Opioids and Patient Safety

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Medical Director
Behavioral Health System Baltimore
Maryland Patient Safety Conference
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Disclosures

• None
History

- c3400 BC – poppy cultivated in Lower Mesopotamia “Hul Gil” “joy plant” (Sumerian)
- c1300 BC – Egyptian cultivation – traded into Europe
- c460 Hippocrates
- 1300-1500 disappears from European historical record
- 1527 Paracelsus reintroduces opium as laudanum: black pills opium, citrus and gold – prescribed as painkillers “stones of immortality”
- 1680 Syndeham’s Laudanum introduced – opium, sherry and herbs
- 1803 morphine isolated from poppy
- 1821 De Quincey “Confessions of an English Opium-eater”
- 1843 syringe invented
- 1874 heroin synthesized from morphine marketed in 1890s
Medicinal Uses

- Analgesia (Civil War)
- Cough Suppressant
- Anti-Diarrhea
- Treatment of “Female Conditions” including (chronic) pain
What is an opioid?

- Anything that binds to opioid receptor
- Natural (opiate) or synthetic
  - Heroin, morphine, codeine, fentanyl, methadone
  - Pill, capsule, powder or liquid
- Prescription or illicit
- Administered: Swallowed/drunk, smoked, snorted or injected, patch
- “Narcotic”: criminal justice/law enforcement term – not medical, chemical
## Opioid Epidemics in the US

<table>
<thead>
<tr>
<th></th>
<th>1900</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals with opioid use disorder</td>
<td>300,000</td>
<td>2,456,000</td>
</tr>
<tr>
<td>Population of US</td>
<td>76,212,168</td>
<td>321,216,397</td>
</tr>
<tr>
<td>Prevalence of opioid use disorder</td>
<td>0.39%</td>
<td>0.76%</td>
</tr>
</tbody>
</table>
The current opioid epidemic
Relationship between Nonmedical Prescription-Opioid Use and Heroin Use

Wilson M. Compton, M.D., M.P.E., Christopher M. Jones, Pharm.D., M.P.H.,
and Grant T. Baldwin, Ph.D., M.P.H.

Figure 1. Age-Adjusted Rates of Death Related to Prescription Opioids and Heroin Drug Poisoning in the United States, 2000–2014.
Data are from the Centers for Disease Control and Prevention.3

Figure 2. Nonmedical Use of Prescription Opioids and Heroin during the Previous Year among Noninstitutionalized Persons 12 Years of Age or Older, 2002–2014.
Data are from the Center for Behavioral Health Statistics and Quality.2
Opioids in the US

• An average of 129 Americans die each day from drug overdose - and more than half are from prescription drugs alone

• 39% sharp rise in heroin-related deaths 2012-2013

• 90% of first-time heroin users are white

• 75% of heroin users used prescription opioids before heroin
Rx Opioids: Gateway Drug for Heroin

Heroin use is part of a larger substance abuse problem.

Nearly all people who used heroin also used at least 1 other drug.

Most used at least 3 other drugs.

Heroin is a highly addictive opioid drug with a high risk of overdose and death for users.

People who are addicted to...

- Alcohol are 2x more likely
- Marijuana are 3x more likely
- Cocaine are 15x more likely
- Rx Opioid Painkillers are 40x more likely

...more likely to be addicted to heroin.

HIV spreading at disturbing rate in southern Indiana

LOUISVILLE, Ky. (WDRB) — HIV is spreading at a disturbing rate in southern Indiana, affecting some of our local counties. Doctors say they believe they know what is behind the outbreak. The outbreak has infected 26 people in Clark, Jackson, Perry, Scott and Washington counties.

Doctor Kevin Burke, Clark County’s health officer and the medical director at a clinic which tests and treats HIV patients, says the majority of the cases are in Scott county — where they typically might only see a handful of new HIV cases in a whole year.

“In Scott County where I believe these all, or almost all, these cases are, we would see about 5 cases per year,” said Burke.

The 26 cases have been confirmed since just December. Plus, an additional four people have been tested and are presumed HIV positive, says Burke.

The culprit? Drug use.

Health officials have linked the majority of cases to people sharing needles while using the painkiller opium. There is no cure for the lifelong disease, which requires a lot of medical care.

“We’re encouraging people who have risky behaviors to get tested,” Burke said.

