OPIOID SUBSTANCE USE DISORDER
DESTIGMATING TREATMENT 
&
MEDICATION OPTIONS

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Author House Publishing
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Goals and Objectives

- Destigmatize the Disease of Opioid “Addiction”
  - How health care providers can make a difference
  - Mechanisms to destigmatize through education

- How Nurse Practitioners Can Get Involved in Treatment
  - Regulatory update
  - Medication Assisted Treatment (MAT)
  - Holistic / Integrated Care

- Pharmacology Review
  - Agonists
  - Partial Agonists / Mixed Agonists
  - Antagonists
PLEASE
RAISE YOUR HAND
IF YOU
DO NOT KNOW
A HEROIN ADDICT
N.H. high school dean charged with having heroin in her office

By Emma Brown | THE WASHINGTON POST APRIL 05, 2016

APRIL 10, 2015

Former Teacher of the Year Nominee Busted for Drugs

By Katherine Underwood and Tim Jones
The Changing Face of Heroin Use in the US Retrospective Analysis - Past 50 Years, JAMA

CONCLUSION:

HEROIN USE HAS MIGRATED FROM INNER-CITY TO PRIMARILY WHITE MEN AND WOMEN IN THEIR LATE 20’s & 30’s LIVING OUTSIDE OF LARGE URBAN AREAS

Purity → intranasal use


https://www.cdc.gov/nchs/products/databriefs/db273.htm
Super Bowl Commercial 2016
Percent Adults Reporting Current Illicit Drug Use by Income Level

Source: BRFSS – Massachusetts
Percent Adults Reporting Current Illicit Drug Use
By Educational Level

Source: BRFSS - Massachusetts
A PUBLIC HEALTH CRISIS

- 66 MM (25% of pop.) reported binge drinking
- 48 MM (18% of pop.) used illicit drug or misused prescription drugs
- 2017: ~ 70,000 died of drug OD in (> 49,000 from opioids)
- Alcohol misuse → 88,000 deaths/yr

Only 1 in 10 w/ SUD Receive Treatment
TOTAL U.S. DRUG DEATHS

~ 70,000 died in 2017 (49,000 from opioids)

62,740
Total deaths from Iraq and Vietnam wars


60,000 deaths per year

40,000

20,000

5. Massachusetts 22.3
6. Connecticut 19.7
7. Maine 19.5

2. New Hampshire 27.2
4. Rhode Island 23.0


https://wonder.cdc.gov/
TOTAL U.S. DRUG DEATHS

Accidental Deaths - US

TOP CAUSE OF ACCIDENTAL DEATHS

Drugs now kill more people than cars, guns
Number of deaths from drug poisonings vs. other causes, 1999-2014

- Drug overdoses
- Car accidents
- Shootings

Source: CDC
MASSACHUSETTS

Comparing the opioid-related death rate of Massachusetts to the nation overall.

Ave. Annual Opioid Related Death Rate per 100,000 People

Heroin
Primary Substance of Abuse Seeking Treatment (%)

Sources: CDC National Center for Health Statistics & MA-DPH
Drug Overdose Deaths

The opioid crisis spills into the workplace

By Catarina Saraiva, Patricia Laya and Jeanna Smialek, Bloomberg • September 23, 2017

“.....There’s a growing consensus among economists that opioid abuse has contributed to the shrinking workforce. Fed chair Janet Yellen has flagged the issue.”
When Entering Treatment

http://www.mass.gov/chapter55/
Stoneham, MA

http://www.mass.gov/chapter55/
Cohasset, MA

http://www.mass.gov/chapter55/
Figure 1. Percent of high school students who have used heroin or prescription drugs without a doctor's prescription in their lifetime.

Source: Youth Risk Behavioral Survey, 2013

Source: NH Bureau of Drug & Alcohol Services, 2016
FENTANYL DEATHS IN NEW HAMPSHIRE

Fentanyl Combination Related Drug Deaths 2016*

<table>
<thead>
<tr>
<th>Drug Combination</th>
<th># of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fentanyl</td>
<td>198</td>
</tr>
<tr>
<td>Acetyl Fentanyl, Fentanyl</td>
<td>32</td>
</tr>
<tr>
<td>Cocaine, Fentanyl</td>
<td>25</td>
</tr>
<tr>
<td>Ethanol, Fentanyl</td>
<td>16</td>
</tr>
<tr>
<td>Fentanyl, Heroin</td>
<td>9</td>
</tr>
<tr>
<td>Fentanyl, Oxycodone</td>
<td>8</td>
</tr>
<tr>
<td>Fentanyl, Methamphetamine</td>
<td>4</td>
</tr>
<tr>
<td>Fentanyl, Morphine</td>
<td>4</td>
</tr>
<tr>
<td>Acetyl Fentanyl, Cocaine, Fentanyl</td>
<td>3</td>
</tr>
<tr>
<td>Cocaine, Ethanol, Fentanyl, Heroin</td>
<td>3</td>
</tr>
<tr>
<td>Acetyl Fentanyl, Cocaine, Fentanyl, Heroin</td>
<td>3</td>
</tr>
</tbody>
</table>

*2016 Numbers are based on analysis as of 8 April, 2017
Source: NH Medical Examiner’s Office
A photo from the New Hampshire State Drug Lab: deadly dose of heroin, fentanyl and carfentanil

**Fentanyl**: 50 - 100 x more potent than morphine

**Carfentanil**: 100 x stronger than Fentanyl; 10,000 x stronger than morphine
2% decrease in the number of opioid related overdose deaths in 2017

