**Emergencies**

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# MEDICAL EMERGENCIES

LHDs should be prepared for medical emergencies, particularly, life-threatening drug reactions. Established procedures, adequate and properly maintained equipment, and appropriately trained staff are essential.

* Protocols for emergency care for anaphylactic reactions, and management of vasovagal reactions and syncope should be signed by a local physician and a copy kept with the emergency supplies.
* If the LHD stocks an Automated External Defibrillator (AED) device, it must develop and maintain local policies on its use and maintenance.
* LHD prepared for more extensive emergency measures should have a locally developed protocol in place to guide staff.
* Emergency equipment, supplies, and medications should be maintained on a crash cart or emergency tray.
* An inventory list is to be kept with the crash cart or emergency tray and monitored monthly according to an established schedule to ensure that they are not depleted or expired. Emergency supplies should be sealed when not in use.
* All physicians, clinicians, and nurses should be certified in CPR.
* All staff should be offered the opportunity to participate in CPR training.
* At a minimum, all staff must know their role in an emergency situation.
* All staff should have access to the Poison Control phone number, 1-800-222-1222, and it should be posted in a prominent place.

# EMERGENCY EQUIPMENT, SUPPLIES, AND MEDICATIONS

Inventory List\*

(When Equipment and Supplies are replaced, LHDs should order Latex-free.)

* AMBU bag – at least 1 Adult and 1 Pediatric unit (Latex-free), checked for physical integrity at least monthly and replaced per manufacturer’s recommendations.
* One-way masks – at least 1 adult and 1 pediatric mask. latex-free, and at least one replacement piece for each mask
* Sphygmomanometer, age appropriate, ex. pediatric, adult, extra-large – serviced according to manufacturer’s recommendations
* Stethoscope
* Flashlight and extra batteries
* Oxygen tank with mask (serviced yearly and checked monthly)
* Syringes and needles of various sizes, including filtered needles for use with ampoules (for the removals of minute particles of glass, filtered needles are not to be used for administration.)
* Alcohol swabs or sponges
* Gloves, latex-free
* Aqueous epinephrine (1:1000); in either prefilled syringes, EpiPen® Auto-Injectors (0.3 mg) and EpiPen® Jr (0.15 mg) Auto-Injectors, or ampoules; at least 4 but more for medically isolated clinics). DO NOT BUY 30 mL vials of aqueous epinephrine.
* Diphenhydramine hydrochloride (HCL) (Benadryl® elixir) Liquid (Each 5 mL contains 12.5 mg of Diphenhydramine HCL); Diphenhydramine hydrochloride (Benadryl® Injection) 50 mg/mL in ampoules, disposable syringes, or vials, (a minimum of 4)
* Poison Control phone number 1-800-222-1222  
  Find Your Local Poison Center:  
  <http://www.aapcc.org/dnn/AAPCC/FindLocalPoisonCenters.aspx>
* Kentucky Regional Poison Center  
  Medical Towers South, Suite 847  
  234 East Gray Street  
  Louisville, KY 40202  
  Emergency Phone: (800) 222-1222  
  <http://www.krpc.com/>
* Emergency equipment, supplies and medications inventory list with log of monthly reviews/inventory
* Emergency protocols signed by a local physician

\*A copy of the Emergency Equipment, Supplies, and Medications list is to be placed on the crash cart, emergency tray, or off-site emergency kits with a copy of the current signed protocols.

LHDs may develop modified equipment lists and modified emergency and anaphylactic shock protocols for off-site service or alternate service delivery sites. These should, at a minimum, include epinephrine and diphenhydramine hydrochloride, as well as access to a phone to summon emergency personnel (911).

# MEDICAL EMERGENCIES PROTOCOL\*

For various reasons in a LHD setting, a patient may complain of feeling “light headed”, “faint”, or actually “passing out”. This may be as simple as a reaction to certain sensory stimuli, real or perceived pain, or sudden changes in position or as severe as an acute medical condition, such as cardiac or other life threatening conditions.

