The Opioid Crisis, Novel Agents & Az Opioid Assistance and Referral (OAR) Line

February 24, 2019

Daniel E. Brooks MD
Medical Director; Banner Poison & Drug Information Center
Center for Toxicology and Pharmacology Education & Research; UofA College of Medicine-Phoenix

Objectives

Outline the Opioid Crisis in the US and Arizona

Review Novel Opioids

Introduce the Arizona Opioid Assistance and Referral (OAR) Line
**2017 US Poisoning Deaths: 70,237**

US rate 21.7 / 100,000 (was 6.1 in 1999)

(Japan rate ~ 4 / 100,000)

33% of deaths are from Rx medications

Death rate: > tripled over 30 years

Data obtained from CDC and Poison Control Centers

---

**Annual US Poison Center Data**

CLINICAL TOXICOLOGY

https://doi.org/10.1080/15563650.2018.1533727

NPDS REPORT 2017


David D. Gummin MD\textsuperscript{a, b}, James B. Mowry PharmD\textsuperscript{c}, Daniel A. Spyker PhD, MD\textsuperscript{d, e}, Daniel E. Brooks MD\textsuperscript{f}, Krista M. Osterthaler MPH\textsuperscript{g} and William Banner MD, PhD\textsuperscript{h}

\textsuperscript{a}Wisconsin Poison Center, Milwaukee, WI, USA; \textsuperscript{b}Department of Emergency Medicine, Section of Medical Toxicology, Medical College of Wisconsin, Milwaukee, WI, USA; \textsuperscript{c}Indiana Poison Center, Indiana University Health, Indianapolis, IN, USA; \textsuperscript{d}Department of Emergency Medicine, Oregon Poison Center, Oregon Health & Science University, Portland, OR, USA; \textsuperscript{e}Department of Biopharmaceutical Sciences, University of California, San Francisco, CA, USA; \textsuperscript{f}Department of Medical Toxicology, Banner University Medical Center - Phoenix, Phoenix, AZ, USA; \textsuperscript{g}American Association of Poison Control Centers, Alexandria, VA, USA; \textsuperscript{h}Oklahoma Center for Poison and Drug Information, University of Oklahoma College of Pharmacy, Oklahoma City, OK, USA
2017 NPDS Data - 35th Annual Report

2.6 million calls to US PCCs

- 2.11 million human exposures
- 51,164 animal exposures
- 435,540 information only calls

~ 1 call every 10 seconds

2.68 million follow up calls (to EDs, ICUs and pts kept/treated at home)


CDC: 2008
Rates of US Overdose Deaths

- Male
- Total
- Female

9.6% increase

Age-related US Overdose Deaths

- 25–34
- 35–44
- 45–54
- 55–64
- 65 and over
- 15–24

Deaths per 100,000 population
Age-adjusted Drug OD Deaths: 2017

Arizona Opioid Emergency Response
June 2017 to June 2018

Arizona Opioid Deaths (109% increase since 2012)
Drugs involved in verified opioid overdoses (6/2017 - 6/2018)

- Heroin
- Oxycodeone
- Benzodiazepine
- Other Rx Opiate
- Methamphetamine
- Fentanyl
- Cocaine
- Morphine
- Hydrocodone
- Methadone
- Tramadol
Drugs combinations among verified opioid overdoses (6/2017 - 6/2018)

- Heroin + Methamphetamine
- Oxycodone + Benzodiazepine
- Heroin + Benzodiazepine
- Methamphetamine + Oxycodone
- Oxycodone + Heroin

Pre-existing conditions for verified opioid overdoses (6/2017 - 6/2018)

- Chronic pain
- Depression
- History of substance abuse
- Anxiety
- Bipolar disorder
- Suicidal ideation
- Diabetes
- Cancer
- COPD
- PTSD
- Schizophrenia or schizoaffective
### Opioid Deaths per 1,000 Encounters by Primary Care Area (PCA), 2016

![Map of Opioid Deaths](image)