CDC: Indiana has 'one of the worst' HIV outbreaks

INDIANAPOLIS — A team of high-ranking federal officials will visit Indiana on Tuesday to get a firsthand look at the response to an HIV outbreak of more than 140 cases, one of the largest in recent years, in the hope of learning ways to prevent similar occurrences.

“'This is one of the worst documented outbreaks of HIV among IV users in the past two decades,' said Dr. Jonathan Mermel, director of the National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention at the Centers for Disease Control and Prevention in Atlanta. ‘It’s of import to the CDC as well as the people of Indiana.'"
How the Epidemic of Drug Overdose Deaths Ripples Across America

By HAEYOUN PARK and MATTHEW BLOCH    JAN. 19, 2016

Overdose deaths per 100,000

4  8  12  16  20

2003  2004  2005  2006
2007  2008  2009  2010
2011  2012  2013  2014
What is an Opioid Overdose

- **Opioid overdose** happens when a **toxic amount** of an opioid—alone or mixed with other opioid(s), drugs and/or substances—overwhelms the body’s ability to handle it.

- **Respiratory Suppression**

- Many opioid-related overdoses result from **mixing** opioids with benzodiazepines, cocaine and/or alcohol.
Overdose Death Maryland

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>892</td>
<td>1070</td>
<td>+19.2</td>
</tr>
<tr>
<td>Rate</td>
<td>14.6</td>
<td>17.4</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Drug Intoxication Deaths Occurring in Maryland, 2007-2014 (through October)

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm?s_cid=mm6450a3_w
Opioids are common and proximate
Opioids as Pharmakon

• Ancient Greek term Pharmakon
  – Medicine and Poison
  – The capacity to be beneficial and detrimental – (even at the same time)
More deaths from opioids than homicide in Maryland

The Current Opioid Epidemic: How did we get here?
Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century

Anne Case¹ and Angus Deaton¹

Fig. 1. All-cause mortality, ages 45–54 for US White non-Hispanics (USW), US Hispanics (USH), and six comparison countries: France (FRA), Germany (GER), the United Kingdom (UK), Canada (CAN), Australia (AUS), and Sweden (SWE).

Fig. 2. Mortality by cause, white non-Hispanics ages 45–54.
Pain: The 5th Vital Sign

• History
  – Introduced by president of American Pain Society 1995
  – Embraced by VA system late 1990s
  – Became Joint Commission standard 2001

• Because
  – Recognition pain undertreated
  – Untreated pain leads to chronic pain
  – Chronic pain interferes with quality of life, is costly, and common
Chronic Pain NIH 1998

• The most common reason individuals seek medical care
• Greater than a third of US suffers from a chronic pain condition at some point
• Cost $100 billion/year in health care, compensation and litigation
• 14% workers take time off for pain
• Hospital: increased LOS, recovery time, and overall poorer outcomes

Treatment of Pain

WHO Cancer Pain Ladder

Applied to non-cancer pain

- Opioid addiction rare in pain patients
- Physicians needlessly allowing patient to suffer because of “opiophobia”
- Opioids are safe and effective for chronic pain
- Opioid therapy can easily be discontinued
OxyContin

- Approved 1995
- Sales:
  - 1996 $45 million
  - 2000 $1.1 billion
  - 2010 $3.1 billion (30% of painkiller market)
- 1996-2002 funded >20,000 pain-related educational programs
- Provided financial support to: American Pain Society, the American Academy of Pain Medicine, the Federation of State Medical Boards, the Joint Commission
- Sackler Family (Purdue Pharma) 16th richest in US (Forbes 2015)
ADD ICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients, Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

JANE PORTER
HERSHEL JICK, M.D.
Boston Collaborative Drug Surveillance Program
Boston University Medical Center

Waltham, MA 02154

• 11 (29%) – adequate pain relief
• 13 (34%) partial relief
• No improvements in social function, employment
• Conclusion: “opioid maintenance therapy can be safe, salutary and more humane alternative...”
Poor Science Widely Cited

Weak evidence regarding COT efficacy and safety was widely cited

- Porter and Jick 1980
- Portenoy and Foley 1986
Joint Commission JCAHO

• Recognize the right of patients, residents or clients to appropriate assessment and management of pain

• Screen patients, residents or clients for pain during their initial assessment and, when clinically required, during ongoing, periodic reassessments

• Educate patients, residents or clients suffering from pain, and their families, about pain management
The Pain Scale
A Bill of Rights for People with Pain

• I have the right to have my reports of pain accepted and acted on by healthcare professionals.

