Community Based Naloxone Program Opioid Poisoning Response

Curriculum Guide for Trainers

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Alberta Health Services
Harm Reduction Services

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Purpose

This curriculum has been prepared by the Alberta Health Services (AHS) Harm Reduction Services Team, in partnership with the Alberta Community Council on HIV and Gillian Harvey of the Department of Art and Design at the University of Alberta. It covers necessary information about responding to poisoning and the Community Based Naloxone (CBN) Program naloxone kits. Although information pertaining to stimulant poisoning and response is included, the purpose of this curriculum is to provide information, background, and rationale for people who will be providing opioid poisoning response training and/or community based naloxone kit distribution in Alberta.

Note: Due to the rapidly evolving nature of COVID-19 in Alberta, all information in this document is current, but may be updated at any time. For the most current information on the situation and recommendations in Alberta, please visit the following websites:

- AHS COVID-19 page at www.ahs.ca/covid
- Government of Alberta COVID-19 page at www.alberta.ca/covid19

Contact us

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Learning objectives

This document is intended to support **trainers and naloxone kit providers** in Alberta to:

- Inform individuals of safer use strategies and interventions to mitigate harms associated with ongoing substance use
- Train an individual to identify signs and symptoms of suspected opioid poisoning and distinguish this from stimulant poisoning
- Know about naloxone and relay this information to others
- Train an individual to respond to a suspected opioid poisoning using the response steps
- Train an individual to provide rescue breaths and administer naloxone by intramuscular injection
- Train an individual on post-poisoning response actions
- Be aware of support resources available to trainers, clients and members of the public

Introduction

Opioids

Opioids are **psychoactive substances**. They are primarily prescribed to suppress pain, and may also be used to suppress cough, relieve diarrhea and produce a sedative effect during medical procedures. Both legal and illegal opioids can also be used to produce feelings of euphoria, or intense pleasure. They are derived from the opium poppy and created synthetically or semi-synthetically in pharmaceutical laboratories to make opioid analgesic medications or clandestine laboratories for sale on the street.

Psychoactive substances: legal and illegal substances that affect mental processes (thoughts, feelings, behaviours); does not necessarily imply abuse or dependence.[1]

Common pharmaceutical opioids include fentanyl, morphine, hydromorphone, oxycodone, codeine, methadone, carfentanil, and diacetylmorphine (medical heroin). Street versions of opioids include heroin and fentanyl.

Opioids bind to the opioid receptors in the **central nervous system (CNS)** and parts of the gastrointestinal system. Short term effects of opioids include pain relief, euphoria, drowsiness, respiratory depression (slowed breathing), slowed heart rate, trouble concentrating, nausea and vomiting, constipation, itching and involuntary muscle movements. These effects depend on the dose, frequency of use, method of administration, or if they are used in combination with other substances that depress the CNS.

CNS: the brain, spinal cord and optic nerves; controls and registers thought processes, movement and sensations in the body.[2]

Frequent use of opioids can result in physical and psychological dependence, which can lead to repeated use and increased risk of poisoning (overdose). For those who are dependent, stopping use of opioids can produce withdrawal symptoms of cravings, runny nose, sweating, restlessness, nausea and vomiting, diarrhea, body ache and muscle spasms, chills, and irritability.

Poisoning (Overdose)

Overdose or poisoning can occur when opioids are taken in greater amounts than the body can tolerate and puts an individual at risk of death or permanent brain injury.[3] Overdose can happen with alcohol, over-the-counter medications, prescription medications, illegal substances, or any combination of substances (polysubstance use), and can be accidental or intentional. Proper and timely emergency response can temporarily reverse an overdose and save lives.

There are negative connotations associated with the word “overdose” due to stigma related to substance use. Some people may think overdose is when people **knowingly** take a dose stronger than their body can tolerate. In fact, in Canada, over 15,000 people have died from accidental opioid overdose over the past three years.[5] In most cases, this occurred because the identity, amount, and strength of the substances taken were **unknown**. For this reason, the word “poisoning” is preferred when referring to accidental overdoses.

The World Health Organization defines **poisoning** as consuming enough of a hazardous substance (poison) to cause illness or death.[4] Because the drug supply is unpredictable with unknown levels of toxicity, the terms “overdose” and “poisoning” are often used interchangeably when individuals unintentionally overdose on psychoactive substances. For example: someone may consume carfentanil thinking it is fentanyl, or consume fentanyl thinking it is cocaine. The term alcohol poisoning is generally used to describe an alcohol overdose. In this document, the term “poisoning” will be used.

Section references

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Poisoning prevention

Risk factors

According to the *Alberta Opioid Response Surveillance Report* from Q4 of 2019,[1] more than 80% of opioid-related deaths in Alberta in 2019 were associated with fentanyl. The remaining deaths are related to both pharmaceutical-grade and non-pharmaceutical-grade opioids.[1] It is important to recognize that all substance use, regardless of type of substance or route of use, comes with some level of risk. This is particularly true of illegal, unregulated substances, because there is no way to know the types and amounts of substances present. No substance use is completely safe. However, there are certain factors that put individuals using substances at greater risk of poisoning, as outlined below.

1. Quantity and quality (potency)

Pharmaceutical manufacturers have strict quality control measures. Producers of illegal substances do not. There is no way of knowing what is in an illegal substance or how potent it is.

Often, the illegal drug supply contains traces of other substances a person may not be aware of (e.g., fentanyl or carfentanil in a substance sold as cocaine or methamphetamine). This increases the toxicity of the drug. In this example, these opioids may be more than the person's body can tolerate, causing opioid poisoning.[2]

Illegal fentanyl often comes in the form of a "rock." It appears in small, misshapen rocks or pebbles, which may be dyed bright colours. It is not likely to be pure fentanyl, but rather some grains of fentanyl mixed with various types of fillers. Even illegal substances bought from the same batch may contain "hot spots" because the psychoactive elements are not spread through it evenly. This means that even if using from the same rock of fentanyl, one dose may be several times stronger than the last, making it impossible to know what amount you are using. This leads to an increased risk of poisoning or death.[3]

Image: Street fentanyl from the Safeworks Supervised Consumption Services (AHS)

Although the risk is lower, it is still possible to experience opioid poisoning from use of prescription opioids, if too much is used in a short period of time.

2. Mixing substances

Opioids are **CNS depressants** that cause sedation, slowed breathing, and lowered heart rate, which may be fatal if the person isn't provided with immediate help. Poisoning is more likely to occur when opioids are used with other depressants, such as alcohol, benzodiazepines, muscle relaxants, and sleeping pills. This is because these combinations can further slow breathing.

CNS depressants ("depressants"): substances that slow down central nervous system activities, causing sedation, slowed mental processes, and slowed breathing and heart rate. Examples include opioids, benzodiazepines, muscle relaxants, tranquilizers or sleeping aids, and alcohol.

Stimulants, such as methamphetamine ("crystal meth") and cocaine, are sometimes combined with opioids (depressants). Mixing a depressant and a stimulant together is called a "speedball." Mixing opioids or other depressants with stimulants can increase the risk of poisoning, especially when an opioid is unknowingly present in the stimulant. The Harm Reduction Coalition[3] suggests that people who inject speedballs use more frequently than those who inject just opioids, which may further increase their risk of poisoning.

3. Tolerance

Tolerance is defined as needing increased amounts of a substance (e.g., opioids) to achieve the same effect. Lower tolerance means it takes a smaller amount of a substance to feel its effects or experience poisoning. Tolerance builds with continued use. This means it takes larger and larger doses to produce the same effect over time. Individuals who are unable to maintain regular use will experience reduced tolerance levels. Tolerance levels can drop within 24 hours of not using a substance.[3]

4. Returning to use

When someone has had a period of abstinence from substance use, the risk of poisoning increases.[3] This can happen when someone returns to use after completing a detoxification program, being in the hospital, being incarcerated, or not using for any other reason. They will have a lowered tolerance, and this makes poisoning more likely to occur. This is particularly problematic with opioid use. In order to reduce harms associated with returning to use, individuals are encouraged to start with lowered amounts, using slowly.

5. Health status and age

Health status and age may increase risk of poisoning.

Health conditions that may increase poisoning risk include[4]:

- Liver, kidney, and respiratory problems (e.g., hepatitis, chronic obstructive pulmonary disease [COPD], asthma, smoking)
- Compromised immune system (e.g., HIV)
- High blood pressure, heart disease, diabetes

- Infections
- Lack of sleep, dehydration, poor nutrition
- Mental health status
- History of previous poisoning

While having a history of using substances can lower the risk of poisoning (due to tolerance, familiarity with substances, and experience), increasing age has the opposite effect. As a person ages, they are more likely to experience illnesses, infections, and health conditions related to their long-term substance use.[3] These complicating factors increase the likelihood for opioid poisoning and decreased ability to recover to full wellness.