### Table: Number of Opioid-Related Encounters and Estimated Costs by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Opioid-Related Encounters</th>
<th>Estimated Costs for Opioid-Related Encounters</th>
<th>Net Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>18,592</td>
<td>$143,639,592</td>
<td>N/A</td>
</tr>
<tr>
<td>2009</td>
<td>20,365</td>
<td>$151,535,815</td>
<td>5%</td>
</tr>
<tr>
<td>2010</td>
<td>23,437</td>
<td>$161,172,385</td>
<td>6%</td>
</tr>
<tr>
<td>2011</td>
<td>30,865</td>
<td>$198,374,505</td>
<td>23%</td>
</tr>
<tr>
<td>2012</td>
<td>32,751</td>
<td>$226,127,368</td>
<td>14%</td>
</tr>
<tr>
<td>2013</td>
<td>32,684</td>
<td>$231,131,469</td>
<td>2%</td>
</tr>
<tr>
<td>2014</td>
<td>36,459</td>
<td>$260,725,158</td>
<td>13%</td>
</tr>
<tr>
<td>2015</td>
<td>41,434</td>
<td>$305,408,447</td>
<td>17%</td>
</tr>
<tr>
<td>2016</td>
<td>51,532</td>
<td>$402,596,263</td>
<td>32%</td>
</tr>
<tr>
<td>2017</td>
<td>51,473</td>
<td>$431,054,043</td>
<td>7%</td>
</tr>
</tbody>
</table>
Phx Patient

18 YOM found comatose with minimal respirations.

BP - 78/50  HR - 88  RR - 6  Pulse Ox - 68% RA

Atraumatic

Pupils = 1 mm

Chest - diminished effort / lungs sounds

Phx Patient

Paramedics: 100% O₂, gave naloxone 4mg IV (total; minimal response), transferred to PCH.

In the ED: intubated, 6mg naloxone (no effect);
  CT head = normal.

In the PICU: slow neurologic improvement.
  MR brain = diffuse ischemic injuries.

Hospital Day 12: transferred to rehab with ataxia,
  slow mentation and speech.
**Phx Patient**

Friends reported that he had snorted “Mexican Percocet.”

ED drug screen was negative for opioids.

Comprehensive drug test (Poison Center) was positive for fentanyl.

State Lab testing of the pills showed oxycodone and fentanyl.

---

**Opiates and Opioids**

**Opiates**

Naturally occurring plant alkaloids (poppy)
Morphine, Codeine and Heroin
Product effects at opiate receptors

**Opioids**

Synthetic substances (fentanyl, hydrocodone)
Similar actions at opiate receptors
Opioids = Opiates

Opiate Structures
(substances from plants)

Morphine
Heroin
Codeine
Synthetic Opiate Structures

Fentanyl

Methadone

Propoxyphene

Morphine Milligram Equivalent (MMEs)

<table>
<thead>
<tr>
<th>OPIOID</th>
<th>CONVERSION FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codeine</td>
<td>0.15</td>
</tr>
<tr>
<td>Fentanyl transdermal (in mcg/hr)</td>
<td>2.4</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>1</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>4</td>
</tr>
<tr>
<td>Methadone</td>
<td></td>
</tr>
<tr>
<td>1-20 mg/day</td>
<td>4</td>
</tr>
<tr>
<td>21-40 mg/day</td>
<td>8</td>
</tr>
<tr>
<td>41-60 mg/day</td>
<td>10</td>
</tr>
<tr>
<td>≥ 61-80 mg/day</td>
<td>12</td>
</tr>
<tr>
<td>Morphine</td>
<td>1</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>1.5</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>3</td>
</tr>
</tbody>
</table>

Opioid Receptors

Endogenous opioids (e.g. endorphins)

Neuro-inhibitory

Separate sub-classes

Chronic activation causes down regulation
(dependency and withdrawal)

<table>
<thead>
<tr>
<th>Opioid Type</th>
<th>Region</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta (1 and 2)</td>
<td>Brain</td>
<td>Central analgesia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Antidepressant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dependence</td>
</tr>
<tr>
<td>Kappa (1-3)</td>
<td>Brain</td>
<td>Spinal analgesia</td>
</tr>
<tr>
<td></td>
<td>Spinal Cord</td>
<td>Sedation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Miosis</td>
</tr>
<tr>
<td>Mu (1 - 3)</td>
<td>Brain</td>
<td>Central analgesia</td>
</tr>
<tr>
<td></td>
<td>Spinal Cord</td>
<td>Hypoventilation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Miosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Euphoria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GI Dysmotility</td>
</tr>
</tbody>
</table>
Opioid Clinical Effects

CNS - analgesia, euphoria, lethargy, encephalopathy

CV - mild hypotension (↓SVR) and bradycardia

Pulmonary - hypoventilation / hypopnea (CO₂ effects)

