The Opioid Epidemic: The Physician's Responsibility Pain Management Options

Department of Anesthesiology & Perioperative Care
Division of Pain Medicine

UC Irvine Health
School of Medicine

- No conflicts of interest.

Learning Objectives

- A broad understanding of the scope and impact of the current opioid epidemic
- The ability to readily identify risk factors for opioid related adverse events
- Competency in safe opioid prescribing habits
- Introduction to non-opioid multimodal options available for the management of pain

Healers or Dealers?

DEA MISSION

- To prevent, detect, and investigate the diversion of controlled substances from legitimate sources

while

- ensuring an adequate and uninterrupted supply for legitimate medical and scientific purposes.

O.C. doctor gets 11 years in federal prison for selling prescriptions

Alvin Ming-Czech Yee of Mission Viejo often met with patients at Starbucks coff pleaded guilty in April.

October 17, 2013 | By Hailey Branson-Potts

An Orange County doctor who often saw patients at Starbucks coffeehouses was sentenced Thursday to 11 years in federal prison for selling prescriptions for highly abused medications to patients with no legitimate need for them.

Authorities said Orange County doctor Alvin M brazenly... (Liz O. Baylen / Los Angeles...)

"You abused the position," U.S. District Judge Andrew J. Guilford told Alvin Ming-Czech Yee before sentencing him. "People came to you for healing, and they came away worse for the experience."

Yee, 44, of Mission Viejo, pleaded guilty in April to seven counts of illegal distribution of a controlled substance by a practitioner.

Although Yee had reached a plea agreement with prosecutors and agreed to serve eight to 10 prison, the judge sentenced him to a longer term, saying Yee took advantage of a "position of authority" and that the sentence needed to send a message to other doctors.

The Opioid Crisis, Already Serious, Has Intensified During Coronavirus Pandemic

Overdose deaths rise as job losses and stress from Covid-19 destabilize people struggling with addiction

Mary Kief with a photo of her son, Benjamin Kief, who died of an opioid overdose in April while in his car in West Chester, Pa. **CREDIT:** HANNAH YOON FOR THE WALL STREET JOURNAL

MEDICAL NECESSITY

- An Rx must be issued “in accordance with a standard of medical practice generally recognized and accepted in the United States.”

- Which is a greater cause of death in the United States?
- A) Traffic Related Deaths
- B) Opioids

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- **B) Opioids**

The Opioid Pendulum

Opiophobia

Balance of Addiction Medicine and Pain Management Principles[1]

Opiophilia

WHO Analgesic 'Ladder'

Severe	**Step 3** Strong opioids (*e.g.*, morphine) with or without non-opioids
Moderate	**Step 2** Weak opioids (*e.g.*, codeine) with or without non-opioids
Mild	**Step 1** Non-opioids (*e.g.*, NSAIDs, acetaminophen = paracetamol)

ONE MECHANISM OF OPIOID ACTION:

When an opioid binds to an opioid receptor in the membrane of a neuron (1), calcium channels close, blocking positively charged calcium ions from entering the cell (2). In addition, cAMP levels decrease and potassium channels open (3), allowing positive potassium ions to exit the cell. These events hyperpolarize the cell, increasing the charge difference between the cell's interior and the extracellular environment and making the neuron less likely to fire an action potential. Quieting neurons along pain pathways with opioids dampens the transmission of pain signals and results in analgesia.

NEURON IN THE ABSENCE OF AN OPIOID

At a normal resting potential, the neuron is primed to fire an action potential.

Ca^{2+} channel open

K^{+} channel closed

cAMP

Opioid receptor

NEURON IN THE PRESENCE OF AN OPIOID

The hyperpolarized neuron is less likely to fire an action potential.

Ca^{2+} channel closed (2)

K+ channel open (3)

(1)

Opioid

cAMP levels decrease

Nerve terminals in nucleus accumbens

Mu (μ) opioid receptor

2

GABA

GABA receptor

1

3

Morphine

Dopamine

Dopamine receptor

Post-synaptic membrane

THE HIGH:

Morphine's activation of the opioid receptor in neurons of the nucleus accumbens in the brain (1) reigns in the release of the neurotransmitter γ-aminobutyric acid (GABA) (2). This drop in GABA causes a neighboring cell to expel dopamine (3), which in turn elicits the euphoria associated with opioids.

Positive Symptoms

Negative Symptoms

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- Abuse – nonmedical use
- Misuse – medical use
- Dependence – withdrawal
- Tolerance – escalating doses
- Diversion – unauthorized re-routing
- Addiction – compulsive behavior; harmful consequences
  - Replaced by Opioid Use Disorder
- Under-treated pain
  - Historically called “Pseudo-addiction”

Understanding the Opioid “Epidemic”

- Since 1999, the rate of overdose deaths involving opioids has nearly quadrupled.
- Since 1999, the amount of prescription opioids sold in the U.S. has also nearly quadrupled.
- NO overall change in the amount of pain that Americans report.