6. Environment

Using without another person present who can respond to emergent events increases the risk of a poisoning becoming fatal. It is vital to make sure everyone staggers their use so there is always someone who is able to respond effectively to a poisoning.[3]

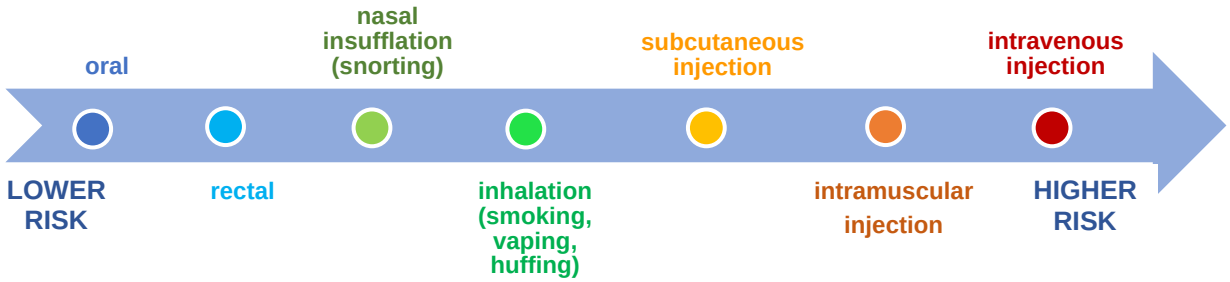
Using substances in an unfamiliar environment has also been shown to increase the risk of poisoning.[5,6] This phenomenon is known as “drug, set, setting,” where a person experiences the effects of the substance they are using more intensely than usual in an unfamiliar place, increasing their risk of poisoning.[4]

7. Route and method of use

Although there are many ways to use substances, intravenous (IV) injection is the fastest-acting and riskiest route. All routes of substance use pose risk of poisoning; however, the safest route is taking substances orally (by mouth). Figure 1 illustrates the continuum of risk by route of substance use. Although injection is the riskiest method, it is preferred by some because of the rapid onset of euphoria (intense pleasure) that it can sometimes produce, and because smaller amounts of substances are needed to produce greater euphoria.

When an individual changes their route to a new method, the risk of poisoning can also increase as they adjust to the effects.[3] For example, taking prescribed medications differently than directed, or crushing or breaking an extended-release tablet that is intended to be taken by mouth, may increase the risk of poisoning.[2]

Figure 1. Routes of substance use on a continuum of risk[7]



For more information on different routes and methods of substance use and safer practices, see Appendix 1: Safer substance use practices.

Safety planning

The use of legal, prescribed, and illegal substances puts individuals at risk of poisoning. There are a number of practices that may reduce harms associated with using and the possibility of poisoning or death.

1. Avoid using alone

When using with others, stagger use to ensure someone is always alert and able to call for emergency medical services (EMS) and administer naloxone, if required. If available, use the services of a supervised consumption or overdose prevention site. If using alone is unavoidable, arrange to have someone do a safety check, leave doors unlocked, and establish a safety plan with loved ones.

2. Use in a familiar environment and avoid rushing

Taking the time to prepare substances carefully and purposefully in an environment that is comfortable and free of threat can reduce the risk of poisoning.

3. Use a test dose

Test the dose by using a smaller amount to determine the strength of the substance. Test dosing is especially important when using a new batch. Doses can be repeated until the desired effect is achieved.

4. Avoid mixing drugs

As mentioned in Mixing substances above, mixing drugs, in particular depressants, can put a person at greater risk for poisoning. Doing a test dose is encouraged when mixing substances. If mixing an opioid with any other substance, use the opioid first to gauge its effect before using more. Be aware of potential interactions between substances used and any pharmaceutical or non-pharmaceutical medications that a person may take routinely. This also includes mixing with legal substances like alcohol, cannabis, or tobacco.

5. Be aware of health and tolerance

Knowing how health affects tolerance is important. If possible, stay hydrated, eat regularly and get enough sleep. Acute or chronic health conditions may reduce tolerance. Periods of not using can reduce tolerance in as little as 24 hours, particularly with opioids. When returning to use, use a test dose.

6. Carefully select route of substance use

As shown in Figure 1 above, the route of consumption impacts level of risk. Injection and inhalation/smoking present the greatest risk of poisoning. Oral, nasal and rectal consumption may reduce the risk of poisoning.

7. Be familiar with signs and symptoms of poisoning

Recognizing the signs and symptoms of poisoning reduces response time**.**

8. Carry a naloxone kit and access help

Calling 911 and administering naloxone in case of opioid poisoning can save a life. Naloxone acts as an antidote to opioid poisoning and works against any type of opioid. It will not harm someone who has not used opioids, so it is safe to use, even if you're not sure what substance the individual has taken.

9. Know community supports and resources

Information about community services is available through Inform Alberta's Harm Reduction directories. The directories list services that can assist in reducing harm and increasing an individual's sense of health and well-being. It is best to call ahead for information on current operating hours of services during COVID-19.

InformAlberta Directories by AHS Zone

- Harm Reduction - Alberta Wide
- Harm Reduction - North Zone
- Harm Reduction - Edmonton Zone
- Harm Reduction - Central Zone
- Harm Reduction - Calgary Zone
- Harm Reduction - South Zone

A list of helplines that can support with accessing community and social services, recovery-oriented care, mental wellness, and general health advice is also available. Everyone is different and treatment will look different for each person. AHS has outpatient assessment and counselling, detoxification and stabilization, day treatment, residential treatment and aftercare. AHS has over 20 clinics that treat opioid dependency, including the Virtual Opioid Dependency program that can provide treatment anywhere in Alberta. A full listing of programs available can be found on the College of Physicians and Surgeons website and more information on AHS Addiction and Mental Health services at www.ahs.ca/amh. See the Harm Reduction Services information sheet on Harm Reduction: Recovery-Oriented Care for additional education on how recovery and harm reduction are closely linked.

Helplines

- 211 Alberta - Information on community and social services
- Addiction Helpline - Recovery-oriented care support
- Health Link 811 - 24/7 health advice and information
- Help in Tough Times - Alberta helplines and supports

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Naloxone

Naloxone is a fast-acting medication that temporarily reverses the effects of opioids by blocking the opioid receptors that bind to opioid drugs. It is the antidote to opioid poisoning and is listed in the World Health Organization (WHO) *Model List of Essential Medicines.*[1] The WHO recommends the distribution of naloxone and training in its administration to anyone likely to witness an opioid overdose.[2]

Image: Injectable naloxone vials (AHS)

Drug information

Drug class

Naloxone is classified as an opioid antagonist. It occupies the same brain receptors that opioids attach to. The naloxone temporarily displaces the opioid molecules and protects the receptors from further opioid uptake. This reverses the symptoms or effects of opioids in the body.

Intended use

Naloxone is used for emergency reversal of known or suspected opioid poisoning, including symptoms of respiratory depression and/or central nervous system depression.

Routes of administration

Naloxone can be given by injection (subcutaneous, intramuscular or intravenous) or nasal spray. Subcutaneous (SC) injections are given in the fatty tissue and intramuscular (IM) injections are given in the muscle. Alberta's CBN Program advises the public to use the IM route in the vastus lateralis (middle outer thigh) or deltoid (shoulder/upper arm). Duration, or the length of time it is effective, can vary by dose and route of administration, but IM administration has been shown to be more prolonged than SC administration.

In Canada, injectable naloxone is known by its generic name, naloxone hydrochloride. Intranasal naloxone, which is administered as a spray, is known by its trade name, NARCAN™ Nasal Spray. Both are the same medication and produce the same effects despite different routes of administration. More information on NARCAN™ Nasal Spray can be found at narcannasalspray.ca.

Effects

Naloxone has no effect in the body in the absence of opioids. It will only act on opioid receptors and does not reverse poisoning or overdoses from other substances.

Naloxone takes 3 to 5 minutes to start working, whether given by IM injection or by nasal spray. Effects wear off after 20 to 90 minutes, and can vary depending on route of administration.

Thus, it is important to call EMS as the naloxone will wear off, allowing any remaining opioid molecules to re-attach, raising the risk of a second poisoning or **rebound toxicity**.