• I have the right to have my pain controlled, no matter what its cause or how severe it may be.

• I have the right to be treated with respect at all times. When I need medication for pain, I should not be treated like a drug abuser.
Rates of prescription painkiller sales, deaths and substance abuse treatment admissions (1999-2010)


Amount of prescription painkillers sold by state per 10,000 people (2010)

SOURCE: Automation of Reports and Consolidated Orders System (ARCOS) of the Drug Enforcement Administration (DEA), 2010

Drug overdose death rates by state per 100,000 people (2008)

What’s the evidence?

• 50% opioid-naïve patients on opioids report no change or worsening pain

• Compared to placebo:
  – Moderate pain relief for opioids – all short term (<12wks) outcomes
  – Increase in short-term adverse events

• No benefit of extended release vs other formulations

• High-dose vs low-dose: no difference in toxicities
Perceptions of Harm

Maryland

Monitoring the Future

Perceptions of Risk – 8th Graders 2013

“How much do you think people risk harming themselves (physically or in other ways), if they…”

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasional use of heroin without a needle</td>
<td>73%</td>
</tr>
<tr>
<td>Occasional Vicodin</td>
<td>26%</td>
</tr>
<tr>
<td>Occasional OxyContin</td>
<td>33%</td>
</tr>
<tr>
<td>Occasional Marijuana</td>
<td>37%</td>
</tr>
<tr>
<td>Smoke 1-5 cigarettes/day</td>
<td>43%</td>
</tr>
</tbody>
</table>

“Great Risk”
Pain, Racial Inequities and Mortality
Death Rates Rising for Whites

**Death Rates for Black and Hispanic** adults have fallen since 1999, but have increased for **whites**, particularly women and young adults. The rise in deaths has been largely driven by drug overdoses.

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**Deaths from H.I.V. and Aids** have fallen steadily among younger blacks and Hispanics, accounting for much of their overall drop in death rates. AIDS-related deaths have also fallen among whites, but not enough to offset the increasing numbers of deaths from suicide and drug overdose.

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**Deaths from Drug Overdose** and other accidental poisonings have remained relatively flat for blacks and Hispanics but continue to rise sharply among whites. Prescription painkillers and heroin are thought to be driving the increase in drug deaths.

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Source: Centers for Disease Control and Prevention

By The New York Times
Trends in Opioid Prescribing by Race/Ethnicity for Patients Seeking Care in US Emergency Departments

Mark J. Pletcher, MD, MPH
Stefan C. Kertesz, MD, MSc
Michael A. Kohn, MD, MPP
Ralph Gonzales, MD, MSPH

Context: National quality improvement initiatives implemented in the late 1990s were followed by substantial increases in opioid prescribing in the United States, but it is unknown whether opioid prescribing for treatment of pain in the emergency department has increased and whether differences in opioid prescribing by race/ethnicity have decreased.

Figure 1. Percentage of Emergency Department Pain-Related Visits at Which an Opioid Was Prescribed, by Race/Ethnicity and Survey Year, NHAMCS 1993-2005

Figure 2. Percentage of Emergency Department Visits at Which an Opioid Was Prescribed, by Pain Severity and Period, NHAMCS 1997-2000 and 2003-2005

Maryland Patient Safety Center
Racial Disparities in Pain Management of Children With Appendicitis in Emergency Departments

Monika K. Goyal, MD, MSCE; Nathan Kuppermann, MD, MPH; Sean D. Cleary, PhD, MPH; Stephen J. Teach, MD, MPH; James M. Chamberlain, MD

Figure 1. Predicted Probabilities for Analgesic and Opioid Administration by Race Stratified by Pain Score and Adjusted for Ethnicity

A. Moderate pain

B. Severe pain

*Statistically significant difference in administration (P < .05).