|  |  |
| --- | --- |
| Condition | Intervention |
| Syncope/Vasovagal Reaction  “light headed – fainting”  Response to patient is usually immediate when measures are taken. | * ABC’s (Airway, Breathing, Circulation) * Place patient in supine position and loosen clothing. * Elevate lower extremities 20–30 degrees. * Monitor and record BP, pulse and respirations. * Document all findings and actions in patient’s medical record. * Question patient after episode about feelings prior to syncope and whether this is an isolated event or “usual response” to certain stimuli. * Advise patient to report this to their physician or primary care provider for further investigation. |
| Suspected Severe, Acute Medical Condition  including cardiac arrest, shock, hemorrhage, and/or aspiratory difficulties | * ABC’s * Call for staff assistance * Maintain **AIRWAY**, provide **CPR** if necessary   + Place patient in supine position and loosen clothing.   + Monitor and record vital signs. * Call 911 or local Emergency Medical Services immediately (preferably have someone not involved in direct patient care make the call). |

\*Place a copy of this protocol on the crash cart, emergency tray with the Emergency Equipment, Supplies and Medications Inventory List and the Treatment of Anaphylactic Shock Protocol. Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

| Condition | Observation/Assessment | Intervention (Mild and Moderate Reactions) |
| --- | --- | --- |
| MILD REACTION (May rapidly progress to a more severe reaction) | * Generalized flush * Red, itchy, eyes * Itching at the injection site or at other body sites * Localized to generalized urticaria (hives) * Vomiting, abdominal pain | * + - ABC’s. * Call 911 or local EMS STAT (Preferably have someone not involved in direct patient care make the call). * Place patient in supine position. * Monitor vital signs. * GIVE OXYGEN BY MASK, if any respiratory symptoms are present   + Special **instructions\*\* for O2 administration, if given  (O2 flow rate, lpm) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** * **FIRST-LINE TREATMENT**: GIVE AGE AND WEIGHT APPROPRIATE DOSES OF EPINEPHRINE, intramuscularly, preferably in the anterolateral thigh (See Table 1). Repeat every 5–15 minutes, up to 3 doses, depending on patient’s response * **SECONDARY TREATMENT**: As an adjunct to epinephrine, give weight or age appropriate doses of diphenhydramine HCL orally or intramuscularly (See Table 2 or Table 3). DO NOT GIVE diphenhydramine HCL to infants aged less than 7 months * Continue to observe for change in symptoms (lessening or worsening) * Maintain accurate emergency flow sheet showing:   + Date   + Time of occurrence   + Vital Signs   + Medication(s) (time, dosage, response,, name of healthcare personnel who administered the medication)   + Immediate therapy   + Disposition of patient (transfer for further emergency care ASAP) * Send summary of emergency treatment with patient with written assessment of patient’s condition at time of transfer. * Document all measures taken in patient’s medical record and place allergy label on front of patient’s medical record. Advise patient (parent) about the drug or trigger that caused reaction. * Advise patient (parent) to report reaction to their physician or primary care provider. |
| MODERATE REACTION | * + - Mild to moderate wheezing * Coughing   + - Complains of generalized itching, itching throat     - Generalized urticaria (hives)     - Swelling of lips, face, tongue, eyelids, hands, feet, or genitalia.     - Vomiting, diarrhea, and/or abdominal pain |

\* Place a copy of this protocol on the crash cart, emergency tray with the Emergency Equipment, Supplies and Medications Inventory List and Medical Emergencies Protocol. Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

\*\*Oxygen flow rates, particularly for infants and children, depend upon the equipment available.   LHDs should consult the equipment manufacturer for relevant information and annotate protocols with the appropriate oxygen flow rates. <http://www.redcross.org/images/MEDIA_CustomProductCatalog/m3240082_AdministeringEmergencyOxygenFactandSkill.pdf>

### PROTOCOL FOR TREATMENT OF ANAPHYLAXIS\*

(Continued)