After 20 to 90 minutes, naloxone effects can wear off. At this point a person can experience **rebound toxicity**. This is the re-emergence of symptoms of opioid poisoning.

Dosage

Dosage recommendations by AHS CBN Program are: Initial dose of 0.4 mg or one entire vial, followed by repeated doses of 0.4 mg at 3 to 5 minute intervals until desired improvement. Additional resuscitative measures are critical while waiting for emergency support (e.g., rescue breathing or cardiopulmonary resuscitation [CPR]).

Contraindications and interactions

The only situation where a person should not be given naloxone (referred to as a "contraindication") is the rare case of hypersensitivity to naloxone hydrochloride or any ingredients in the drug or container of the drug. Some of these ingredients include hydrochloric acid, methylparaben, propylparaben, and sodium chloride.

There are no known interactions with any drugs, food, herbs, or laboratory tests.

Contraindications may not be known to the rescuer at the time of responding to an opioid poisoning. The priority is to reverse opioid effects and restore vital organ function. Because of the unknown nature of contraindications, it is important to call 911 and perform rescue breathing, should the person be hypersensitive or respond abnormally to naloxone.

Warnings and adverse reactions

Individuals who receive naloxone should be closely monitored to watch for rebound opioid toxicity, the re-emergence of symptoms of opioid poisoning following the reversal of opioid poisoning symptoms by naloxone. This occurs because the effects of naloxone may not last as long as the opioid effects.

Abrupt reversal of opioid poisoning may result in acute opioid withdrawal syndrome. Symptoms of opioid withdrawal include: nausea, vomiting, diarrhea, increased blood pressure, increased heart rate, irritability and/or chills/sweats. This is caused by the immediate displacement of opioids from the receptors by the naloxone.

Storage

Injectable naloxone should be stored between 15 and 30°C and protected from light. Although this is the recommended temperature range, there are situations that may arise where this is not possible. Studies have shown that repeated exposure to heat (as high as 54°C) and repeated exposures to cold (as low as - 6°C) showed a decrease in the medication's concentration to 89% active ingredient when compared to a properly stored vial of naloxone.[12]

Naloxone kits should not be stored outdoors or in locations where extreme temperature changes can occur (e.g., vehicles). Naloxone kits can be stored in backpacks or bags; however, when freezing temperatures occur, it is better to store the kit closer to the body, like inside one's coat. This will help maintain the correct temperature and prevent freezing.

Naloxone kits exposed to prolonged temperatures over 30°C or under 15°C should be replaced. **However, if this is the only naloxone available in the event of a suspected opioid poisoning, it should still be used.**

Expiry

Injectable naloxone is stable for two years. Studies have been conducted to determine how much active medication is in expired naloxone vials and found that naloxone may be stable for up to five years past the expiry date.[12] It is recommended, however, that any naloxone that is past the expiry date on the side of the vial be replaced. **However, if this is the only naloxone available in the event of a suspected opioid poisoning, it should still be used.**

Naloxone kit distribution

Over 15 countries have implemented naloxone programs, providing take-home kits for emergency use to people who are likely to witness an opioid overdose.[14] It has been found that naloxone distribution programs reduce poisoning deaths among participants.[14] The 2017 Alberta Medical Examiner's data identified that most poisoning events occur in people's homes.[13] Thus, it is vital to have a naloxone kit readily available to facilitate a timely response.

Injectable naloxone was approved for use in Canada more than 40 years ago. In March 2016, Health Canada amended its prescription drug list to allow for the emergency use of injectable naloxone for opioid poisoning outside hospital settings. In October 2016, Health Canada approved the use of nasal naloxone hydrochloride spray, thereby providing two options for naloxone administration in community settings: injectable naloxone for IM administration and naloxone hydrochloride nasal spray for intranasal administration.

Image: Alberta CBN Program Naloxone Kit (AHS)

Naloxone distribution has been a part of public health initiatives in many communities around the world and is an example of harm reduction. It has been used by members of the public to save thousands of lives by reversing opioid poisoning symptoms. Many lives have been saved in Alberta since widespread distribution of CBN kits began in 2015.

History of naloxone in Alberta

The first Canadian naloxone kit distribution program began in 2005. It was started by Streetworks, a community agency in Edmonton. Streetworks partnered with the Chicago Recovery Alliance to bring naloxone kits to Canada in response to an increase in opioid poisonings in Edmonton. Funding was provided by Health Canada and included a study of 50 participants.

In response to increasing fentanyl-related deaths across Alberta in 2015, the Alberta Community Council on HIV (ACCH) received a one-year grant from Alberta Health to initiate the first province-wide dispensing program for naloxone kits: the Take Home Naloxone Program. In December 2015, AHS became responsible for the coordination of the program to support the expansion of naloxone kit distribution beyond the initial eight sites whose focus was on the high risk and vulnerable populations. ACCH and AHS work collaboratively to ensure that naloxone and opioid poisoning response education and training is consistent across the province.

Image: Naloxone Kit distribution at a community event (AHS)

In 2018, the program was renamed the Community Based Naloxone Program. From 2016 through March 31, 2020, the CBN Program distributed 243,576 kits to the public via more than 2,000 provider sites. In the same time period, there have been more than 11,000 opioid poisoning reversals reported in Alberta as a result of the publicly funded kits. As of the end of 2019, naloxone programs have been established in all provinces and territories in Canada.

For more information, see Appendix 2: Timeline of naloxone distribution in Alberta.

Alberta's CBN Program kits

AHS has overseen the CBN Program in Alberta since January 2016. These kits are available at no cost from a variety of pharmacies, community programs and AHS centres. A list of available kit locations can be found at www.ahs.ca/naloxone.

CBN Program kits include:

- **A.** 1 easy-to-follow instruction insert outlining steps for responding to an opioid poisoning
- **B.** 1 pair of nitrile gloves for personal protection against body fluids
- **C.** 1 barrier mask used to perform rescue breathing
- **D.** 3 alcohol pads to sanitize the naloxone injection site whenever possible
- **E.** 3 VanishPoint® syringes with a single-hand activation safety mechanism that automatically retracts the needle directly from the patient into the barrel of the syringe when the plunger handle is fully depressed

F. 3 single-dose vials of injectable naloxone

Images: CBN Program kit and contents (AHS)

The following section will go over how to respond to suspected opioid poisoning with a naloxone kit.

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Opioid poisoning response

Opioids affect the central nervous system and depress the respiratory system. Opioids bind to receptors in the brain that control breathing and can slow down breathing. Opioid poisoning happens when a toxic amount of opioids causes a person to breathe insufficiently or become unresponsive to stimulation. When breathing is slowed, blood oxygen levels drop. Severely low blood oxygen levels keep vital organs from working. This can cause loss of consciousness, coma, permanent brain damage, or death.

Signs of opioid poisoning

- Slow or no breathing
- Unresponsive to loud noise or painful touch (can't be woken up)
- Difficulty walking, talking or staying awake
- Limp body
- Pale face
- Blue lips or nails
- Gurgling or snoring sounds
- Choking or vomiting
- Cold and damp skin
- Narrow (constricted) pupils
- Seizure-like movements or rigid body (these are unusual presentations)

What NOT to do when responding to opioid poisoning

Some of the things people do to help someone experiencing poisoning may do more harm than good. Common responses by the average person that can be harmful are listed below.

1. Do NOT let them "sleep it off"

A person who is intoxicated may change quickly, and without warning, from "being on the nod" (i.e., drowsy, falling in and out of sleep) to being unconscious. A sleeping individual will react to loud noises and stimulation. Shouting, shaking and painful stimuli (described in Step 3: Check for response below) are effective in waking someone who is sleeping, but they will not affect someone with an opioid poisoning. It is important to regularly monitor those who are sleeping after taking a psychoactive substance. Letting someone "sleep it off" increases risk of brain damage or death from loss of oxygen if they are unconscious and do not receive appropriate treatment.

2. Do NOT give them a stimulant to reverse an opioid effect

A common belief is that taking combinations of stimulants (e.g., crystal meth, cocaine) and depressants (e.g., opioids), called "speedballs," can prevent opioid poisoning. However, this can put a person at further risk by masking symptoms of opioid poisoning when they start and

prevent appropriate and timely response before more severe signs and symptoms of poisoning set in. Stimulants may also contain opioids and could exacerbate a poisoning. Only naloxone can reverse the effect of opioids.

3. Do NOT use force

Hitting, slapping, or punching a person is use of unnecessary force and may cause injury when trying to wake a person up. Instead, perform a sternal rub or trapezius squeeze, as described below in Step 3: Check for response.