Figure 2. Adjusted Predicted Probabilities for Analgesia and Opioid Administration by Race Over Time

A. Any analgesia

B. Opioid analgesia

A. Any analgesia. B. Opioid analgesia. Adjusted for ethnicity, age, sex, insurance status, triage level, and pain score.
Racial inequities have protected non-whites from overdose epidemic

- Racial inequities in opioid prescribing still exist
- “Protected” non-whites from overdose epidemic
- Who a heroin user is has changed
The Changing Face of Heroin Use in the United States: A Retrospective Analysis of the Past 50 Years

Theodore J. Cicero, PhD; Matthew S. Ellis, MPE; Hillary L. Surratt, PhD; Steven P. Kurtz, PhD


**Figure 1.** Percentage of the Total Heroin-Dependent Sample That Used Heroin or a Prescription Opioid as Their First Opioid of Abuse

**Figure 2.** Sex Distribution of Respondents Expressed as Percentage of the Total Sample

Data are plotted as a function of decade in which respondents initiated their opioid abuse.

**Figure 3.** Racial Distribution of Respondents Expressed as Percentage of the Total Sample of Heroin Users
Heroin Use Has INCREASED Among Most Demographic Groups

<table>
<thead>
<tr>
<th>SEX</th>
<th>2002-2004*</th>
<th>2011-2013*</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2.4</td>
<td>3.6</td>
<td>50%</td>
</tr>
<tr>
<td>Female</td>
<td>0.8</td>
<td>1.6</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE, YEARS</th>
<th>2002-2004*</th>
<th>2011-2013*</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-17</td>
<td>1.8</td>
<td>1.6</td>
<td>--</td>
</tr>
<tr>
<td>18-25</td>
<td>3.5</td>
<td>7.3</td>
<td>109%</td>
</tr>
<tr>
<td>26 or older</td>
<td>1.2</td>
<td>1.9</td>
<td>58%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RACE/ETHNICITY</th>
<th>2002-2004*</th>
<th>2011-2013*</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hispanic white</td>
<td>1.4</td>
<td>3</td>
<td>114%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.7</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANNUAL HOUSEHOLD INCOME</th>
<th>2002-2004*</th>
<th>2011-2013*</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>3.4</td>
<td>5.5</td>
<td>62%</td>
</tr>
<tr>
<td>$20,000-$49,999</td>
<td>1.3</td>
<td>2.3</td>
<td>77%</td>
</tr>
<tr>
<td>$50,000 or more</td>
<td>1</td>
<td>1.6</td>
<td>60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEALTH INSURANCE COVERAGE</th>
<th>2002-2004*</th>
<th>2011-2013*</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>4.2</td>
<td>6.7</td>
<td>60%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>4.3</td>
<td>4.7</td>
<td>--</td>
</tr>
<tr>
<td>Private or other</td>
<td>0.8</td>
<td>1.3</td>
<td>63%</td>
</tr>
</tbody>
</table>

Heroin Addiction and Overdose Deaths are Climbing

Heroin-Related Overdose Deaths (per 100,000 people)

286% increase

Heroin Addiction (per 1,000 people)

Overdose is not a consequence of nonmedical use

Figure 4
(a) Past month nonmedical OPR use by age versus (b) OPR-related unintentional overdose deaths by age. Abbreviation: OPR, opioid pain reliever. Sources: 58, 68.
Opioid Risks Affect All Opioid Users

• Prescription opioids as prescribed
  – Analgesics
  – Addiction treatment

• Nonmedical use

• Heroin

• You don’t have to have an addiction to opioids to die from an overdose
What to do?

• Public Health Response
• Prevention Strategies:
  – Primary
  – Secondary
  – Tertiary Prevention
Primary Prevention

• Prevent addiction caused by exposure to prescription opioids
  – C25% of patients on long-term opioids have an addiction (Martell 207 Ann Int Med)
  – Prescribing Guidelines – emphasizing substitution of nonopioid analgesics, avoid extended release, limit supply
  – Provider education of harms
  – Public education
(Safe) Opioid prescribing guidelines

1. Narcotic analgesics are appropriate for acute illness or injury
   a. Discharge prescriptions are limited (should not exceed 7 days worth)
   b. Oxycodone (Percocet) and hydromorphone (Dilaudid) have high abuse potential and the physician should consider using hydrocodone (Vicodin) or tramadol (Ultram)

2. The patient should not receive narcotic prescriptions from multiple doctors

3. Patients with chronic noncancer pain should not receive injections of narcotic analgesics in the ED

4. Emergency physicians should not prescribe long acting narcotic agents such as oxycontin, extended release morphine or methadone