|  |  |  |
| --- | --- | --- |
| Condition | **Observation/**  **Assessment** | **Intervention (Severe Reaction)** |
| SEVERE REACTION | * Anxiety * Shortness of Breath * Severe Wheezing   + - Progressive swelling of lips, face, tongue, eyelids, hands, feet, or genitalia.     - Progressive generalized urticaria (hives) * Restlessness * Headache * Vomiting * Incontinence * Cyanosis * Confusion * Weak rapid pulse * Hypotension * Shock * Unconsciousness | * ABC’s * Call 911 or local EMS STAT (Preferably have someone not involved in direct patient care make the call). * Place patient in supine position. * Elevate legs and loosen clothing. * Elevate head, if breathing is difficult. * Monitor pulse and respiration, mental status q 1–2 minutes. * Monitor BP – age 3 years and up * **GIVE OXYGEN BY MASK** (Maintain airway – hypoxia can result from hypotension and upper airway edema). * **Special Instructions\*\* for O2 administration, if given  (O2 flow rate, lpm) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** * **FIRST-LINE TREATMENT:**  GIVE AGE AND WEIGHT APPROPRIATE DOSES OF EPINEPHRINE, intramuscularly, preferably in the anterolateral thigh (See Table 1). Repeat every  5–15 minutes, up to 3 doses, depending on patient’s response * **SECONDARY TREATMENT**: As an adjunct to epinephrine, give weight or age appropriate doses of diphenhydramine HCL intramuscularly (See Table 3). DO NOT GIVE diphenhydramine HCL to infants aged less than 7 months * Perform cardiopulmonary resuscitation, if necessary * Maintain accurate emergency flow sheet showing:   + Date   + Time of occurrence   + Vital Signs   + Medication(s) (time, dosage, response,, name of healthcare personnel who administered the medication)   + Immediate therapy   + Disposition of patient (transfer for further emergency care ASAP) * Send summary of emergency treatment with patient with written assessment of patient’s condition at time of transfer. * Document all measures taken in patient’s medical record and place allergy label on front of patient’s medical record. |

\* Place a copy of this protocol on the crash cart, emergency tray with the Emergency Equipment, Supplies and Medications Inventory List and Medical Emergencies Protocol. Modified emergency and anaphylactic shock protocols may be developed locally for off-site service.

\*\* Oxygen flow rates, particularly for infants and children, depend upon the equipment available. LHDs should

consult the equipment manufacturer for relevant information and annotate protocols with the appropriate oxygen

flow rates. [http://www.redcross.org/images/MEDIA\_CustomProductCatalog/m3240082\_AdministeringEmergencyOxygenFactandSkill.pdf](http://www.redcross.org/images/MEDIA_CustomProductCatalog/m3240082_AdministeringEmergencyOxygenFactandSkill.pdf%20%20)

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| --- | --- | --- | --- | --- | --- |
| **Table 1: Dosages for Epinephrine Administered Intramuscularly**  **The recommended dose of epinephrine is 0.01 mg/kg body weight. Repeat every 5–15 min. up to 3 doses, depending on patient’s response.** | | | | | |
|  | **Age Group:** | **Range of Weight (Pounds)\*** | **Range of Weight (Kilograms)\*** | **Epinephrine Dose:** | |
| **1 mg/mL injectable  (1:1000 dilution) intramuscular (IM) Minimum dose: 0.05 mL** | **Epinephrine  Auto-Injector  (EpiPen)** |
| **Infants and Children** | **1 - 6 months** | **9 - 19 lbs** | **4 - 8.5 kg** | **0.05 mL (or mg)** | **Off label** |
| **7 - 36 months** | **20 - 32 lbs** | **9 - 14.5 kg** | **0.1 mL (or mg)** | **Off label** |
| **37 - 59 months** | **33 - 39 lbs** | **15 - 17.5 kg** | **0.15 mL (or mg)** | **0.15 mg** |
| **5 - 7 years** | **40 - 56 lbs** | **18 - 25.5 kg** | **0.2 - 0.25 mL (or mg)** | **0.15 mg** |
| **8 - 10 years** | **57 - 76 lbs** | **26 - 34.5 kg** | **0.25 - 0.3 mL**† **(or mg)** | **0.15 mg or 0.3 mg** |
| **Teens** | **11 - 12 years** | **77 - 99 lbs** | **35 - 45 kg** | **0.35 - 0.4 mL (or mg)** | **0.3 mg** |
| **13 - 18 years** | **100+ lbs** | **46+ kg** | **0.5 mL (or mg)**‡ | **0.3 mg** |
| **Adults** | **19 years & older** | **100+ lbs** | **46+ kg** | **0.5 mL (or mg)**‡ | **0.3 mg** |

**Note**: If body weight is known, then dosing by weight is preferred. If weight is not known or readily available, dosing by age is appropriate.