- A large percentage of drug related overdose deaths in the United States are categorized as accidental (74%), while 17% are intentional in nature.
- Lethal combination of benzodiazepines and opioids is the leading cause of overdose in the nation.
- As many as one in four patients currently receiving long-term opioid therapy in a primary care setting struggles with opioid addiction.

- The United States consumes 75 percent of the world's narcotic pain medication-despite only comprising 5 percent of the world's population.

- In 150 countries, morphine and opioids are not available at all.
- In India, except in the state of Kerala, physicians have to procure five licenses from different government bodies in order to prescribe just one milligram of morphine.

Risk Factors for Prescription Opioid Abuse and Overdose

Risk Factors for Prescription Opioid Pain Reliever Abuse and Overdose

Obtaining overlapping prescriptions from multiple providers and pharmacies.

Taking high daily dosages of prescription opioid pain relievers.

Having mental illness or a history of alcohol or other substance abuse.

Living in rural areas and having low income.

- Sleep Disorders/OSA
- Polypharmacy (especially benzodiazepines)
- Renal/Hepatic Failure
- Elderly

Heroin use and addiction

- Heroin-related deaths more than tripled since 2000.
- **Among new heroin users, approximately three out of four report abusing prescription opioids prior to using heroin.**
- The motivation to switch from pain relievers to heroin is often driven by economics, as heroin is about 10 percent of the cost of an equivalent dose of a prescription narcotic.

Triple Wave

Overdose Deaths Rates per Age Adjusted 100,000

10
8
6
4
2

Synthetic opioids (e.g. Fentanyl)

Natural and semisynthetic opioids

Heroin

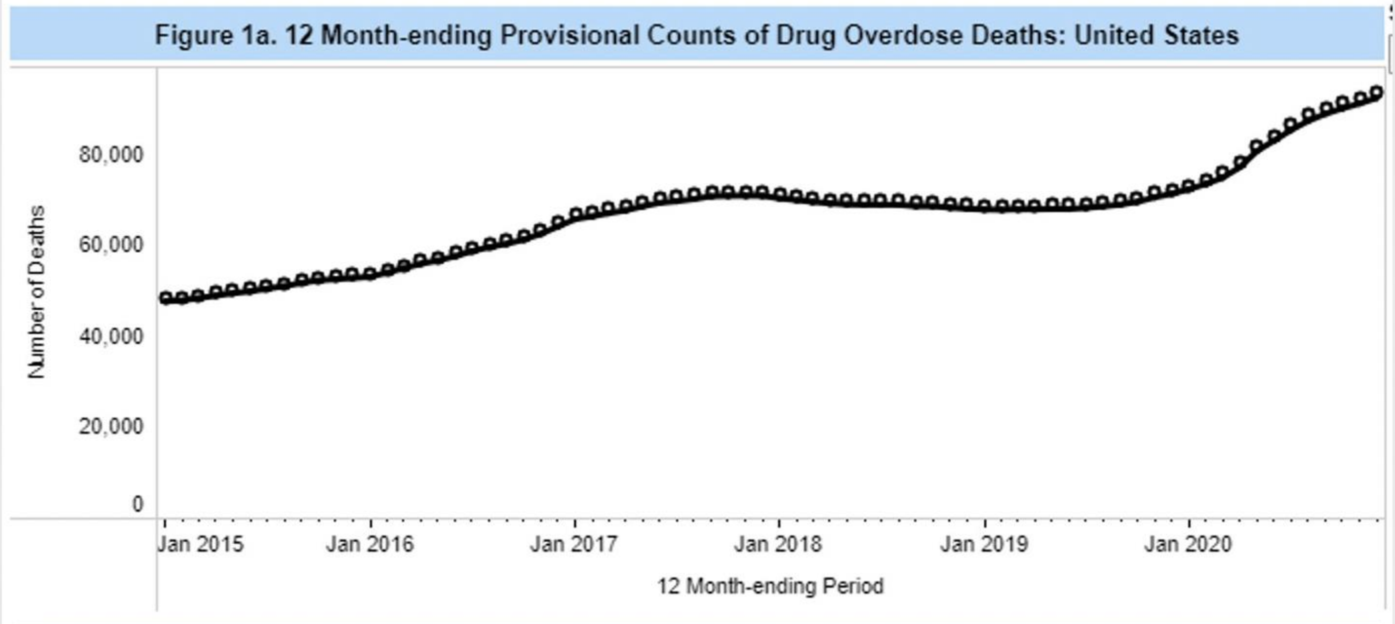
Fig. 1. Opioid Overdose Deaths by Type of Opioid.