5. Emergency physicians should not replace lost or stolen prescriptions for controlled substances

6. Emergency physicians should not fill prescriptions for patients who have run out of pain medications. Refills are to be arranged with the primary or specialty prescribing physician

7. Narcotic pain medication is discouraged for dental and back pain whether acute or chronic

8. Narcotic pain medication should not be used to treat migraines, gastroparesis and chronic abdominal or pelvic pain

9. Physicians should consider drug screening as needed to guide treatment decisions

10. Patients with suspected addictive behavior will be referred to the Psychiatric Crisis Response Center or other detoxification resources
Opioid Prescribing: Safe Practice, Changing Lives

The CO*RE/ASAM

Opioid Prescribing: Safe Practice, Changing Lives

Overview

The misuse of extended-release and long-acting (ER/LA) opioids is a major public health problem. Centers for Disease Control and Prevention reported the following:

- In 2011, almost 17,000 Americans died of drug overdose involving opioid analgesics.
- 1 in 20 high school seniors reports abusing OxyContin.
Table 2. Immediate and Long-Term Impact of Guideline on Prescriptions for Opioids

<table>
<thead>
<tr>
<th></th>
<th>6 to 12 Months Before Guideline</th>
<th>0 to 6 Months After Guideline</th>
<th>12 to 18 Months After Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients prescribed opioids</td>
<td>2392/4540 (52.7)</td>
<td>1229/4122 (29.8)</td>
<td>1528/4525 (33.8)</td>
</tr>
<tr>
<td>p Value, relative risk (95% CI)</td>
<td>&lt;0.001, 0.38 (0.35 to 0.42)</td>
<td></td>
<td>&lt;0.001, 0.68 (0.65 to 0.71)</td>
</tr>
</tbody>
</table>

Table 3. Survey of Prescribers responses (n = 31)

<table>
<thead>
<tr>
<th>Since the Adoption of an Opioid Prescribing Guideline</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The rate with which I prescribe opioids has decreased.</td>
<td>0</td>
<td>3</td>
<td>13</td>
<td>58</td>
<td>26</td>
</tr>
<tr>
<td>The rate with which our faculty as a whole prescribes opioids has decreased.</td>
<td>0</td>
<td>3</td>
<td>6.5</td>
<td>55</td>
<td>35.5</td>
</tr>
<tr>
<td>Patients are overall less satisfied with the care they receive in the emergency department.</td>
<td>10</td>
<td>58</td>
<td>19</td>
<td>6.5</td>
<td>35.5</td>
</tr>
<tr>
<td>The guideline has made it easier for me to discuss with patients my decision to deny requests for opioids when I feel they are not indicated.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>42</td>
<td>55</td>
</tr>
<tr>
<td>I have encountered less hostility during discussions related to the prescribing of narcotic analgesics.</td>
<td>3</td>
<td>16</td>
<td>6.5</td>
<td>48</td>
<td>26</td>
</tr>
<tr>
<td>Patients with legitimate indications for opioids are being denied access to appropriate analgesia.</td>
<td>58</td>
<td>26</td>
<td>3</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>I support the use of an opioid prescribing guideline in the emergency department.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>81</td>
</tr>
</tbody>
</table>

Values are percentages.
Primary Prevention: Prevent harm caused by nonmedical exposure

- Discard unused medications
- DEA Drug Take Back
- Baltimore – prescription return boxes at each police precinct station
Secondary Prevention

• Screen for health condition after onset – but early in course – before serious complications
• Physician Drug Monitoring Programs (PDMP)
• Problem – need to link people to care, not simply refuse prescription
Secondary Prevention

• Naloxone –
  – Co-prescribing
  – For friends and families
  – People who use drugs
  – First Responders

• Syringe exchange – reduces HIV/HCV
Naloxone
Administering Nasal Naloxone

Tilt back the head so the naloxone will not run out of the person’s nose

• Spray **one-half** (1cc) of the naloxone up **each** nostril
Good Samaritan Laws