\*Rounded weight for infants, children, and teens at the 50th percentile for each age range

† Maximum dose for children

‡ Maximum dose for teens and adults

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 2: Dosages for Diphenhydramine HCL (Benadryl**®**)  Administered Orally**  **The recommended dose of diphenhydramine HCL is 1 – 2 mg/kg body weight.** | | | | | |
|  | **Age Group:** | **Range of Weight (Pounds)\*** | **Range of Weight (Kilograms)\*** | **Benadryl Dose, given orally:** | |
| **12.5 mg/5 mL liquid,** | **12.5 mg/5 mL liquid Dose, orally, mL** |
| **Infants and Children** | **1 - 6 months** | **DO NOT GIVE TO THIS AGE GROUP** | | | |
| **7 - 36 months** | **20 - 32 lbs** | **9 - 14.5 kg** | **10 mg – 20 mg** | **4 mL – 8 mL** |
| **37 - 59 months** | **33 - 39 lbs** | **15 - 17.5 kg** | **15 mg – 30 mg** | **6 mL – 12 mL** |
| **5 - 7 years** | **40 - 56 lbs** | **18 - 25.5 kg** | **20 mg – 30 mg** | **8 mL – 12 mL** |
| **8 - 12 years** | **57 - 99 lbs** | **26 - 45 kg** | **30 mg**† | **12 mL**† |
| **Teens** | **13 - 18 years** | **100+ lbs** | **46+ kg** | **50 mg**‡ | **20 mL**‡ |
| **Adults** | **19 years & older** | **100+ lbs** | **46+ kg** | **50 mg**‡ | **20 mL**‡ |

**Note**: If body weight is known, then dosing by weight is preferred. If weight is not known or readily available, dosing by age is appropriate.

\*Rounded weight for infants, children, and teens at the 50th percentile for each age range

† Maximum dose for children

‡ Maximum dose for teens and adults

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 3: Dosages for Diphenhydramine HCL (Benadryl**®**) Administered Intramuscularly**  **The recommended dose of diphenhydramine HCL is 1 – 2 mg/kg body weight.** | | | | | |
|  | **Age Group:** | **Range of Weight (Pounds)\*** | **Range of Weight (Kilograms)\*** | **Benadryl Dose, given by injection:** | |
| **50 mg/mL injectable IM** | **50 mg/mL injectable Volume injected IM, mL** |
| **Infants and Children** | **1 - 6 months** | **DO NOT ADMINISTER TO THIS AGE GROUP** | | | |
| **7 - 36 months** | **20 - 32 lbs** | **9 - 14.5 kg** | **10 mg – 20 mg** | **0.2 mL – 0.4 mL** |
| **37 - 59 months** | **33 - 39 lbs** | **15 - 17.5 kg** | **15 mg – 30 mg** | **0.3 mL – 0.6 mL** |
| **5 - 7 years** | **40 - 56 lbs** | **18 - 25.5 kg** | **20 mg – 30 mg** | **0.4 mL – 0.6 mL** |
| **8 - 12 years** | **57 - 99 lbs** | **26 - 45 kg** | **30 mg**† | **0.6 mL**† |
| **Teens** | **13 - 18 years** | **100+ lbs** | **46+ kg** | **50 mg**‡ | **1 mL**‡ |
| **Adults** | **19 years & older** | **100+ lbs** | **46+ kg** | **50 mg**‡ | **1 mL**‡ |

**Note**: If body weight is known, then dosing by weight is preferred. If weight is not known or readily available, dosing by age is appropriate.

\*Rounded weight for infants, children, and teens at the 50th percentile for each age range

† Maximum dose for children

‡ Maximum dose for teens and adults

**Naloxone (NARCAN)**

**Auto-Injector**

Indications

Naloxone is an opioid antagonist indicated for the emergency treatment of known or suspected opioid overdose, as manifested by respiratory and/or central nervous system depression.

* Naloxone is intended for immediate administration as emergency therapy in settings where opioids may be present.
* Naloxone is not a substitute for emergency medical care. When in doubt, if an individual is unresponsive and an opioid overdose is suspected, administer naloxone as quickly as possible because prolonged respiratory depression may result in damage to the central nervous system or death.
* Call 911 to activate EMS immediately after administering the first dose of naloxone

Signs and Symptoms of Opiod Overdose

All local health department nurses should be trained on how to recognize the signs and symptoms of an opioid overdose requiring the use of a naloxone. Symptoms of an opioid overdose requiring the use of naloxone may include but are not limited to the following:

* extreme sleepiness (inability to awaken verbally or upon sternal rub)
* breathing problems which 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:

* 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

It is important to note that not all signs and symptoms may be present during an opioid overdose. If the individual is not responsive to shaking, yelling or vigorously rubbing their sternum, ACT PROMPTLY!!