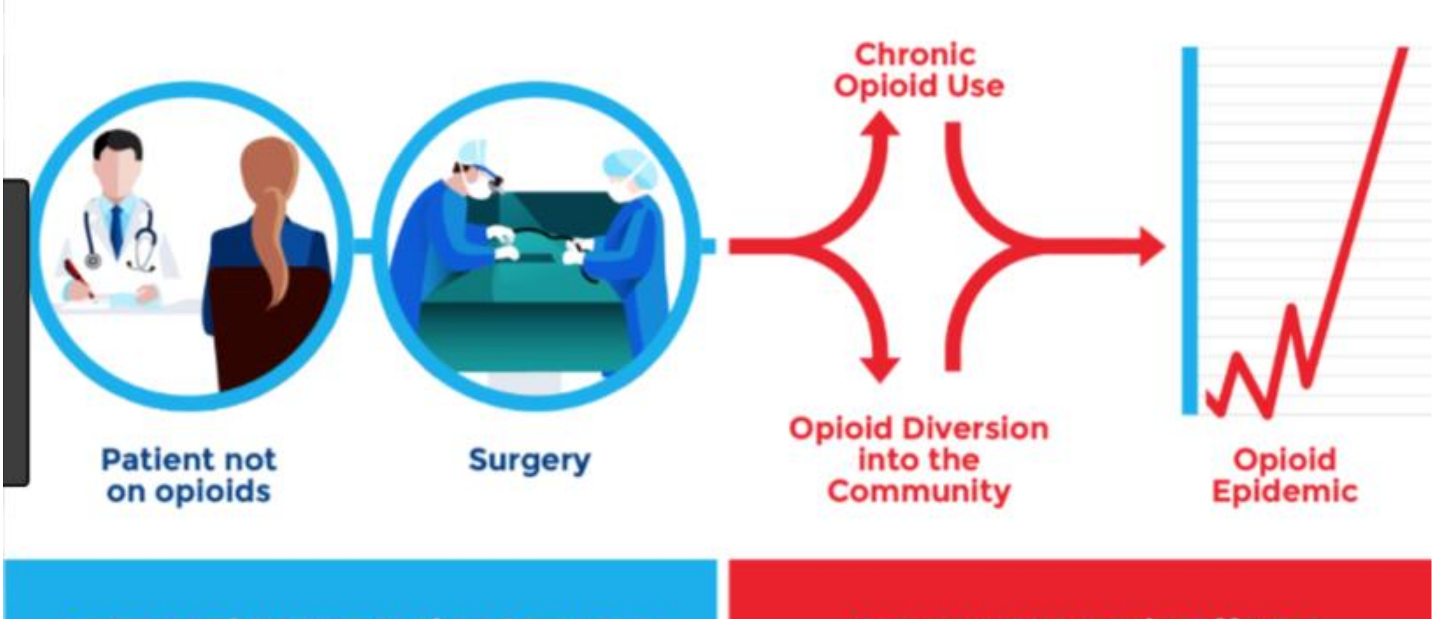
Published in The International journal on drug policy 2019

The triple wave epidemic: Supply and demand drivers of the US opioid overdose crisis.

D. Ciccarone

CDC




Preventing Chronic Opioid Use and Abuse Before it Starts
Chronic Opioid Use
Patient not on opioids
Surgery
Opioid Diversion into the Community
Opioid Epidemic
Proposed Preventative Strategy
Current Strategic Efforts

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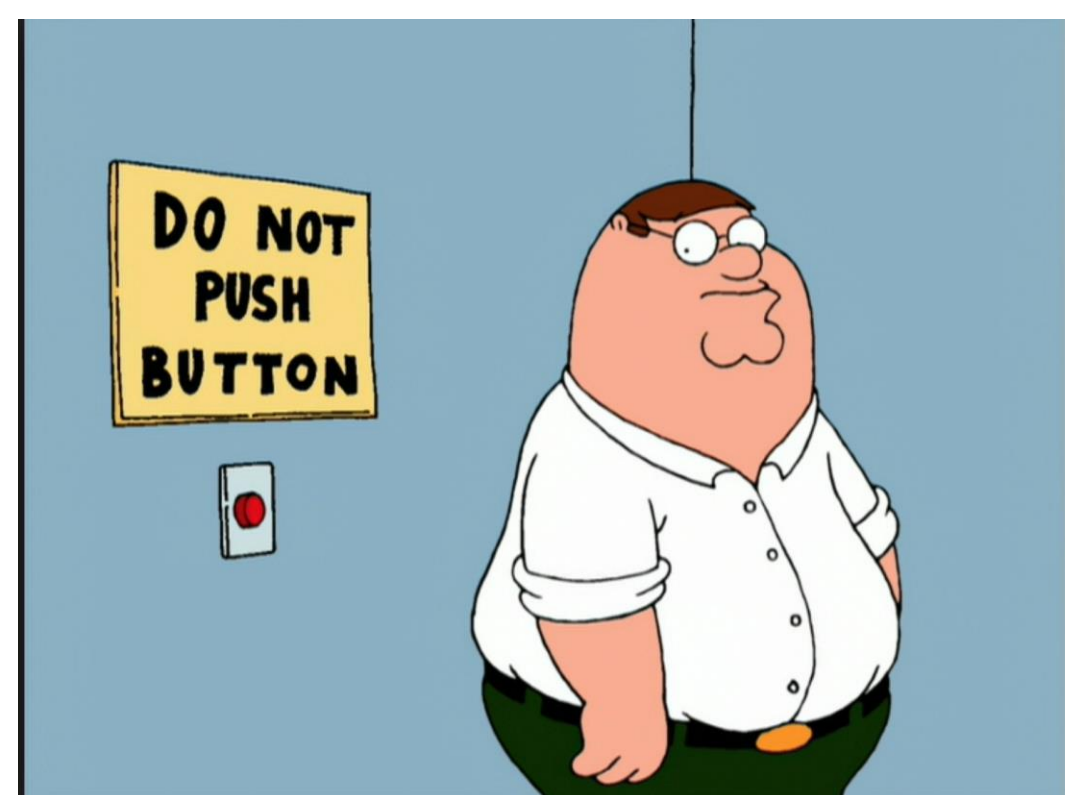
DO NOT
PUSH
BUTTON