4. Do NOT Give them a cold bath or shower

Putting an unconscious and unresponsive person into a pool of water or shower can cause aspiration of water (essentially the same effect as drowning), where water inadvertently enters the lungs. This may affect levels of oxygen in the blood and cause poor health outcomes or death for those who don't receive appropriate medical intervention.[3]

5. Do NOT Make them vomit

Making a person vomit when they are semi-conscious or unconscious increases risk of choking or aspiration, and will not reverse opioid effects that have already set in through the substance entering the bloodstream.

How to respond to opioid poisoning with naloxone: 6 steps

For additional considerations with respect to reducing the risk of COVID-19 transmission in poisoning response, see Opioid Poisoning Response and COVID-19.

Before responding: Scene safety

Scene safety is an essential first step in poisoning response. Scan the scene for sharp objects, blood, and unknown substances, including drugs or paraphernalia. These items may pose harm to you as the responder, the person who is experiencing poisoning, or anyone else on the scene. Remove any potential hazards that are safe to remove.

If you assess the scene as unsafe, maintain a safe distance, and call 911.
Describe the scene and situation to the 911 operator and follow their direction.

Once the scene is safe, use the following six steps to respond to an opioid poisoning.
These steps are also outlined in the instruction insert found in every CBN Program kit.

Step 1: Look for signs of opioid poisoning

You may not see all of these signs, but **if you see any, follow Step 2.**

- Slow or no breathing

- Unresponsive to loud noise or painful touch (can't be woken up)
- Difficulty walking, talking or staying awake
- Limp body
- Pale face
- Blue lips or nails
- Gurgling or snoring sounds
- Choking or vomiting
- Cold and damp skin
- Narrow (constricted) pupils
- Seizure-like movements or rigid body (these are unusual presentations)

Step 2: Check for response

Check for a response to verbal or painful stimulation.

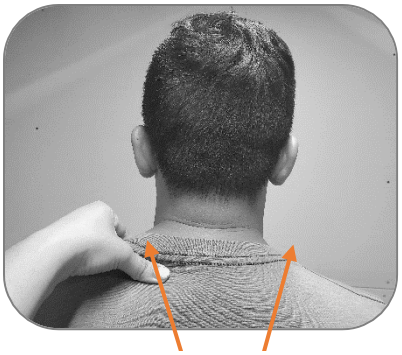
A. Verbal stimulation: Speak loudly to the person and watch for a response.
Ask them to wake up. Ask the person to breathe. Always inform the individual before you make any physical contact. e.g., "I am going to put my hand on your shoulder now. Can you hear me? Try to take a breath."

Appropriate responses include eyes opening, body movement, head nodding, speaking, and moaning. If the person does not respond to verbal stimulation, check their response to painful stimulation.

B. Painful stimulation: Perform a **sternal rub**.
Tell them you are going to rub hard on their chest.
e.g., "I am going to rub my fist on your chest to try to wake you up."

Rub hard on their sternum (breast bone) with the knuckles of your closed fist moving your fist back and forth to elicit a pain response.

You can also try a **trapezius squeeze** test. This is done by holding and firmly squeezing one to two inches of the trapezius muscle to see if there is a pain response. These muscles are located on either side of the back at the base of the neck. Tell the individual you are going to do this, even if there is no response.
e.g., "I am going to squeeze the muscle at your neck really hard to try to wake you."



Appropriate responses to pain include the individual's body moving, pulling or pushing away from the pain, making sounds, or becoming alert.

If there is no response to verbal or painful stimulation, or if the individual is responding somewhat but unable to follow commands to breathe independently, call 911 immediately and follow Step 3.

You should always call 911 if:

- The person is unresponsive to verbal or painful stimulation
- You can see physical trauma or blood on the person
- There are large amounts of an unknown substance around the person so it is not safe for you to respond
- You have to leave the scene and there is no one else available to help

When calling 911, describe what you see.
e.g., "There is a young male lying down on the ground and he is not responding when I shake him or rub his chest. He is not waking up and I am not sure if he is breathing. His skin is cold and pale."

Identify your location, providing as much detail as possible. If you have a naloxone kit, let them know that as well. Follow the operator's direction. They will guide you through the best response, based on your description of the scene.

Note: The Good Samaritan Law provides some legal protection for individuals who seek emergency help during an overdose. This may provide protection from charges related to simple possession of controlled substances. Learn more about the Good Samaritan Drug Overdose Act below.

Step 3: Are they breathing?

Check if the chest is rising and falling. You can also listen closely for 5 to 10 seconds and feel for air coming out of the person's nose or mouth.

recovery position

A. **If they are breathing: Put them in recovery position.**
   - Place them on their side to keep their airway open and prevent aspiration or choking, should the person start to vomit.
   - Any time you need to leave the person alone, they should be placed in this position. Remain with them until help arrives, if you can, and frequently check for any changes in breathing.

B. **If they are not breathing: Start rescue breathing.**
   - Put on the disposable gloves and unpack the barrier mask found in the CBN kit.
   - Place the person on their back, preferably on the ground or other firm surface.

gloves

mask

- Tilt their head back, lifting their chin to open the airway. This is done by placing one hand on the forehead and two or three fingers under the chin and gently tilting the head back.
- Open their mouth and place the barrier mask as instructed in the pictures and text on the mask. It is the right side up if you can read the text.
- Pinch the nostrils with one hand and blow into the mouthpiece of the mask.
    - **If the airway is clear**, the breaths will make the chest rise and fall.
    - **If the airway is not clear**, the chest will not rise and fall. The person's cheeks may puff out with air. If this happens, readjust their head by lifting at the back of the neck. Make sure it is tilted back with the chin pointing at the sky or ceiling. Repeat two test breaths and continue to readjust until the airway is clear.

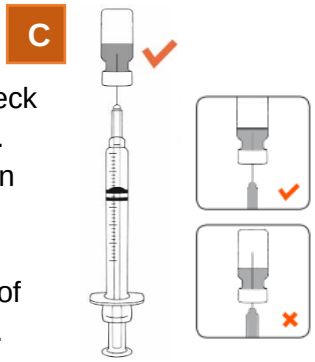
- Provide one rescue breath every five seconds by blowing into the mouthpiece while pinching the person's nostrils. Do this for two minutes.
- If there is no change after two minutes of rescue breathing (approximately 24 breaths)—the individual is not waking up or breathing on their own—prepare to inject naloxone and **follow Step 4**.

Step 4: Prepare naloxone

Remember, naloxone is a safe medication and will have no negative effect on someone who has not consumed opioids.

A. Prepare the naloxone vial: Pull the white plastic cap off the naloxone vial and clean the rubber opening at the top with an alcohol pad from your kit. There may be times when it is not possible to clean it; in this case you should proceed anyway.

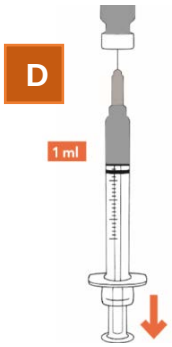
B. Prepare the syringe: Remove the VanishPoint® safety syringe from its packaging and take the cap off the needle.



C. Insert the needle into vial: Insert the needle into the rubber top of the naloxone vial. Insert until the tip of needle is visible in the neck of the vial. Tip the vial upside down with needle still inside the vial. Ensure the tip of the needle isn't too far into the vial and remains in the liquid.

D. Draw up naloxone: Once upside down, pull back on the plunger of the syringe and watch the liquid drip in to the barrel of the syringe. Ensure the needle tip is always in the liquid and not drawing air from the vial. (Pull the needle out slightly as the volume of liquid lowers.)

E. **Check the dose:** Confirm that there is 1 mL of naloxone in syringe. There should be at least 1 mL of liquid (naloxone) in the syringe when you have drawn out all contents of the vial.

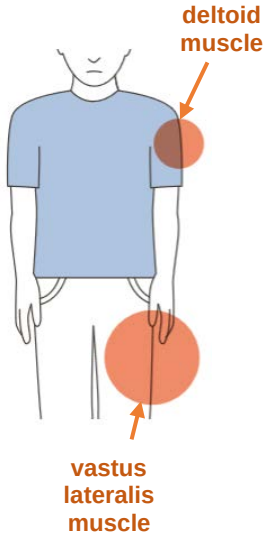


F. **Remove air as needed:** Push out any excess air by pushing the plunger gently while needle is pointing up, being careful not to push the plunger all the way. If there are large air bubbles, flick the barrel with your finger to pop them. Small bubbles are okay. Pull the vial off the needle. Your syringe is ready to inject.