* CALL FOR HELP
* CHECK FOR BREATHING
* CALL 911 IMMEDIATELY
* GET THE NALOXONE

Dosage, Route and Anatomical Site

There are multiple routes of administration for FDA approved naloxone: intramuscular, subcutaneous and intravenous. For the purposes of this protocol, the use of the FDA approved naloxone via prefilled syringe as well as the auto-injector will be reviewed.

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

Preparing naloxone in a pre-filled syringe:

* Quickly open the box and pull out the pre-filled 1 milliliter syringe
* Attach the 1-1 ½ inch needle to the syringe
* Remove the safety cap on the needle
* Quickly push the needle straight down into the outer mid-thigh muscle, through the clothes if necessary and push down on the plunger
* Put the needle/syringe in a sharps container

Use of the naloxone auto injector:

* Pull auto injector from the outer case
* Quickly visually inspect the naloxone auto injector through the viewing window for particulate matter and discoloration prior to administration. Do not administer unless the solution is clear and the glass container is undamaged
* Remove the safety cap, pull firmly
* Immediately place the auto injector against the outer mid-thigh, through the clothes if necessary, and press firmly and hold for 5 seconds. You may hear a normal clicking sound.
* To reduce the chance of an accidental injection to yourself, do not touch the base of the auto-injector which is where the needle comes out. If an accidental injection happens, get medical help right away.
* If the individual is breathing on their own, place them in the recovery position.

Naloxone will continue to work for as long as 30 to 90 minutes, but after that time, overdose symptoms may return.

ASSURE 911 HAS BEEN CALLED and that EMS has been activated. If no one has yet called 911, IMMEDIATELY CALL 911.

After giving naloxone, stay with the individual. If they are breathing on their own, to decrease the individual’s chance of choking on their vomit, place them in the recovery position, on their side and support the body with one bent knee with the face turned to the side.

STAY WITH THE PERSON AND MONITOR FOR RESPIRATORY DISTRESS. Provide rescue breathing as necessary. It is necessary to seek immediate emergency medical assistance (911) after delivering the first dose of naloxone, keep the patient under continued surveillance and repeat doses of naloxone as necessary.

REPEAT NALOXONE ADMINISTRATION IF SYMPTOMS CONTINUE. The duration of action of most opioids is likely to exceed the 30-90 minutes that naloxone will be effective, resulting in a return of respiratory and/or central nervous system depression, even after an initial improvement in symptoms. If the desired response is not obtained after 2 or 3 minutes, another dose of naloxone may be administered if available.

If after 1-2 doses of naloxone there is no breathing or breathing continues to be shallow, lay the person on their back and continue to perform rescue breathing while waiting for the naloxone to take effect, the person breathes for themselves or EMS arrives.

Contraindications

NARCAN is contraindicated in patients known to be hypersensitive to naloxone hydrochloride or to any of the other ingredients.

Warnings and Precautions

* Due to the duration of action, keep the patient under continued surveillance and repeated doses of naloxone should be administered, as necessary, while awaiting emergency medical assistance.
* Other supportive and/or resuscitative measures may be helpful while awaiting emergency medical assistance.
* Reversal of respiratory depression by partial agonists or mixed agonists/antagonists such as buprenorphine and pentazocine, may be incomplete.
* Use in patients who are opioid dependent may precipitate acute abstinence syndrome.
* Patients with pre-existing cardiac disease or patients who have received medications with potential adverse cardiovascular effects should be monitored in an appropriate healthcare setting
* In neonates, opioid withdrawal may be life-threatening if not recognized and properly treated.

Adverse Reactions

* The following adverse reactions have been identified during use of naloxone hydrochloride in the post-operative setting: Hypotension, hypertension, ventricular tachycardia and fibrillation, dyspnea, pulmonary edema, and cardiac arrest. Death, coma, and encephalopathy have been reported as sequelae of these events.
* Excessive doses of naloxone hydrochloride in post-operative patients have resulted in significant reversal of analgesia and have caused agitation.
* Abrupt reversal of opioid effects in persons who were physically dependent on opioids has precipitated signs and symptoms of opioid withdrawal including: body aches, fever, sweating, runny nose, sneezing, piloerection, yawning, weakness, shivering or trembling, nervousness, restlessness or irritability, diarrhea, nausea or vomiting, abdominal cramps, increased blood pressure, tachycardia.
* In the neonate, opioid withdrawal signs and symptoms also included: convulsions, excessive crying, hyperactive reflexes.