CODE OF MARYLAND, CRIMINAL PROCEDURE ARTICLE, §1–210
A person who seeks, provides or assists with medical assistance for another person experiencing an alcohol- or drug-related medical emergency cannot be arrested, charged, or prosecuted for:
• Possession of a controlled dangerous substance
• Possession or use of drug paraphernalia
• Providing alcohol to minors
Calling 911 WILL NOT affect your PAROLE or PROBATION status

Code of Maryland, Health General §13–3110
An individual who administers naloxone to an individual believed to be experiencing an overdose shall have immunity from liability under §§ 6-603 and 5-629 of the Courts and Judicial Proceedings Article
You cannot be held liable for a good faith attempt to help someone.
YOU CAN STOP OVERDOSE DEATH

GET NALOXONE SAVE A LIFE

GET ALL THE INFO DONTDIE.ORG

Learn about Naloxone. It is something you can do to help someone you care about.

WHAT IS NALOXONE?

Naloxone is a prescription medicine that can reverse an opioid overdose. It is given by nasal spray or injection to a person having an overdose.

IS NALOXONE ADDICTIVE?

No, it is not addictive. It only works if a person has taken an opioid drug like heroin, Percocet® or OxyContin®.

WHERE CAN I GET NALOXONE?

You need to be trained to get and give Naloxone. Anyone can be trained.

Go to DONTDIE.ORG or call 410.433.5175 to find a training near you.

Where can I get crisis services or help for substance use or mental health issues? You can call 410.433.5175.

Provided by the Office of Mayor Stephanie Rawlings-Blake, Baltimore City Health Department, Maryland Department of Health and Mental Hygiene, and Behavioral Health System Baltimore.
Tertiary Prevention

• Strategies once disease is established
• Drug Treatment
  – Medication Assisted Treatment
  – Methadone, Buprenorphine, Naltrexone
<table>
<thead>
<tr>
<th>Product</th>
<th>Formulation</th>
<th>Receptor Pharmacology</th>
<th>FDA</th>
<th>DEA</th>
<th>Treatment Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methadone</td>
<td>Oral, liquid concentrate, tablet, powder</td>
<td>Full mu agonist</td>
<td>Never formally approved</td>
<td>II</td>
<td>OTP</td>
</tr>
<tr>
<td>Buprenorphine</td>
<td>Sublingual tablet/film</td>
<td>Partial mu agonist Mu antagonist (combination product)</td>
<td>2002</td>
<td>III</td>
<td>OTP, Physician’s office, or other health care setting</td>
</tr>
<tr>
<td>Naltrexone</td>
<td>Oral/injection</td>
<td>Mu antagonist</td>
<td>1984</td>
<td>Not schedule d</td>
<td>OTP, Physician’s office, any SUD treatment program</td>
</tr>
</tbody>
</table>
Opioid Agonist Treatments and Heroin Overdose Deaths in Baltimore, Maryland, 1995–2009

Robert P. Schwartz, MD, Jan Gryczynski, PhD, Kevin E. O’Grady, PhD, Joshua M. Sharfstein, MD, Gregory Warren, MA, MSB, Yngvild Olsen, MD, Shannon G. Mitchell, PhD, and Jerome H. Jaffe, MD

Mortality prior to, during and after opioid maintenance treatment (OMT): A national prospective cross-registry study

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Deaths per 100-person-years

GAP=1 million
Treatment Gap
Use of pain relievers or heroin in the past month 2012

28% ≈ 1.5 million opioid and heroin patients receiving medications
72% ≈ 3.7 million no treatment received

5,197,000 total users surveyed

*Number of individuals receiving buprenorphine or naltrexone from IMS plus number of patients receiving methadone from NSSATS. Source: IMS Total Patient Tracker, September 2014 and SAMHSANSSATS. Buprenorphine data exclude forms indicated for pain. Oral naltrexone factored for opioid dependence use. Methadone patients from SAMHSA, N-SSATS 2012.
HOW TO GET MORE INFORMATION

www.ASAMNationalGuideline.com
Responding to the Heroin Epidemic

PREVENT People From Starting Heroin
Reduce prescription opioid painkiller abuse.
Improve opioid painkiller prescribing practices and identify high-risk individuals early.

REDUCE Heroin Addiction
Ensure access to Medication-Assisted Treatment (MAT).
Treat people addicted to heroin or prescription opioid painkillers with MAT which combines the use of medications (methadone, buprenorphine, or naltrexone) with counseling and behavioral therapies.