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Spectrum of Risk of Addiction or Aberrant Behavior

<1% — ~ 45%

LOW

Short-term exposure to opioids in nonaddicts

Porter and Jick

HIGH

Long-term exposure to opioids in addicts

Dunbar and Katz

Where is your patient?

Opioid Side Effects

- Tolerance
- Physical dependence
- Addiction
- Increased sensitivity to pain (hyperalgesia)
- Constipation
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Confusion
- Depression
- Low testosterone/decreased libido
- Itching and sweating
- Immune Suppression/Cancer?

CDC Guidelines

"Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed"

- "…should carefully reassess evidence of individual benefits and risks when considering increasing dosage to ≥50 morphine milligram equivalents (MME)/day, and should avoid increasing dosage to ≥90 MME/day or carefully justify a decision to titrate dosage to ≥90 MME/day"

- CDC recommendations for prescribing opioids for chronic pain outside of active cancer, palliative, and end-of-life care

2022 Updates

Changes include:

- The CDC would no longer suggest trying to limit opioid treatment for acute pain to three days.
- The agency would drop the specific recommendation that doctors avoid increasing dosage to a level equivalent to 90 milligrams of morphine per day.
- The CDC would say doctors should consider having patients undergo urine tests to see if they are using other controlled and illicit drugs, but no longer would call on having such testing done annually.
- For patients receiving higher doses of opioids, the CDC would urge doctors to not abruptly halt treatment unless there are indications of a life-threatening danger. The agency would offer suggestions about how to taper patients off the drugs.

EVIDENCE ABOUT OPIOID THERAPY

- Benefits of long-term opioid therapy for chronic pain not well supported by evidence.
- Short-term benefits small to moderate for pain; inconsistent for function.
- Insufficient evidence for long-term benefits in low back pain, headache, and fibromyalgia.

When patient satisfaction is bad medicine

- Initial first step is to acknowledge a potential conflict in patient-physician interactions (patient satisfaction vs controlled substance prescribing).
- Prior to the 1990s opioids rarely prescribed outside of oncological or surgical care (just wouldn’t see it for chronic musculoskeletal).
- Has pain as the fifth vital sign had unintended consequences?
  - Started in 1999

NEW HCAHPS Questionnaire

- Joint Commission and CMS have changed pain reporting measures, as a result of the opioid epidemic
- Aware of the "5th vital sign"– it's repercussions
- New Criteria: ABOUT COMMUNICATION OF PAIN
  - 1. During this hospital stay, did you have any pain?
  - 2. During this hospital stay, how often did hospital staff talk with you about how much pain you had?
  - 3. During this hospital stay, how often did hospital staff talk with you about how to treat your pain?

- Key Word is **FUNCTION**!

- 10/10 pain but eating, watching TV, doing Physical Therapy, sleeping VS 1/10 pain but not meeting discharge milestones, cannot move.
- Need to improve how we narrate our care to the patient.