To report SUSPECTED ADVERSE REACTIONS, contact kaleo, Inc. at 1-855-773-8946 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Storage and Handling

* Store naloxone at controlled room temperature 15°C to 25°C (59°F to 77°F) and in a dark area.
* The naloxone should be checked monthly to ensure proper storage, expiration date, and medication stability. Expired naloxone or those with discolored solution or solid particles should not be used. Discard them in a sharps container.
* Local health department clinical staff should be familiar with the type of naloxone maintained by their agency and its use.
* Local health department clinical staff should refer to the package insert and store naloxone hydrochloride according to the individual manufacturer’s direction.

Other Important Notes

Naloxone is supplied in a carton containing two pre-filled naloxone hydrochloride injections, USP 0.4 mg auto-injectors and a single black and white trainer that can be used for practice.

**NALOXONE**

**INTRANASAL**

Indications and Usage

* Nasal Spray is an opioid antagonist indicated for the emergency treatment of known or suspected opioid overdose, as manifested by respiratory and/or central nervous system depression.
* NARCAN Nasal Spray is intended for immediate administration as emergency therapy in settings where opioids may be present.
* NARCAN Nasal Spray is not a substitute for emergency medical care.

Dosage and Administration

* NARCAN Nasal Spray is for intranasal use only.
* Seek emergency medical care immediately after use.
* Administer a single spray of NARCAN Nasal Spray to adults or pediatric patients intranasally into one nostril.
* Administer additional doses of NARCAN Nasal Spray, using a new nasal spray with each dose, if the patient does not respond or responds and then relapses into respiratory depression, additional doses of NARCAN Nasal Spray may be given every 2 to 3 minutes until emergency medical assistance arrives.
* Additional supportive and/or resuscitative measures may be helpful while awaiting emergency medical assistance.
* To access the Narcan Nasal Spray Quick Start Guide, please see the Narcan Nasal Spray instructions at: <https://www.narcan.com/pdf/NARCAN-Quick-Start-Guide.pdf>

Dosage Forms and Strength

Nasal spray: 4 mg of naloxone hydrochloride in 0.1 mL

Signs and Symptoms of Opiod Overdose

All local health department nurses should be trained on how to recognize the signs and symptoms of an opioid overdose requiring the use of a naloxone. Symptoms of an opioid overdose requiring the use of naloxone may include but are not limited to the following:

•extreme sleepiness (inability to awaken verbally or upon sternal rub)

•breathing problems which 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:

•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

Naloxone will continue to work for as long as 30 to 90 minutes, but after that time, overdose symptoms may return.

ASSURE 911 HAS BEEN CALLED and that EMS has been activated. If no one has yet called 911, IMMEDIATELY CALL 911.

After giving naloxone, stay with the individual. If they are breathing on their own, to decrease the individual’s chance of choking on their vomit, place them in the recovery position, on their side and support the body with one bent knee with the face turned to the side.

STAY WITH THE PERSON AND MONITOR FOR RESPIRATORY DISTRESS. Provide rescue breathing as necessary. It is necessary to seek immediate emergency medical assistance (911) after delivering the first dose of naloxone. Keep the patient under continued surveillance and repeat doses of naloxone as necessary.

REPEAT NALOXONE ADMINISTRATION IF SYMPTOMS CONTINUE. The duration of action of most opioids is likely to exceed the 30-90 minutes that naloxone will be effective, resulting in a return of respiratory and/or central nervous system depression, even after an initial improvement in symptoms. If the desired response is not obtained after 2 or 3 minutes, another dose of naloxone may be administered if available.

If after 1-2 doses of naloxone there is no breathing or breathing continues to be shallow, lay the person on their back and continue to perform rescue breathing while waiting for the naloxone to take effect, the person breathes for themselves or EMS arrives.