G. **Keep the vials:** Store the empty vial in the naloxone kit case for EMS to see when they arrive.

Step 5: Inject naloxone

Naloxone should be injected in the outer thigh or shoulder muscle.



A. **Prepare the injection site:** If it can be done easily, expose the injection site (orange circles in graphic) so the skin can be cleaned with an alcohol pad prior to injection. The ideal site is the vastus lateralis, the large muscle located in the middle outer thigh. If the thigh muscle cannot be accessed, inject naloxone in the deltoid muscle located on the outside of the upper arm. Injection can be done through the person's clothing if needed.

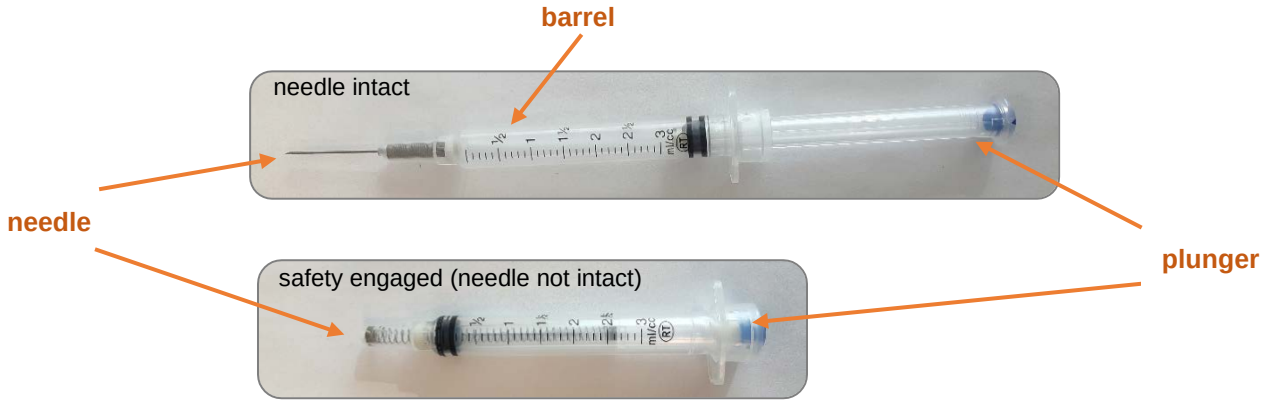
B. **Insert the needle:** Hold the filled syringe like a dart and inject at a 90 degree angle in a swift motion into the deep muscle.

C. **Inject the naloxone:** Press slowly and steadily on the plunger to inject the naloxone into the muscle.

D. **Engage the safety mechanism of the syringe:** Once you have pushed the plunger in all the way, you will feel and hear a click. This signals that the safety mechanism in the syringe has pulled the needle into the barrel of the syringe (see Figure 2 below). Dispose of the syringe in a sharps or biohazard bin, if available, or place in your CBN kit for safe disposal later.

E. **Wipe the injection site:** Any bleeding at the injection site can be wiped with a gauze or a tissue. Avoid use of alcohol pads post-injection as they do not stop bleeding and can cause irritation.

Figure 2. VanishPoint® syringe with needle intact and safety mechanism engaged (needle not intact)



Step 6: Repeat

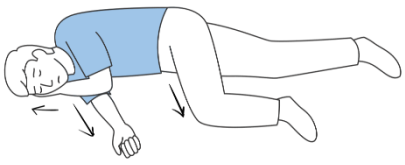
Naloxone may take 3 to 5 minutes to produce effects in the body. During this time, it is important to continue providing rescue breaths as described in Step 3. Movement, moaning, speaking, eyes opening, breathing, and the ability to respond to commands are all indications that the naloxone is working. Continue to encourage the individual to squeeze your hand, focus on taking a breath, or open their eyes.

A. **If after two minutes, you do not see changes indicating the naloxone is working, administer another dose of naloxone. Follow Steps 4 and 5 above or in the CBN kit insert.** Repeat for every dose of naloxone given. If the person remains unable to breathe independently, continue rescue breathing to support oxygen levels. Repeat this cycle until the person becomes alert and able to breathe independently or until help arrives.

B. **If after two minutes, the individual is conscious, but unable to breathe adequately, continue rescue breaths until help arrives.** Inform them of what you're doing. It is important to communicate any actions demonstrating respect for personal space and body and to reduce anxiety and fear by avoiding sudden physical responses.

   e.g., "You were unconscious and not breathing. You're not breathing enough to stay alert so I'm going to give you rescue breaths now. I'm going to place this mask on your face and pinch your nostrils and give you a breath through the mask. You're safe and help is on the way to make sure you are okay."

C. **If the person is responsive and able to breathe on their own,** prompt the individual to breathe every five seconds. **Place the individual in the recovery position** while waiting for help to arrive and continue to prompt breaths.



e.g., “Take a deep breath now. I’m going to remind you to take a breath regularly so we can keep you awake. You’re safe. You were unconscious and not breathing. Help is on the way. I’m going to place you on your side so your airway stays open and you can take better breaths. I’ll stay with you.”

Aftercare: Providing information

When the person becomes fully alert, maintain a calm, reassuring presence. Use simple words. Assure them that help is on the way. Provide them with some information and education on what happened, harm reduction, naloxone, and safer substance use where you can.

Possible discussion points include:

A. Describing what happened and what was done.
e.g., “I found you unconscious on the ground. You weren’t breathing. I gave you rescue breaths with this mask and then naloxone to help you breathe again. Help is on the way, but you’re safe for now. I’m glad you’re awake and okay. I know this is probably a lot to take in. I’ll stay with you until help arrives.”

B. Giving information on naloxone.
e.g., “Naloxone is a fast-acting drug that temporarily reverses effects of opioid poisoning, like not breathing. It’s given by injection or by nasal spray and helps a person come to and start breathing again. It only lasts for 20 to 90 minutes. Most opioids will last for two hours or more, so it’s really important that you don’t take any other opioids while it’s in your system. You won’t feel anything if you do use more because of the naloxone. Once the naloxone wears off, the opioids can take effect again and put you back into a poisoned state. It’s important to be checked by a healthcare provider to make sure you’re okay.”

Note: The injection site may be bruised or sore for a couple of days after the injection. Cold compresses to the site or over-the-counter anti-inflammatory medications can relieve soreness. If bruising and soreness persists for more than 7 days, advise the person to seek advice from a healthcare professional.

C. Encouraging them to stay until EMS arrives. If the person is anxious and wants to leave, encourage them to stay until EMS arrives for further assessment. Individuals may not have to go to the hospital to be monitored, but EMS will provide important information and advice on how to stay safe as the naloxone wears off.

D. If the person is determined to leave before EMS arrives, let them know that:

- Naloxone wears off in 20 to 90 minutes.
- There is a risk of poisoning recurring once the naloxone has worn off.

- They should remain with people they trust or go to a supervised consumption site or overdose prevention site (if available) for two or more hours to ensure they remain safe.
- If they are alone, advise them to stay in a public place where help is available if needed.
- If they are going to use, provide education on Safety planning.

Handover to EMS

When EMS or first responders (e.g., fire and rescue or police) arrive on scene, provide information about the events that have taken place. This is best done by the person who led the response. For example, the person who called 911, spoke with the operator, and delegated tasks.

Information to provide EMS:

- What you saw when you arrived
- What you did to respond to the scene and person
- What the person's response was to your intervention
- How many doses of naloxone were administered and where the sharps and vials are located
- What you know of the substances that may have been consumed
- Any other noted injuries or pertinent information

If the person who experienced poisoning is conscious, introduce them to EMS. Inform the individual that EMS is there to ensure safety and provide necessary medical attention. At this time, you can usually leave if you've given EMS all the information requested. Wishing the person well and saying goodbye allows you to end your involvement on a positive note. If at any time you have to leave the individual, place them in recovery position and leave used vials visibly beside them so EMS is aware naloxone has been given.

Dispose of your gloves, barrier mask and sharps safely. You can obtain a new naloxone kit and report usage of your naloxone kit online or on paper. Visit www.ahs.ca/naloxone for more information.

More information about poisoning response

Videos

Sometimes it is helpful to see interventions in action in order to learn and feel confident about responding to suspected opioid poisoning. A small collection of helpful videos can be found below.