REVERSE Heroin Overdose
Expand the use of naloxone.
Use naloxone, a life-saving drug that can reverse the effects of an opioid overdose when administered in time.

SOURCE: CDC VitalSigns, July 2015
Opportunities for Intervention
592 (59%) had 1 or more visits for an overdose in year prior to death

570 (66%) had 1 or more visit for any reason

*Based on the 858 individuals who died of an overdose in 2013.
Enrolled in and receiving addiction treatment 30 days after randomization

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine and Brief Intervention</td>
<td>89 (78%)</td>
</tr>
<tr>
<td>Brief Intervention</td>
<td>50 (45%)</td>
</tr>
<tr>
<td>Referral</td>
<td>38 (37%)</td>
</tr>
</tbody>
</table>

P<0.001
Emergency Department Programs in Baltimore

- Screening, Brief Intervention, Referral to Treatment (SBIRT)
- 3 Emergency Departments: Mercy, Harbor, Bon Secours
- Universal Screening – Peer/SW engagement in ED and following day in community, with referral protocols to BHSB staff (Warm Handoffs)
Risk of Overdose Death Following Release from Prison or Jail

Relative Risk* of Dying of an Unintentional Opioid Overdose by Time Since Release from Prison or Jail, Maryland, 2007-2013.

*Compared to deaths occurring 91-365 days following release
Overdose Fatality Review Teams
Project RedStop

PROTECT YOURSELF. PROTECT A FRIEND.

For crisis services, mental health and substance use information:
Crisis, Information & Referral Line
410-433-5175

Stephanie Rawlings-Blake, Mayor

PROTECT YOURSELF FROM OVERDOSE

- Avoid mixing drugs (including alcohol). If you do mix, use less of each.
- If you haven’t used in a while, use less than usual.
- Don’t use alone.
- Make an emergency plan with friends.
- Fentanyl-laced heroin is especially unsafe—avoid it.
- Get naloxone! Visit www.dontdie.org to find out how.

PROTECT A FRIEND.

Know the signs of opioid overdose:
- Person does not respond.
- Fingertips or lips turn blue or gray.
- Breathing is slow, shallow, or stops.
- Gurgling or snoring noises.

Get trained to use naloxone (Narcan). See back of card.

In case of an opioid overdose:
1. CALL 911 IMMEDIATELY. Tell the operator where you are and that the person is not responding. The operator can help you care for the person.
2. GIVE NALOXONE if you have it. Stay with the person.
3. RESCUE BREATHING: tilt head, lift chin, pinch nose. Give 1 breath every 5 seconds.
4. RECOVERY POSITION: if you must leave the person alone, put them on their side.
YOU CAN GET HELP NOW

Baltimore has a 24/7 help line. Call the Crisis Information & Referral Line

410-433-5175

CALL NOW FOR HELP

GET HELP AND INFORMATION: 410-433-5175

• Crisis intervention services
• Substance use treatment
• Mental health treatment
• Overdose prevention resources

Around the clock service – 365 days a year.
For more information, visit www.bhsbaltimore.org

CALL NOW FOR HELP.
For more information, visit www.bhsbaltimore.org
Conclusions

• Opioids – Pharmakon
• Current Opioid Epidemic is Iatrogenic
• Response along the prevention timeline
Thank You

• Questions?

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Racial Differences in Primary Care Opioid Risk Reduction Strategies

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ABSTRACT

PURPOSE Racial disparities in treating pain with opioids are widely reported; however, differences in use of recommended strategies to reduce the risk of opioid misuse by race/ethnicity have not been evaluated.

METHODS In a retrospective cohort of black and white patients with chronic noncancer pain prescribed opioid analgesics for at least 3 months, we assessed

Table 2. Odds of Receipt of Opioid Risk Reduction Strategies for Black vs White Patients

