

NOTE: All naloxone products have an expiration date, so it is important to check the expiration date and obtain replacement naloxone as needed.

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