GI - acute nausea, dysmotility

Neurological - myosis, ataxia

Tolerance to Opioid Effects

CNS - analgesia, euphoria, lethargy, encephalopathy

CV - mild hypotension (↓SVR) and bradycardia

Pulmonary - hypoventilation / hypopnea (CO₂ effects)

GI - acute nausea, dysmotility

Neurological - myosis, ataxia
Opioid Toxidrome

Mental Status Depression

Hypoventilation

Miosis

Miosis not always present due to Adulterants (amphetamines, scopolamine)

Blockade of Opioid Receptor by Naloxone
Opioid Antagonists

Naloxone (Narcan®) and Nalmefene (Revex®)

Compete for binding to opioid receptors
Reversal of opioid effects

Naltrexone (Vivitrol®)

Very long acting antagonist (> 24 hrs)
Can lead to severe, prolonged withdrawal

Naloxone (Narcan)

Administered = IV, IM, IO, nasal  (not PO/ETT)

Initial Dose = 0.4 mg (4mg diluted in 10 mL)

Maximal Dose = almost all patients respond to 10 mg
(if effects are due to opioids only)

Onset of action = within 30 seconds

Duration of Effect = ~ 45 minutes
Treating Opiate Withdrawal

It is not life-threatening

Involves pain, depression and anxiety

Must address acute pain issues

Opiate Withdrawal

Signs and Symptoms

- Nausea
- Vomiting
- Pain/Discomfort
- Anxiety
- Diarrhea
- Yawning
- Piloerection
- Insomnia
# Clinical Opiate Withdrawal Scale (COWS)

## Opioid Use Disorder / Withdrawal Treatments

### Medication Assisted Treatments (MAT)
- **Methadone**
- **Buprenorphine**

### Antagonists - Vivitrol®

### Symptom Control - Loperamide, Lofexidine/Clonidine
Novel Opiates - Nothing New

Adulteration and drug purity varies based on supply and climate

Overall increased purity of drugs being sold on the street / internet

1980s - China white (α methylfentanyl)

~2000 (and again 2016) - Carfentanil

2006 - Get High or Die Trying (heroin/fentanyl)

2010 - Desomorphine

2017 - m30s (‘Mexican Percocets’)

2019 - Fentanyl contamination of methamphetamine / alprazolam (xanax; z-bars)
Heroin ‘Contaminated’ with Fentanyl

Heroin’s purity varies greatly

Usually adulterated to increase product amount and profit

Recent, cheap manufacturing techniques for fentanyl have resulted in illicit supplies
**m30**

Pharmaceutical medications:

- Oxycodone 30mg
- Oxycodone 30mg

Illicit medications?

**Phoenix m30s**

Associated with 32 recent deaths (Phx n=18)

Started ~ March 2017

Thought to originate in Mexico

Autopsy all found fentanyl
**ANALYTICAL RESULTS**

<table>
<thead>
<tr>
<th>Lab #: 87320</th>
<th><strong>ANALYTICAL RESULTS</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ANALYTE</th>
<th>RESULT</th>
<th>UNITS</th>
<th>PREPARED</th>
<th>ANALYZED</th>
<th>METHOD</th>
<th>MRL</th>
<th>UNITS</th>
<th>CONTAMINANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Compounds</td>
<td>See comment below</td>
<td>11/01/2017</td>
<td>11/01/2017</td>
<td>Default</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Narrative:**
Sample 87320 was a light blue colored pill labeled M on one side and 30 on the other side. The pill was sectioned, a portion crushed, then the portion was crushed sample dissolved in solvent, and analyzed using liquid chromatography coupled with high resolution mass spectrometry using modified BLS-700 method.

**Results:**
The pill was identified to contain heroin and fentanyl.

**ANALYTICAL RESULTS**

<table>
<thead>
<tr>
<th>Lab #: 87321</th>
<th><strong>ANALYTICAL RESULTS</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ANALYTE</th>
<th>RESULT</th>
<th>UNITS</th>
<th>PREPARED</th>
<th>ANALYZED</th>
<th>METHOD</th>
<th>MRL</th>
<th>UNITS</th>
<th>CONTAMINANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Compounds</td>
<td>See comment below</td>
<td>11/01/2017</td>
<td>11/01/2017</td>
<td>Default</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Narrative:**
Sample 87321 was a light blue colored pill labeled M on one side and 30 on the other side. The pill was sectioned, a portion crushed, then the portion was crushed sample dissolved in solvent, and analyzed using liquid chromatography coupled with high resolution mass spectrometry using modified BLS-700 method.