2019: CDC ADVISES AGAINST MISAPPLICATION OF THE GUIDELINE

- Examples of misapplication include applying the guidelines to patients in active cancer treatment, patients with acute sickle crises, or post surgical pain
- The recommendation does not suggest abrupt discontinuation of opioids already prescribed at higher doses
- Does not apply for patients on medication-assisted treatment for opioid use disorder

Inpatient: Routes of administration

- Oral: long acting, short acting
- IV push
- PCA
- Fentanyl patch
- Epidural (managed by Acute Pain Service)
  - Titration, site, pump setting
  - Coagulation
- Intrathecal pump (interrogation required for medication reconciliation, consult Acute Pain Service)

Documentation is Key

The Four "A's" of Pain Treatment Outcomes

- Analgesia (pain relief)
- Activities of daily living (psychosocial functioning)
- Adverse effects (side effects)
- Aberrant drug taking (addiction-related outcomes)

Essentials of Prescribing

- Opioid Contract
- Opioid Consent
- Ongoing Functional Assessment
- Ongoing 4 A's assessment
- Baseline and at a minimum annual urine drug screen
- Do not prescribe to an active abuser in an uncontrolled setting
- Document, Document, Document
- Remember, "the patient was dishonest" is not an effective defense

Urine Drug Screen

Drug	Time
Alcohol	7-12 hours
Amphetamine	48 hour
Benzodiazepine	3 days (short acting)
	30 days (long acting)
Cocaine	2-4 days
THC	3 days (single use)
	10-15 days (daily use)
	> 30 days (long term use)
Codeine	48 hours
Heroine	48 hours
Methadone	3 days
Oxycodone	2-4 days
Hydromorphone	2-4 days
PCP	8 days

Common metabolic pathways for opiates

heroin → 6-acetylmorphine → morphine

morphine-containing drugs or poppy seeds → morphine

codeine → morphine (< 55%)

morphine → hydromorphone (< 25%)

codeine → hydrocodone (< 40%)

hydrocodone → hydromorphone (< 30%)

Prescription Drug Monitoring Programs: IT'S THE LAW!

STATE OF CALIFORNIA
DEPARTMENT OF JUSTICE

This system is restricted to authorized users for legitimate law enforcement and regulatory purposes. There is no expectation of privacy on this system as it is being audited and monitored.

The unauthorized access, use or modification of this system or the data contained therein or in transit to/from, is prohibited by law and may be reported to law enforcement by system personnel.

Warning: Authorized Users Only

User ID

Password

LOGIN

Forgot your Password?

Forgot your ID?

CURES Mandatory Consultation

As of October 2, 2018

1. A physician must check CURES and run a Patient Activity Report (PAR) the first time a Schedule II-IV controlled substance is prescribed, ordered or administered.
2. The PAR must be run within 24-hours, or the previous business day.
3. A physician must check CURES at least every 4 months if use of the controlled substance continues.

AVOID THE CRIME

CURES EVERYTIME

“streetRx”

streetRx latest street prices for prescription drugs

username | login | Register | Blog | Contact

Submissions are anonymous

DID YOU GET a good deal?

Name of drug*
City | State*
$ Price*
Continue

See what OTHERS paid

e.g. dilaudid california | Search

Show me: All | Most Popular | Best Price

Map | Satellite

Latest prices

Drug	Location	Price	Date	Rating
Percocet, 10/325mg	Tennessee	$5	Aug 15	Rate: $ $ $ $ $
Adderall XR, 10mg pill	Portland, Oregon	$3	Aug 15	Rate: $ $ $ $ $
OxyContin (new OP, hard to crush), 10mg pill	Georgetown, South Carolina	$15	Aug 15	Rate: $ $ $ $ $
Xanax, 2mg pill	Detroit, Michigan	$5	Aug 15	Rate: $ $ $ $ $
Adderall, 30mg pill	Aurora, Illinois	$5	Aug 15	Rate: $ $ $ $ $
OxyContin (new OP, hard to crush), 20mg pill	Columbus, Ohio	$10	Aug 15	Rate: $ $ $ $ $

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StreetRx displays user-submitted information on the latest street prices for prescription drugs. StreetRx necessarily relies on user-submitted information; data should be interpreted accordingly. All submissions are anonymous. StreetRx is not affiliated with any government or law enforcement agency.
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External resources: Find Treatment | Overdose Prevention | Safe Pain Management | Medication Storage and Disposal | Return Unused Medications

Street Value of Drugs

- Darvocet® 100 mg: $0.50
- Tylenol® #3: $2-3
- Vicodin®: $6-8
- Percocet®: $6-8
- Demerol® 100 mg: $10
- Morphine 30 mg: $15
- Dilaudid® 4 mg: $48
- OxyContin®: $.50 -1.00 per mg
- Fentanyl patch: $1-2 per mcg
- Methadone 10 mg: $5-10
- Actiq lozenges® 200, 400 mcg: $20.00
- Ativan® 2 mg: $2-3
- Xanax® 1 mg: $5-7
- Valium® 10 mg: $4-6
- Serax® 30 mg: $0.50
- Fiorinal® / butalbital: $3-5
- Ritalin® 10 mg: $10-12
- Soma®: $3-4

Naloxone Kits

- Providing naloxone kits to laypersons reduces overdose deaths, is safe, and is cost-effective.
- U.S. and international health organizations starting to recommend providing naloxone kits to laypersons who might witness an opioid overdose; to patients in substance use treatment programs; to persons leaving prison and jail; and as a component of responsible opioid prescribing.
- Intranasal and injectable forms.