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Unadjusted</th>
<th>Clustering</th>
<th>Demographics</th>
<th>Substance Abuse</th>
<th>Comorbidities</th>
<th>Health Care Factors</th>
<th>Practice Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine drug testing</td>
<td>1.63</td>
<td>1.53</td>
<td>1.44</td>
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<td>1.56</td>
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<td>(1.03-2.59)</td>
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<td>(0.86-2.73)</td>
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<tr>
<td></td>
<td>P = .04</td>
<td>P = .10</td>
<td>P = .21</td>
<td>P = .20</td>
<td>P = .15</td>
<td>P = .14</td>
<td>P = .26</td>
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<td>Regular office visits</td>
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<td>2.22</td>
<td>1.74</td>
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<td>1.66</td>
<td>1.55</td>
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<td>(1.28-2.38)</td>
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<tr>
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<td>P &lt; .001</td>
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<td>P &lt; .01</td>
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<td>P = .02</td>
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<tr>
<td>Restricted early refills</td>
<td>1.48</td>
<td>1.60</td>
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<td>1.50</td>
<td>1.50</td>
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<td>(1.22-2.10)</td>
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<td>(1.07-2.10)</td>
<td>(1.01-2.11)</td>
<td>(1.06-2.31)</td>
<td>(1.03-2.32)</td>
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<tr>
<td></td>
<td>P &lt; .01</td>
<td>P &lt; .01</td>
<td>P = .02</td>
<td>P = .02</td>
<td>P = .03</td>
<td>P = .04</td>
<td></td>
</tr>
</tbody>
</table>

Note: Values are odds ratios (95% confidence intervals) and P values.

* Nonlinear mixed effect regression models adjusting additively for sets of patient, clinical, and health care variables.

b Clustering of patients within physician.

Includes sex, age, median household income of neighborhood.

Includes problem substance use (alcohol, nonopiates, and opioids), tobacco use.

Mental health and medical comorbidities.

Includes duration of long-term opioid treatment, appointment attendance rate, and primary care use category. Primary care use category was not included in the regular office visits models.

Urine drug testing analysis excludes 2 practices that performed only 1 test or no tests in patients (n = 274 patients).
Naloxone Legislation Maryland

• Physicians, advanced practice nurses, dentists, and other providers with prescribing authority can prescribe naloxone to any patient who is believed to be at risk of experiencing an opioid overdose or in a position to assist an individual at potential risk of an opioid overdose. This means that Marylanders can go directly to their provider to get naloxone and get educated on how to use it to save someone’s life.

• Prescribers are immune from civil liability for prescribing naloxone. The law protects providers from civil lawsuits when they prescribe or dispense naloxone to patients in good faith and according to statutory requirements. If your patient administers naloxone to someone believed to be experiencing an opioid overdose, they may be protected from civil liability under an existing state “Good Samaritan” law.

• Enhancements to the Overdose Response Program (ORP). The new law also enhances the Maryland Overdose Response Program (ORP), a public health initiative providing overdose education and naloxone distribution to community members across the state. The ORP has trained over 10,000 Marylanders since its launch in early 2014. The program provides free educational resources for training patients and other laypersons on responding to an opioid overdose with naloxone. Licensed physicians or advanced practice nurses with prescribing authority may issue a standing order to delegate the authority for dispensing naloxone to an ORP certificate holder that completes the DHMH authorized training.
What is an opioid?

• Compound that acts on the opioid receptor
  – Derived from opium, “natural” (opiates) or synthesized
  – “Narcotic” criminal justice term, not medical

• Receptor
  – Mu (Kappa, Delta, Nociceptin...)

![Diagram of opioid receptor activity and affinity zones](source: Mike Stillings, Reckitt Benckiser, Inc.)
Opioid receptor activation

- **Agonist**
  - Heroin, Oxy, Methadone
- **Partial Agonist**
  - Buprenorphine
- **Antagonist**
  - Naltrexone, naloxone
Basic Definitions

Addiction

– A primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations.*

– A chronic, relapsing disease characterized by compulsive drug seeking and use despite harmful consequences as well as neurochemical and molecular changes in the brain.**

A brain disease whose visible symptoms are behaviours

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*American Society of Addiction Medicine
**National Institute on Drug Abuse (NIDA)
Addiction vs Dependence/Tolerance

- Physical dependence/tolerance is not addiction
  - Addiction is a brain disease that affects behaviour
  - Dependence is an expected adaptation of the body to a specific substrate so that in the absence of that substrate a withdrawal syndrome develops
  - Tolerance is pharmacologic principle where reaction to specific concentration of drug is reduced with repeated use
  - Affect different parts of the brain

- Many medications cause either tolerance or dependence or both (SSRIs, HTN medication)
  - Everyone taking enough opioid continuously for longer than a week