Poisoning response

- Overdose Response and Administration of Naloxone, AHS

- Ask a Paramedic - Opioid Overdoses, AHS
- Overdose Videos, Harm Reduction Coalition

Recovery position

- Recovery position, National Health Service
- How to put an adult in the recovery position, St. John Ambulance

Recovery position

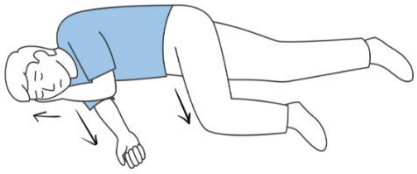
First aid and CPR courses teach the method of placing a person in recovery position when they are unresponsive and breathing. Recovery position puts the airway in the best position to stay open and prevents twisting of the spine. When a person is lying on the ground on their back (facing up) while unconscious, there is a risk that the airway can be blocked by the person's tongue, saliva, or other body fluids.

When to put a person in recovery position:

- When the person is breathing adequately but not conscious or responding to touch or pain
- When the person is to be left alone for any period of time

How to put a person in recovery position:

Place the person in recovery position by turning them onto their side with one arm outstretched on the ground and the other bent with the elbow resting on the outstretched arm. Place their hand under their head for support. The top leg should be bent and pulled slightly forward to prevent them from rolling onto their stomach.



Any time you need to leave the person alone, the individual should be placed in this position. Remain with the person until help arrives if you can, and frequently check for any changes in breathing.[1]

When not to put a person in recovery position:

- When a person is fully conscious and responsive
- When a person is able to keep their own airway open
- When it can worsen the person's condition (e.g., potential neck injury due to a fall)
- When it interferes with an emergency intervention (e.g., providing chest compressions)

Chest compressions vs. rescue breathing

Opioids bind to receptors in the brain that control respiration (breathing). When a person experiences opioid poisoning, respiration rate will decrease, thus decreasing the oxygen levels in the body. Lack of oxygen can cause other organs, like the heart, to stop functioning.

Recommended treatment of opioid poisoning involves addressing respiration and oxygen levels via rescue breathing, and administering naloxone to reverse opioid effects.[16] It is vital to perform rescue breathing while waiting for naloxone to be administered and take effect.[16]

Rescue breathing, also called artificial respiration, ventilation, or mouth-to-mouth resuscitation, is done by the rescuer manually providing breaths for the affected individual either by breathing into their mouth (with or without a barrier) or with a bag valve mask. Rescue breathing will increase the available oxygen and support the other organs to continue to function.

Because we know the respiratory system is the primary system affected in opioid poisoning, the CBN Program recommends rescue breathing as part of the initial response followed by naloxone administration for suspected opioid poisoning, when the affected individual is not breathing but has a pulse. Rescue breathing alone, **without** naloxone, may save someone while waiting for EMS.

Calling 911 is a vital first step when a suspected opioid poisoning has been identified. The 911 operator may request you perform other assessments like a pulse check or that you start chest compressions. Each response situation is unique. The CBN Program recommends that the caller always follow the directions of the 911 operator.

Always call 911 and follow the directions of the operator for response.

Chest compressions are a part of CPR, which is a response to cardiac arrest (stopping of the heart). When an individual experiences opioid poisoning and does not receive emergency support, the decreased levels of oxygen to the brain may result in slowing and eventually stopping of the heart. A weak or absent pulse (heartbeat) is a sign that a person needs CPR immediately. CPR involves chest compressions and rescue breathing to provide oxygen and to circulate the oxygen in the blood. CPR requires completion of a certification program that teaches basic life support skills. The training provided by the CBN Program does not include CPR.

Some jurisdictions and naloxone distribution programs recommend chest compressions only. This is based on best practice guidelines for cardiac arrest; however, there is no scientific consensus on whether to provide chest compressions alone over rescue breathing in response to suspected opioid poisoning. There is not enough evidence on chest compressions for individuals who have low levels of oxygen due to opioid poisoning.[16]

Good Samaritan Law in Canada

The Good Samaritan Drug Overdose Act became law on May 4, 2017. As part of the Government of Canada's comprehensive approach to addressing the health crisis related to opioids, the Act provides "some legal protection for people who experience or witness an overdose and call 911 (or their local emergency service) for help."[7] The Act protects those responding to, and staying at the scene of a suspected poisoning, from charges for possession of a controlled substance (i.e., drugs) under section 4(1) of the Controlled Drugs and

Substances Act. This is not specific to just opioid poisoning but includes poisoning by any substance.

It also protects those who:

- may be in breach of conditions related to simple possession of controlled substances (i.e., drugs) in a pre-trial release
- are under probation orders
- are on conditional sentences
- are on parole

Poisoning is an emergency. Even if naloxone has been given, 911 should always be called, as naloxone can wear off before the person completely recovers from the poisoning. Stay with the person until help arrives.

The Act does not protect against more serious offences, such as outstanding warrants, production and trafficking of controlled substances and crimes not outlined within the Good Samaritan Drug Overdose Act.

It is hoped that the Act will encourage people to stay at the scene of a suspected overdose, call for help, administer naloxone if required, provide first aid and remain calm without worry of being arrested at the scene.

The Government of Canada has a Good Samaritan Drug Overdose Act poster available for printing.

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Stimulant poisoning

When an individual takes a stimulant, the brain and nervous system speed up and work harder. Examples of stimulants include: amphetamines, cocaine, MDMA, Ritalin, and caffeine. Unlike opioids, there is no single antidote (like naloxone) for stimulant poisoning. Stimulant poisoning can be life-threatening. Calling 911 or EMS is critical.

Signs and symptoms of stimulant poisoning

Stimulant poisoning looks different from opioid poisoning because the drugs have the opposite effect.

Physical symptoms:

- Fast pulse (heart rate) or no pulse at all
- Chest pain or tightness
- Headache
- Difficulty breathing, shortness of breath, rapid breathing
- In and out of consciousness
- High temperature (feeling overheated), profuse sweating with chills
- Inability to walk or talk
- Vomiting
- Restlessness (inability to sit still)
- Seizure-like movement or convulsions
- Jerking or rigid arms and legs
- Grinding teeth or jaw clenching
- Muscle cramping
- Dehydration
- Foaming at the mouth

Psychological symptoms:

- Confusion
- Psychosis (e.g., seeing, hearing, or feeling things that aren't real; paranoia; delusions of persecution, fear, or aggression)
- Extreme anxiety or panic
- Extreme agitation, irritability
- Hypervigilance (heightened awareness of surroundings)

The effects of stimulants can be more varied and unpredictable than opioids. For this reason, some people may perceive some of the signs and symptoms listed above as a "bad reaction" or part of their high, while others may view them as poisoning. "Overamping" is a term that has been used to describe this varied range of negative experiences.

Psychosis becomes more common with frequent stimulant use. People may realize that hallucinations or delusions are due to the substance in earlier stages of use. However, with repeated use, they could lose this insight and may come to believe their hallucinations. Often, symptoms of increasing anxiety or depression can be warning signs that psychosis is about to occur. Furthermore, when using stimulants, individuals are less likely to maintain regular sleep schedules, at times remaining awake for several days in a row. Sleep deprivation can worsen and intensify symptoms of psychosis.

How to respond to a stimulant poisoning

Emergency response

Call 911 if the person:

- Is not breathing
- Has no pulse (heart rate)
- Is losing consciousness
- Has chest pain and/or tightness
- Is experiencing severe headaches, excessively sweating, or is increasingly agitated
- Is in rigid positions or making jerky movements with arms and legs
- Is at risk of causing harm to self or others

If the individual loses consciousness but is still breathing, place them in the recovery position and make sure 911 has been called. Watch for any changes in their state. You may be asked not to let individual take any food or liquids in by mouth until EMS comes. Reassure the individual that they are safe and that help is on the way.

Always call 911 and follow the directions of the operator for response.

Provide EMS with any relevant information about the individual, including:

- Substances taken
- Medical conditions known
- Any observed behaviours of concern

Supportive measures

For symptoms that are not immediately life-threatening to the individual or to others, the following measures can reduce overstimulation and discomfort for people experiencing stimulant poisoning:

- Use simple and direct language
- Take the individual to a quiet room or space, away from other people, loud noises or bright lights
- Remain with the person at all times
- Reassure them that this feeling will pass, and they will be okay

Other optional comfort measures include:

- If able, offer sips of water but don't force if refused. Be careful not to give too much, and avoid drinks with sugar or caffeine.
- Place a cool wet cloth on the individual's forehead, back of neck and/or armpits to prevent overheating.
- Coach them to breathe slowly and deeply. Count breaths. Ask them to focus on an image that is calming and relaxing (e.g., waves of water lapping on a shore).