Naloxone must be offered

Approved September 10, 2018

1. When prescribing opioids, the prescriber shall offer a prescription of naloxone to a patient if:

- *The prescription daily dose is > to 90 morphine milligram equivalents*
- *An opioid is prescribed with a benzodiazepine*
- *The patient has an increased risk for overdose*

2. When prescribing opioids, the prescriber shall provide education on overdose prevention and the use of naloxone to the following individuals:

- *Patient*
- *One or more persons designated by the patient*

How to give naloxone:

There are 4 common naloxone products. Follow the instructions for the type you have.

Nasal spray

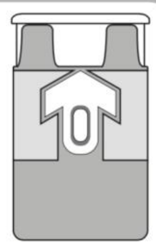
This nasal spray needs no assembly and can be sprayed up one nostril by pushing the plunger.

Nozzle

Plunger

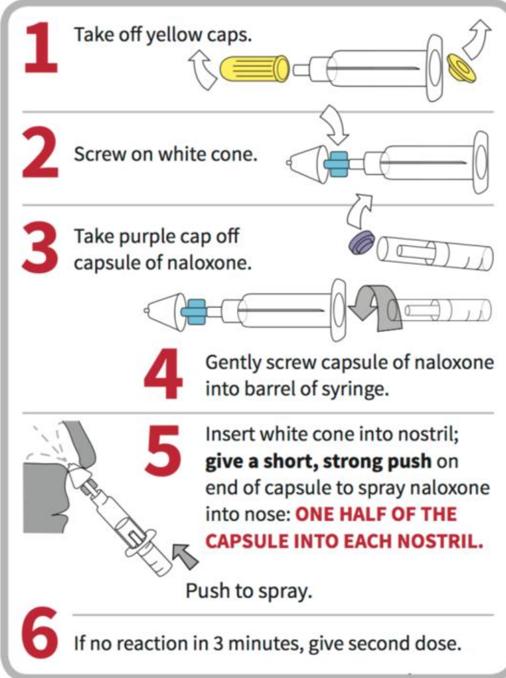
Auto-injector

The naloxone auto-injector needs no assembly and can be injected into the outer thigh, even through clothing. It contains a speaker that provides step-by-step instructions.



Nasal spray with assembly

This requires assembly. Follow the instructions below.



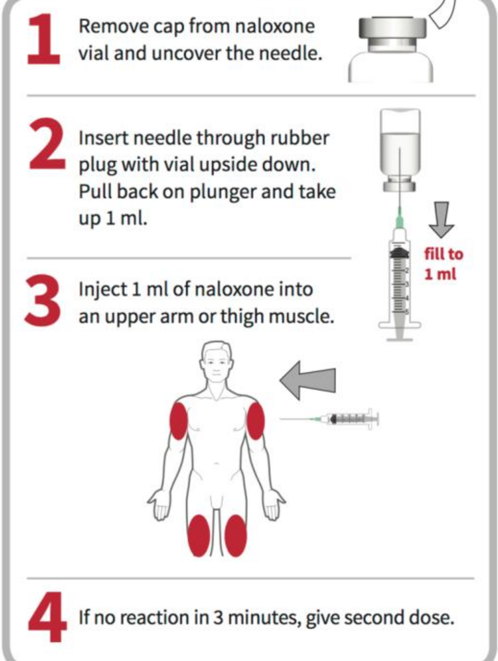
1. Take off yellow caps.
2. Screw on white cone.
3. Take purple cap off capsule of naloxone.
4. Gently screw capsule of naloxone into barrel of syringe.
5. Insert white cone into nostril; **give a short, strong push** on end of capsule to spray naloxone into nose: **ONE HALF OF THE CAPSULE INTO EACH NOSTRIL.**

Push to spray.