**Results:**
The pill was identified to contain fentanyl.
National (US) m30 Test Results

Purity Range: 71-97%

### Carfentanil

- Analogue of fentanyl
- 1974 large animal anesthetic
- 2012 Moscow theater crisis (170 deaths, 130 hostages)
- Nalmefene may be best antagonist?

Yong et al: Nalmefene reverses carfentanil-induced loss of righting reflex and respiratory depression in rats. EJP 2014
Unexpected "Gas" Casualties in Moscow: A Medical Toxicology Perspective

In October 2002, the Russian military used a mysterious "gas" to incapacitate Chechen rebels at a Moscow theater. Despite increased interest in the potential use of lethal chemical weapons in recent years, the medical community has paid little attention to the development of incapacitating, calming, and "less than lethal" technologies. In this analysis, we review the events surrounding the use of a calming "gas" during the Russian military action and discuss what is currently known about fentanyl derivatives, their aerosolization, and the rationale for their use as incapacitating agents. Collectively, the available evidence strongly suggests that a combination of a potent aerosolized fentanyl derivative, such as carfentanil, and an inhalational anesthetic, such as halothane, was used. The paper also assesses potential errors leading to the loss of a substantial number of hostages. Several lessons can be learned from this surprising and novel use of an incapacitating gas.


---

Opioid Potencies

| Table. Characteristics of opioids including fentanyl derivatives.²⁵,³⁴-³⁶ |
|-----------------------------------------------|---------------|--------------|
| **Opioid**                         | **Potency (Compared With Morphine)** | **Lipid Solubility** | **Therapeutic Index** |
|-----------------------------------------------|---------------|--------------|
| Morphine                                      | 1             | 1.4          | 70             |
| Meperidine                                    | 0.5           | 40           | 5              |
| Methadone                                     | 4             | 120          | 12             |
| Fentanyl                                      | 300           | 800          | 300            |
| Sufentanil                                    | 4500          | 1800         | 25,000         |
| Alfentanil                                    | 75            | 150          | 1100           |
| Remifentanil                                  | 220           | 18           | 33,000         |
| Carfentanil                                   | 10,000        |              | 10,600         |

*Lipid solubility=octanol/water distribution coefficient.

**Therapeutic index=median lethal dose (LD₅₀)/lowest median effective dose (ED₅₀).
Desomorphine

Synthetic opioid developed in the US (1930s)

Known as ‘Krokodil’ in Russia

Started ~ 2003; outbreak in 2010
Can be made from codeine
Dermatopathology with skin bopping

2 US deaths attributed to “Krokodil Meth”

Desomorphine

Associated with tissue necrosis

Thionyl chloride

Codeine \[\rightarrow\] α-Chlorocodine \[\rightarrow\] Desocodeine \[\rightarrow\] Desomorphine
Kratom (Mitragyna speciosa)

Tree / shrub from Southeast Asia

Use to treat opiate withdrawal

Widely available on the internet

Powder (pills), tea, smoked

Morphine

Codeine

Mitragynine
Mitragynine Receptor Binding

Percentage inhibition of radioligand binding by mitragynine at selected receptor systems

<table>
<thead>
<tr>
<th>Receptor Type</th>
<th>Percentage Inhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine A2A</td>
<td>65.66</td>
</tr>
<tr>
<td>Adrenergic (Alpha 2)</td>
<td>61.92</td>
</tr>
<tr>
<td>Dopamine D2s</td>
<td>54.22</td>
</tr>
<tr>
<td>Opioid, mu</td>
<td>89.52</td>
</tr>
<tr>
<td>Opioid, kappa</td>
<td>90.23</td>
</tr>
<tr>
<td>Opioid, delta</td>
<td>7.00</td>
</tr>
<tr>
<td>Serotonin, 5HT2C</td>
<td>58.77</td>
</tr>
<tr>
<td>Serotonin, 5HT7</td>
<td>64.41</td>
</tr>
</tbody>
</table>

**Mu agonism may prevent WD symptoms**

**Kappa agonism attenuates reinforcement**

Dissociation constants for opioid receptor binding

- Mu receptor: 204 ± 26 nM
- Delta receptor: 2250 ± 120 nM
- Kappa receptor: 455 ± 47 nM


Kratom - Clinical Effects

Dose dependent:

- Low Dose = stimulant effects
- High Dose = opioid effects

Also reported: seizures, GI distress, hepatitis

Withdrawal syndrome reported

First reported deaths (n=9) in Sweden (with tramadol)
US Death - Neerman et al; 2012

Unique Cardiac Effects from Opioids

Concern for QTc prolongation:

High dose methadone (usually > 100 mg/day)

Loperamide abuse (self medication)

Pts often present with syncope and/or palpitations
Drug-induced QTc prolongation

Dehydration / Electrolyte abnormalities

High Risk for Torsades

(self medicating for opioid withdrawal)
Torsades

The Arizona Opioid Assistance and Referral (OAR) Line

888-688-4222
Frequently Asked Questions:

2018 Arizona Opioid Epidemic Act

Prescribers and pharmacists have a corresponding responsibility concerning patient care. For more information on the changes made by the 2018 First Special Session in the Arizona Opioid Epidemic Act, go online to the Final Amended Fact Sheet for SB 1001/HB 2001 or the language for the Chapter Bill. The information provided herein should not be construed as a legal interpretation.

Can prescribers continue to dispense controlled medication out of the office?

Beginning April 26, 2018, prescribers who treat humans can no longer dispense schedule II opioids, except for medical-assisted treatment (MAT) for substance abuse. Other controlled medications can be dispensed as specified by the prescriber’s licensing board.

What are the new limits regarding the length of time opioids may be prescribed?

Beginning April 26, 2018, a health professional shall limit the initial prescription for a schedule II opioid to not more than a five-day supply, except an initial opioid prescription following a surgical procedure is limited to a 14-day supply. (A.R.S. 32-3244)

The initial prescription 5-day supply limitation does not apply if:

a) The prescription is for the treatment of a scheduled procedure. Surgical procedure prescriptions are limited to a 14-day supply.
b) The patient has an active oncology diagnosis; 
c) The patient has a traumatic injury, excluding a surgical procedure;
d) The patient is receiving hospice care, end-of-life care, palliative care, treatment for burns or skilled nursing care;
e) The patient is receiving MAT for a substance use disorder; or
f) The patient is an infant being weaned off opioids at the time of hospital discharge.

What is the maximum morphine milligram equivalents (MME) a patient may receive per day?

The Act prohibits a health professional who is authorized to prescribe controlled substances from issuing a new prescription for a schedule II opioid that exceeds 90 morphine milligram equivalents (MMEs).
The Arizona OAR Line

The Az OAR Line is the very first US resource of this type

Presented to national committees Feb, 2018 in Washington DC

Assist patients, care-givers and providers with opioid-related issues

Acute toxicity, withdrawal, chronic pain, drug-interactions, pregnancy-related issues, medication-assisted treatment and behavioral health co-morbidities
Standard Operating Procedures:
CTPER Opioid Call Service

1. Purpose
   a. The OCS hotline is a collaboration between the AZDHSS, APOC, CTPER, and BPDIC following the Governor’s mandate to address the opioid epidemic in Arizona by finding the best treatments and reducing barriers to care.
   b. To establish and maintain the Opioid Call Service (OCS) to provide information, resources and professional consultation for all opioid-related injuries and illnesses (including toxicity, chronic pain and withdrawal) on a 24/7/365 basis.
   c. To outline the Opioid Call Service’s SOPs.

2. Scope
   a. The APOC and BPDIC will staff a 24-hour hotline and provide any available assistance, information, and/or referral to medical providers and lay persons seeking information regarding the risks, treatment, prevention, and professional consultation for all opioid-related injuries and illnesses.
   b. Medications can only be prescribed and dispensed for the purposes of MAT by qualified physicians licensed to operate an OTP.
   c. DATA 2000, part of the Children’s Health Act of 2000, permits physicians who meet certain qualifications to treat opioid dependency with narcotic medications approved by the FDA, including buprenorphine, in treatment settings other than OTPs.
   d. Approved medications indicated for the treatment of substance use disorders and prevent opioid overdose.