CAUTION

Stimulant poisoning can be life-threatening, thus it is important to avoid any interventions that may worsen the person's symptoms, or cause further risk of harm.

Responders should NOT:

- Restrain or pin the person down on the ground
- Put pressure on their chest or cover their nose or mouth
- Argue or force drinks or other comfort measures if refused
- Increase exposure to sensory stimuli. Do not put them in a room with lots of people, loud noises or bright lights.
- Overhydrate or provide caffeinated or sugary drinks that may add to their symptoms of heightened stimulation

Section references

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2. CATIE. Tips for Preventing Overdoses from Uppers. https://www.catie.ca/sites/default/files/CATIE-ODBooklet-UppersENG-PRINT.pdf. Published 2017.
3. Harm Reduction Coalition. Stimulant "Overamping" Basics. https://harmreduction.org/issues/overdose-prevention/overview/stimulant-overamping-basics/. Accessed July 6, 2020.
4. HealthLink BC: Guided Imagery. https://www.healthlinkbc.ca/health-topics/aa84044spec. Updated June 28, 2018.
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Taking care of responders

Some studies have found that people who use substances and have responded to a poisoning event may feel proud, confident and in control as a result of recognition and appreciation.[6] However, some bystanders-turned-responders may not have the same experience.

Responding to a poisoning can cause stress for people, even for experienced responders. Trauma is defined as an event that is disturbing and overwhelming, profoundly impacting an individual's ability to cope.[2] Some people may develop post-traumatic stress disorder (PTSD), a mental health condition that results from experiencing a traumatic event or a number of traumatic events. People who have responded to a number of poisonings may be at greater risk for negative psychological outcomes.[3,5] Although this section is focused on responders, this information can also be used to support anyone impacted by poisoning (e.g., family members, bystanders, or the person who experienced the poisoning).

Addressing psychological distress in responders

When engaging with members of the public who have taken on the role of responders in the community, discuss the importance of giving oneself time to process and recover from the intense event. Self-care is vital in these instances.

It may be helpful to seek support from a physician, care provider, or mental health professional if a person's daily living activities and quality of life are affected by:

- Change in emotions (crying, uncontrollable anger, irritability, increased reactivity)
- Loss of appetite
- Trouble sleeping
- Little or no interest in routine or pleasant activities
- Feeling guilty or helpless
- Physical or emotional distancing from loved ones
- Repeating aspects of the event in their mind

Ways to reduce psychological stress in people responding to a poisoning include:

- Providing thorough training on how to respond and administer naloxone, including:
    - Opportunities for practice to increase the trainees' confidence
    - An environment to ask questions and be open about their comfort level around poisoning response interventions (e.g., not being confident about rescue breathing technique)
- Encouraging trainees to debrief after a poisoning response event. This may include local help lines and/or connecting with local resources to talk about the event.
- Providing trainees with information on resources for grief support (see below)

Grief support resources

- Grief: Loss As a Result of Substance Use, MyHealth.Alberta.ca

- Grief and Grieving, MyHealth.Alberta.ca
- Gone too Soon: Navigating grief and loss as a result of substance use, AHS
- Moms Stop the Harm
- Grief Recovery After a Substance Passing (GRASP)
- The Compassionate Friends of Canada

Section references

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2. Nathoo T, Poole N, Schmidt R. Trauma-Informed Practice and the Opioid Crisis: A Discussion Guide for Health Care and Social Service Providers. http://bccewh.bc.ca/wp-content/uploads/2018/06/Opioid-TIP-Guide_May-2018.pdf. Published June 2018.
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5. Toward the Heart. Take Home Naloxone: A Guide to Promote Staff Resiliency & Prevent Distress After an Overdose Reversal. https://towardtheheart.com/assets/uploads/1498603569uLoegEpvU14s7SqwcwLiarQYrM2ce2RW66ET9NW.pdf. Updated December 23, 2015.
6. Wagner KD, Davidson PJ, Iverson E, et al. "I felt like a superhero": the experience of responding to drug overdose among individuals trained in overdose prevention. *International Journal on Drug Policy*. 2014;25(1):157–165. doi:10.1016/j.drugpo.2013.07.003

Workplaces and naloxone kit use

Publicly funded naloxone kits are for distribution to members of the public at risk of poisoning likely to witness a poisoning. The kits are not for use by employees in the workplace (e.g., for occupational health and safety or emergency response as a bystander while at work).

Please follow your workplace policies around medical emergencies for suspected poisoning. This should include calling 911 and providing rescue breathing or CPR as needed until EMS arrive. Nasal spray formulations of naloxone can be purchased for occupational health and safety use. It is the responsibility of each organization or employer to work within their workplace health and safety policies and legal department advice to determine the criteria for use of naloxone and appropriateness of its use.

The most important message in the event of a medical emergency or suspected opioid poisoning is to call 911 and follow the directions of the 911 operator.

Safety considerations

Needle disposal

The first step of poisoning response is to ensure scene safety for the individual experiencing poisoning and any responders. It may be necessary to remove sharps or needles that prevent safe access to helping the person who is experiencing a poisoning.

To safely remove and dispose of sharps, needles, or syringes:

1. Have a sharps or biohazard container that can be placed firmly on the ground or other flat surface for safe disposal of sharps, needles and syringes on scene. A rigid plastic or metal container with a narrow opening and secure cover (e.g., bleach bottle) will also suffice. Label any makeshift containers clearly with “SHARPS.”
2. Wear disposable gloves.
3. Pick up syringes one at a time, by the barrel with the needle facing away from you.
4. Put the needle in the container with the needle facing down and away from your body.
5. Dispose of gloves and wash hands with soap and water, or use alcohol-based hand rub.
6. Secure the container cover and tape down when all the sharps are picked up.
7. Dispose of the container appropriately. In Alberta, call your local municipality or 311 in larger urban centres to find out where you can drop off sharps for safe disposal.

See Getting Rid of Needles Safely on MyHealth.Alberta.ca for more information on needle safety.

Exposure/contamination risk

Responding to suspected opioid poisoning can put a responder at risk for exposure to fentanyl or other substances. It is important to do an initial risk assessment in order to minimize potential harms.

- Inhalation and transfer to mucous membranes (eyes, nose, and mouth) are common routes of exposure. Always use the disposable gloves and barrier mask provided in your naloxone kit.
- If a scene is visibly high-risk for an exposure (e.g., an illegal drug lab), call 911 immediately and do not enter. If contact with an unknown substance occurs, immediately wash the affected area with soap and water to remove the residue. Do not use alcohol-based rubs or wipes.

Resources on fentanyl exposure

- What you need to know about fentanyl exposure, Government of Canada
- Fentanyl Exposure, Protection, and Treatment Myths and Facts, Health Canada
- Position Statement: Preventing Occupational Fentanyl and Fentanyl Analog to Emergency Responders Exposure, American College of Medical Toxicology

Section references

1. Government of Canada. What you need to know about fentanyl exposure. https://www.canada.ca/en/health-canada/services/substance-use/controlled-illegal-drugs/fentanyl/exposure.html. Updated January 2, 2019.
2. Moss MJ, Warrick BJ, Nelson LS, et al. ACMT and AACT Position Statement: Preventing Occupational Fentanyl and Fentanyl Analog Exposure to Emergency Responders. *Journal of Medical Toxicology*. 2017;13(4):347–351. doi:10.1007%2Fs13181-017-0628-2

Appendix 1: Safer substance use practices

Table 1. Routes and methods of substance use and safer substance use practices

Route	Description	Methods	Safer use practices
Oral	• Taking a drug by mouth to be absorbed in the digestive system • Lowest risk route • lowest onset of effects	• **Eating or drinking** • **Swallowing** • **Parachuting:** swallowing a "parachute" or "bomb" made of tissue or toilet paper containing the drug to be absorbed in the stomach or bowel lining • **Gumming:** rubbing a powdered form of drug onto gums and inside lips	• Encourage a test dose • Wait 30+ minutes before taking any other drugs • Know ingredients and drugs being taken, or material used for parachuting, in case there are any sensitivities or allergies • Rinsing gums with warm water after gumming to prevent irritation
Rectal (Plugging)	• Inserting a drug into the rectum, where it is absorbed through the bowel lining • Faster onset with a shorter duration	• **Suppository**: Insertion of drug in a solid form • **Enema**: Prepared drug solution is transferred into a syringe (**without a needle**) and inserted into the rectum	• Use water-based lubricant to insert the drug or syringe to prevent tissue damage • Encourage a test dose • Delay further drug use until after the effects have set in to test tolerance
Insufflation (Snorting)	• Snorting of powdered drug into nasal cavity • Faster onset than oral, usually within several minutes	**Insufflation (snorting)**: Powdered drug is divided into lines and snorted (actively drawn into nostril by inhaling) through a straw or rolled paper into the nasal cavity	• Don't share or re-use straws or paper • Clean the surface the drug will be on • Make the powder as fine as possible • Place the straw high up the nostril and alternate nostrils • Rinse nostrils with lukewarm water after using • Apply hydrating lotion or oil to nostrils in between use • If bleeding occurs, take a break