6. If no reaction in 3 minutes, give second dose.

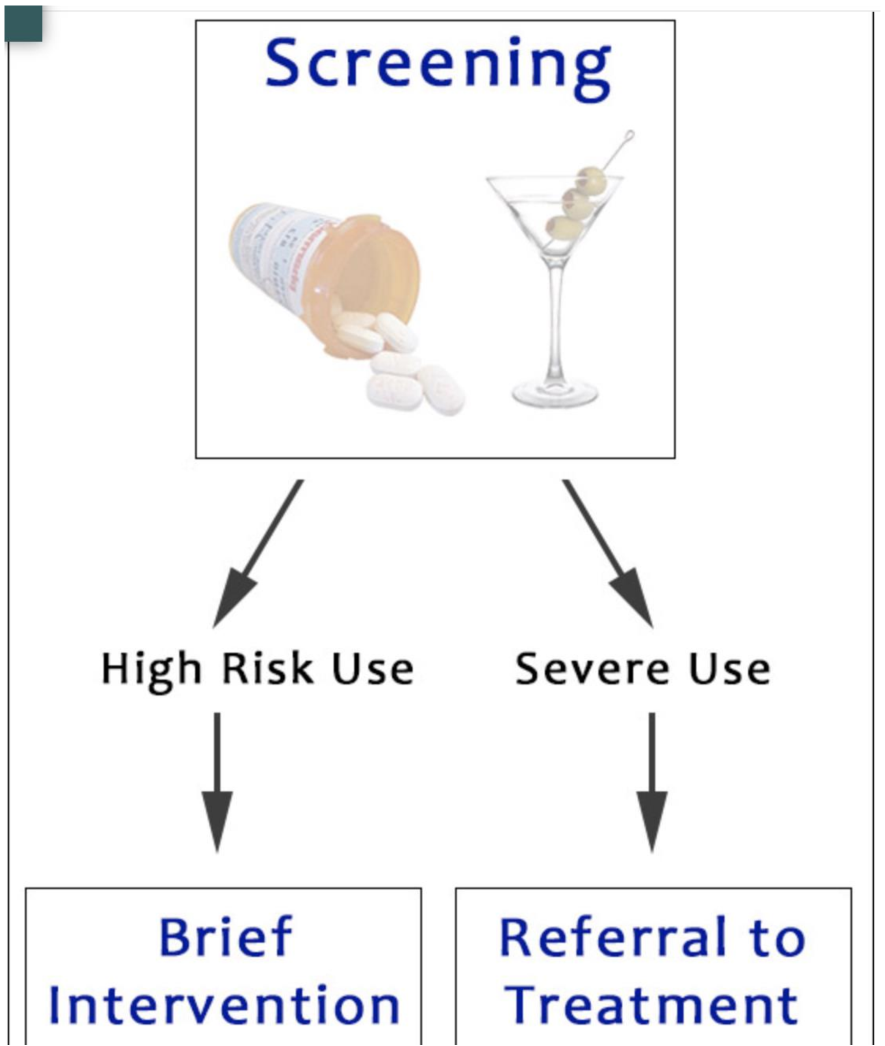
Injectable naloxone

This requires assembly. Follow the instructions below.

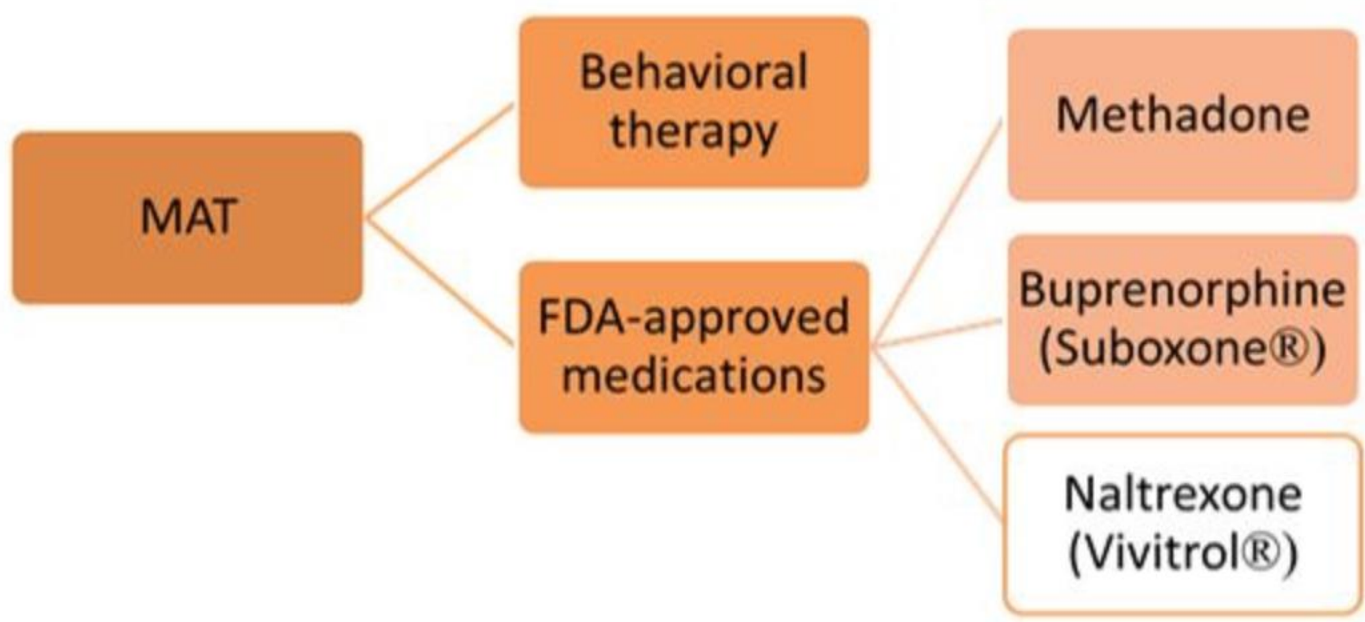


1. Remove cap from naloxone vial and uncover the needle.
2. Insert needle through rubber plug with vial upside down. Pull back on plunger and take up 1 ml.
3. Inject 1 ml of naloxone into an upper arm or thigh muscle.
4. If no reaction in 3 minutes, give second dose.