3. Procedure
   a. Answering the phone:
      i. Answer the line with “CTPER Hotline, this is [my name] how can I help you?"
      f. How will we redirect callers on overnights and weekends:
         2. Will we make after-hours appearance for CACI?
            a. 602-222-0441 (local)
            b. 800-615-1314 (toll-free)
            c. 800-327-5054 (TTY)
            d. 877-708-4800 (Northern AZ)
            e. 602-47-1100 (VetsLine)
Data Analysis and Research

Report call data to ADHS quarterly

Variables:
- Number/Types of calls (OAR Line and PCC line)
- Callers (provider type, patient, caregiver)
- Patient demographics (age, gender, comorbidities)
- Caller location (city and county)
- Reason for calls
- Substance(s) involved
- Clinical Effects (acute toxicity, withdrawal symptoms)
- Resources provided

OAR Line Data:

2019 2nd Quarter

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>All calls</td>
<td>980</td>
</tr>
<tr>
<td>Exposure/Clinical Calls</td>
<td>477</td>
</tr>
<tr>
<td>Information Calls</td>
<td>503</td>
</tr>
<tr>
<td>Provider calls</td>
<td>395</td>
</tr>
<tr>
<td>Patient / Caregiver (layperson) calls</td>
<td>610</td>
</tr>
<tr>
<td>Calls via OAR Line</td>
<td>222</td>
</tr>
<tr>
<td>Calls via other (non-OAR) PCC Lines</td>
<td>779</td>
</tr>
<tr>
<td>Number of post overdose patients referred to MAT</td>
<td>30</td>
</tr>
<tr>
<td>Number of post-overdose patients linked to the OAR line by hospital staff</td>
<td>30</td>
</tr>
<tr>
<td>Number of staff hours used to deliver virtual case management services</td>
<td>74</td>
</tr>
<tr>
<td>Number of healthcare providers that received academic detailing services through OAR.</td>
<td>198</td>
</tr>
</tbody>
</table>
Patient ‘Enrollment’ - Passive Process

HCF staff identify patients with opioid-related issues

Inform patient about the OAR Line Services

Verbal consent for involvement (confirm contact info)

Call OAR Line with: Patient name Contact info (cell, email)

Substance Issue

OAR Line staff perform at least two follow-up calls (2d and 1wk)

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Arizona OAR Line</th>
<th>Arizona PCC Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oxycodone</td>
<td>19</td>
<td>133</td>
</tr>
<tr>
<td>2. Oxycodone/ APAP</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>3. Hydrocodone/ APAP</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>4. Heroin</td>
<td>11</td>
<td>49</td>
</tr>
<tr>
<td>5. Morphine/Oxycontin</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td>6. Tramadol</td>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>7. Fentanyl</td>
<td>3</td>
<td>72</td>
</tr>
<tr>
<td>8. Methadone</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>9. Suboxone/Buprenorphine</td>
<td>6</td>
<td>37</td>
</tr>
<tr>
<td>10. Kratom</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>
Take Home Points - Opioids

Opioid-related Injuries are Increasing
(acute toxicity, adverse effects)

Opioid-related Deaths are Increasing

Increase in Opioid Dependence/Withdrawal
Take Home Points - Opioid Syndrome

- CNS Depression
- Respiratory Depression
- Miosis (small pupils)

Take Home Points - Novel Opioids

- New (and old) Agents: carfentanil, fentanyl
- Contamination of illicit and Rx drugs
- Patients often unaware of what they are buying/using
- May require higher doses of naloxone (infusions)
**Take Home Points - Kratom**

- Used to Treat Opiate Withdrawal
- Dose Dependent Effects
- Stimulant (low dose) Opioid (high dose)
- Withdrawal Syndrome Reported

**Take Home Points - Torsades**

- High dose Methadone (>100 mg)
- Loperamide Abuse (self treatment for withdrawal)
- Increased Risk with Electrolyte Abnormalities
- Treat with Magnesium / Overdrive pacing
The Arizona Opioid Assistance and Referral (OAR) Line
1-888-688-4222

24/7 free, confidential advice and services
Staffed by certified nurses and pharmacists
Providers and prescribers can speak with physician

For patients and family members:
Emergent and non-urgent information about opioid medications and effects.
Assistance with opioid (and other medication) use, chronic pain and opioid withdrawal.
Referrals for patient support and outpatient opioid and treatment services.
Referrals for patients seeking behavioral health treatment services.
Routine follow-up calls for ongoing assistance and support.

For health care providers:
Treating patients with acute opioid complications or withdrawal.
Real-time consultation about prescribing opioids (including acute or chronic pain).
Managing high-dose or complicated medications.
Assistance with opioid dosing (including medication weaning medications).
Outpatient resources for medical, behavioral health and Medication Associated Treatment (MAT) services.

QUESTIONS?
Poison & Drug Information Center
800-222-1222   602-253-3334

OAR Line    888-688-4222

daniel.brooks@bannerhealth.com