Contraindications

Hypersensitivity to naloxone hydrochloride

Warnings and Precautions

* Risk of Recurrent Respiratory and CNS Depression: Due to the duration of action of naloxone relative to the opioid, keep patient under continued surveillance and administer repeat doses of naloxone using a new nasal spray with each dose, as necessary, while awaiting emergency medical assistance.
* Risk of Limited Efficacy with Partial Agonists or Mixed Agonists/Antagonists: Reversal of respiratory depression caused by partial agonists or mixed agonists/antagonists, such as buprenorphine and pentazocine, may be incomplete. Larger or repeat doses may be required.
* Precipitation of Severe Opioid Withdrawal: Use in patients who are opioid dependent may precipitate opioid withdrawal. In neonates, opioid withdrawal may be life-threatening if not recognized and properly treated. Monitor for the development of opioid withdrawal.
* Risk of Cardiovascular (CV) Effects: Abrupt postoperative reversal of opioid depression may result in adverse CV effects. These events have primarily occurred in patients who had preexisting CV disorders or received other drugs that may have similar adverse CV effects. Monitor these patients closely in an appropriate healthcare setting after use of naloxone hydrochloride.

Adverse Reactions

The following adverse reactions were observed in a NARCAN Nasal Spray clinical study: increased blood pressure, musculoskeletal pain, headache, nasal dryness, nasal edema, nasal congestion, and nasal inflammation.

To report SUSPECTED ADVERSE REACTIONS, contact Adapt Pharma, Inc. at 1-844-4NARCAN (1-844-462-7226) or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

How To Administer Intranasal Narcan





**HOW NALOXONE IS SUPPLIED**2

Intranasal naloxone is supplied in a carton containing two blister packages each with a single NARCAN Nasal Spray (single 4 mg dose of naloxone hydrochloride intranasal spray).

For questions regarding dosage or timing of the brand being used, please see product package insert instructions developed by the manufacturer.

**STORAGE AND HANDLING OF INTRANASAL NALOXONE**

Store NARCAN Nasal Spray in the blister and cartons provided in a controlled room temperature 15°C to 25°C (59°F to 77°F) and in a dry, dark area.

The naloxone should be checked monthly to ensure proper storage, expiration date, and medication stability.

Local Health Department clinical staff should be familiar with the type of naloxone maintained by the clinic and its use.

Local Health Departments should refer to the package insert and store naloxone hydrochloride according to the individual manufacturer’s direction.

**REFERENCES AND SOURCES**

1. <http://store.samhsa.gov/shin/content//SMA14-4742/Overdose_Toolkit.pdf>
2. <http://www.narcannasalspray.com/> Intranasal Naloxone FDA Package Insert:
3. Massachusetts Department for Public Health Opioid Overdose Education and Naloxone Distribution, http://www.mass.gov/eohhs/docs/dph/substance-abuse/core-competencies-for-naloxone-pilot-participants.pdf.
4. Bohnert ASB, Valenstein M, Bair MJ, et al. Association between opioid prescribing patterns and opioid overdose-related deaths. JAMA. 2011;305(13):1315–1321.
5. Duragesic® (fentanyl transdermal system) [prescribing information]. Titusville, NJ: Janssen Pharmaceuticals, Inc: 2013.
6. Percocet® (oxycodone hydrochloride and acetaminophen tablets) [prescribing information]. Malvern, PA: Endo Pharmaceuticals Inc; 2013.
7. Opana® (oxymorphone hydrochloride tablet) [prescribing information]. Malvern, PA: Endo Pharmaceuticals Inc; 2013.
8. Burghardt LC, Ayers JW, Brownstein JS, et al. Adult prescription drug use and pediatric medication exposures and poisonings. Pediatrics. 2013;132(1):18–27.
9. Data on file. kaleo, Inc.
10. Madadi P, Hildebrandt D, Lauwers AE, Koren G. Characteristics of opioid-users whose death was related to opioid-toxicity: a population-based study in Ontario, Canada. PLoS One. 2013;8(4):e60600. doi: 10.1371/ journal.pone.0060600. Epub 2013 Apr 5.
11. Green TC, Grau LE, Carver HW, Kinzly M, Heimer R. Epidemiologic trends and geographic patterns of fatal opioid intoxications in Connecticut, USA: 1997–2007. Drug Alcohol Depend. 2011;115(3):221–228.

**Additional Resources**

1. Substance Abuse and Mental Health Services Administration. Opioid overdose toolkit: information for prescribers. Accessed April 29, 2015.
2. <http://store.samhsa.gov/shin/content//SMA14-4742/Overdose_Toolkit.pdf>
3. http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm391465.htm