SBIRT



"MAT" or "MOUD"



Multimodal Pain Management

Adjunctive Medications

- <u>Membrane Stabilizers</u>
  - Gabapentin (Neurontin)
  - Pregabalin (Lyrica)
- <u>Muscle Relaxants</u>
  - Baclofen
  - Tizanidine (Zanaflex)
  - Cyclobenzaprine (Flexeril)
  - Methocarbamol (Robaxin) (IV FORM)
  - Diazepam (Valium)

Adjunctive Medications

- <u>Antidepressants</u>
  - TCA class (amitriptyline, nortriptyline)
  - SNRI (duloxetine)
- <u>Benzodiazepines</u>
  - Valium (Diazepam)
  - Lorazepam (Ativan)
  - Clonazepam (Klonopin)

Adjunctive Medications

- <u>Topicals</u>
  - Lidoderm Patch/Cream
  - Diclofenac Gel/Patch
  - Capsaicin
  - CBD Oil
- <u>Other Modalities</u>
  - Ketamine
  - Dexmedetomidine (Precedex)
  - Acetaminophen (Tylenol)
  - Steroids?

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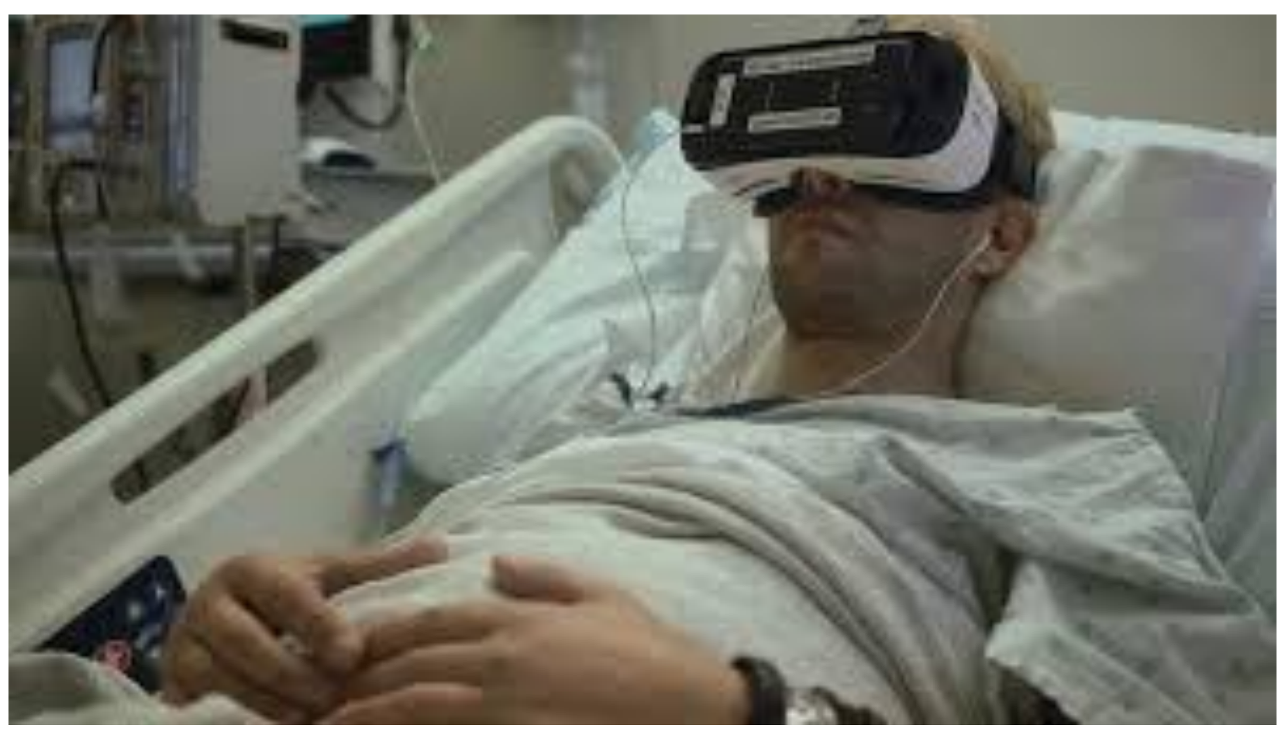
Virtual Reality



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