Route	Description	Methods	Safer use practices
Inhalation	• Inhaling a substance into the lungs • Fast onset and shorter duration	• **Huffing**: inhaling aerosolized solvents like paint thinners, butane, glues, etc. • **Vaping**: heating a liquid solution in a vaporizer to inhale the vapor that is created • **Smoking**: burning a substance to inhale the smoke created	• Use a heat-resistant and shatterproof glass pipe (do not use broken or cracked pipes) • Use personal mouthpieces to prevent injury and the spread of infection (ideally, avoid sharing pipes altogether) • Clean all equipment and hands prior to use • Inhale slowly to prevent burning and exhale immediately • Drink water, use lip balm, and chew gum to keep the mouth moist • Store vaping liquid and other smoking products in a safe secure place
Injection	• Injection of a substance into the body using a needle and syringe • Highest risk route • Fastest onset	• **Subcutaneous (SC)**: injection into the fat tissue under the skin; produces the slowest effects (approx. 15+ minutes onset) • **Intramuscular (IM)**: injection into the muscle tissue; produces a slightly faster onset than SC with a longer effect. • **Intravenous (IV)**: Injection into a vein; produces immediate effects.	• Wash hands before and after injecting • Disinfect skin with alcohol swab prior to injection but not after • Use a new syringe after unsuccessful injection attempts to avoid damage to skin and reduce infection risk • Filter drug solution when drawing up into syringe • Sterile supplies used to prepare and inject are for one-time use and should not be shared • Dispose of sharps and injection-related litter into a sharps or biohazard container • Do not use SC or IM route with crystal meth as it is will irritate the tissue and can cause infection • For IV route, ideal sites are arms and legs; high risk sites are the neck, groin and face

Appendix 2: Timeline of naloxone distribution in Alberta

Table 3. Timeline of naloxone kit distribution in Alberta

Year	Event
2005	First naloxone kit dispensing program began in Alberta.
2014	Take Home Naloxone (THN) Committee was formed in Calgary.
2015	Fentanyl Action Committee formed, later the Opioid Response Team (included partners from health, law enforcement, Indigenous representative and various municipalities).
	June: 1-year grant from Alberta Health was given to Alberta Community Council on HIV (ACCH) to roll out a THN program in ACCH agencies throughout Alberta.
	October – December: AHS launched provincial Emergency Coordination Centre and Zone Emergency Operations Centres. In order to provide a wider distribution of naloxone kits, the AHS THN program was implemented on December 23, 2015.
	December: Ministerial Order (MO) was written to allow Registered Nurses and Registered Psychiatric Nurses to prescribe and dispense naloxone kits and Emergency Medical Technicians and Emergency Medical Responders to administer, dispense, and distribute naloxone kits.
2016	**March**: Health Canada removed naloxone from the prescription drug list allowing it to be used without a prescription outside of a hospital setting.
	May: Government of Alberta listed naloxone as a Schedule 2 drug allowing access to naloxone from a pharmacist without a prescription.
	June: Naloxone added to the open benefit on the drug list under the Non-Insured Health Benefits (NIHB) program for First Nations and Inuit Health.
2017	**February**: Alberta College of Pharmacists unscheduled naloxone in Alberta, allowing for naloxone to be distributed outside of pharmacies by community agencies. MO was signed allowing medical first responders/firefighters to administer and carry naloxone kits.
	May: Alberta Minister's Opioid Emergency Response Commission (MOERC) established with mandate to make recommendations to Alberta Health in relation to the opioid crisis.
	July: Health Canada approved purchase of nasal naloxone spray in Canada without a prescription.
	November: AHS expanded naloxone kit distribution with directive for all community programs.

Year	Event
2018	**January**: AHS expanded THN Program with directive for all emergency departments, urgent care centres, and community sites to distribute kits.
	February: MOERC recommendations released. Recommendations focused on supporting continuation and expansion of THN Program and renamed program the Community Based Naloxone (CBN) Program in an effort to decrease stigma and increase accessibility.
	April: Nasal naloxone added to NIHB program. AHS expanded naloxone kit distribution to all acute care facilities.
	May: Harm Reduction Services team formed, focusing on the enhancing the CBN Program.

Appendix 3: Naloxone formulations

There are different formulations and different delivery methods of naloxone available in Canada.

Table 4. Naloxone formulations[1]

Formulations	Available strengths	Route of administration
Injectable	0.4mg/1mL 1mg/1mL	Intramuscular Subcutaneous
Nasal spray	2mg/1mL 4mg/1mL	Intranasal

Injectable naloxone has been approved for use in Canada for over 40 years. In March 2016, Health Canada amended its prescription drug list to allow for the emergency use of naloxone for opioid poisoning outside hospital settings. In October 2016, Health Canada approved the use of nasal naloxone hydrochloride spray.

Health Canada has currently approved two different formulas of naloxone for use in community settings:

- Injectable naloxone for intramuscular and subcutaneous administration.
- Naloxone hydrochloride nasal spray for intranasal administration.

Alberta's Community Based Naloxone Program does not provide intranasal naloxone spray. The effectiveness of nasal naloxone has not been assessed in individuals with abnormal nasal conditions such as septal abnormalities, nasal mucus, trauma, epistaxis, and other intranasal pathology.

On March 27, 2018, Canada's Non-Insured Health Benefits (NIHB)[2] program began providing coverage for NARCAN™ Nasal Spray for personal use and to protect any person who may be at risk of poisoning. In March 2019, Veterans Affairs Canada approved coverage for NARCAN™ Nasal Spray. More information on NARCAN™ Nasal Spray can be found at www.narcannasalspray.ca.

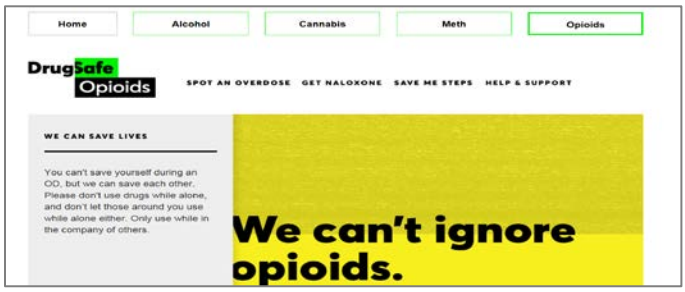
Section references

1. CADTH. CADTH response report: summary with critical appraisal. Intranasal and intramuscular naloxone for opioid overdose in the pre-hospital setting: a review of comparative clinical and cost-effectiveness, and guidelines. https://www.cadth.ca/sites/default/files/pdf/htis/2017/RC0865%20Intranasal%20Naloxone%20Update%20Final.pdf. Published March 16, 2017.
2. Veterans Affairs Canada. VAC Program of Choice 10 – Prescription Drugs Important Information Regarding Narcan® Nasal Spray All Provinces. http://pub.medavie.bluecross.ca/pub/0001/PublicDocuments/VAC%20POC%2010%20Narcan%20Nasal%20Spray%20Bulletin%20EN%20Final.pdf. Published March 2019.

Appendix 4: Additional resources

Websites

www.drugsafe.ca is a website for public information on safer substance use, support, recovery-oriented services, and tools and resources for community members.



www.ahs.ca/naloxone is the official website for the Community Based Naloxone Program, where resources for distributions sites, kit providers and for training are available to the public. Frequently asked questions, printable tools, pertinent drug information, videos and an elearning module can be found here to support distribution of naloxone kits, and safer substance use and opioid poisoning response.

Stories of people with lived experience

- Awareness resources for opioids, Government of Canada
- Audio series on opioids: In Plain Sight, Government of Canada
- See Beyond. See the Lives., Moms Stop the Harm
- Patient and Family Digital Stories, AHS
- Opioid Awareness & Education, City of Leduc
- Everyone is Impacted, City of Grande Prairie
- Harm Reduction Video Shorts, First Nations Health Authority