4% decrease in 2018 compared with 2017

Improved access to treatment, prevention, education and widespread use naloxone

MA UPDATE

Prevention, education, treatment, and access to naloxone works

BUT

Fatal overdoses due to:
89% Fentanyl (illicit synthetic not the drug prescribed by physicians)
34% - Heroin    15% Prescription opioids

Figure 5. Percent of Opioid-Related Overdose Deaths with Specific Drugs Present
Massachusetts Residents: 2014 - 2018

1. This is most likely illicitly produced and sold, not prescription fentanyl

NATIONWIDE

Percent Change in Predicted 12 Month-ending Count of Drug Overdose Deaths, by Jurisdiction: July 2017 to July 2018

Legend for Percent Change in Drug Overdose Deaths Between 12-Month Ending Periods

-25.1

-1.3

OBLIGATION TO DESTIGMATIZE THE DISEASE OF ADDICTION
Health Care Providers & Public Health Officials

Strategies & Talking Points to Educate

- Emphasize Addiction as Equal Opportunity Disease
- Explain Causes of Opioid Epidemic/Pandemic
- Emphasize - Blame does not Solve Problem or Save Lives
- Consequences & Costs of Not Treating
- Benefits: MAT for Opioid SUD
- Discuss Need to Expand Doctor/Nurse Training; Education; Screening
- Novel Approaches → Destigmatize & Demystify

DON’T JUST PREACH TO THE CHOIR
MOVE PAST SOUND BITES
DEMYSTIFY & DESTIGMATIZE

ADDICTION ON TRIAL
A Shawn Marks Thriller

To Tell the Real Story of Addiction
Sex – Drugs – Rock & Roll
Based on Medical & Legal Truths

ALL AUTHOR PROCEEDS DONATED TO
TREATMENT CENTERS
HOMELESS SHELTERS
EDUCATIONAL ORGANIZATIONS
Meet Saul Tolson

Jimmy’s Psychotherapist

Patient Advocate
Saul Tolson

*FICTION*

**ADDICTION ON TRIAL**

Dr. Steven Kassels

“Put aside your current opinion of addiction. Give me your cleansed minds for just a brief time. At the end of my presentation you may accept, reject, or modify anything I say, but please start now with a clean slate.”

**Murder Mystery / Legal Thriller**

*Based on Medical & Legal Truths*
Activation of the reward pathway by addictive drugs

- PFC
- alcohol
- cocaine
- heroin
- nicotine
- VTA
- NA
- heroin
Annual Cost to Society
Alcohol & Drug Addiction

$400 Billion spent related to:

• Crime
• Health Care
• Lost Worker Productivity

“You can pay now or you can pay later, but you’re gonna pay.”
Annual Cost of Treatment
Heroin / Opiate Addiction

Thousands

- Outpt Rx: $5,000
- Residential: $20,000 +
- Department of Correction: $50,000 +
WORDS MATTER

SUBSTANCE USE DISORDER - NOT SUBSTANCE ABUSE

Stigma and Language

Addict
Hitting Bottom
Junkie
Crack Head

Substance Abuse/Abuser
Dirty Urine
Clean Urine
Habit/Drug Habit

People choose to use drugs
They do not choose to become addicted
Maine Governor Janet Mills - More Compassionate Approach
Expansion of Treatment

“With the name D-Money, Smoothie, Shifty ... they come up here, they sell their heroin, they go back home. Half the time they impregnate a young white girl before they leave.”

Phone call with President Peña Nieto of Mexico January 27, 2017
“I won New Hampshire because New Hampshire is a drug-infested den”
GOOD ADDICTIONS & BAD ADDICTIONS
Addiction as a Disease Model
Chronic Relapsing Disorder
An Equal Opportunity Disease

- Bio-psychosocial disease
- Self inflicted illness w/genetic predisposition
- Self medication of underlying disease (psychiatric, pain)
- Family illness/dysfunction
- Secondary/complicating illnesses (medical & psychiatric)
- Significant number of patients w/ SUD → psychiatric illness
Who or What to Blame - Heroin Epidemic

- Injudicious Prescribing by MD’s
- Physician/NP/PA Training & Reducing Biases/Barriers
- Patient Expectations
- Big Pharma: Oxy Reconstitution & Heroin Purity
- War in Afghanistan
- NIMBY
- Supply & Demand - “War on Drugs”
- Mental Health Treatment
- Revolving Door of Incarceration
- Public Officials
- Internet Sale of Pain Pills
INJUDICIOUS OPIOID PRESCRIBING

WHERE YOU LIVE MATTERS

https://www.youtube.com/watch?v=3VnXk2FAwW4&feature=youtu.be
INJUDICIOUS PRESCRIBING
NOT JUST THE DOCTORS

Source: Results from the 2013 National Survey on Drug Use and Health; Summary of National Findings. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality.
**Educating Doctors - NPs - PAs**

**THE DISEASE OF ADDICTION – SUBSTANCE USE DISORDER**

**NOT “SUBSTANCE ABUSE”**

**Goals and Objectives:**

- Demystify the disease of addiction – equal opportunity
- Direct & indirect illnesses from addictive diseases
- Benefits: MAT for opioid use disorder
- Healthcare providers role/obligation: Destigmatize
- Expand Medical Training/Education: 

  ![COPE Logo]
NOT JUST BIG PHARMA

Fatal Opioid & Heroin Overdoses

Source: United States Center for Disease Control
War in Afghanistan
NOT IN MY BACKYARD
“NIMBY”
SUPPLY & DEMAND

“WAR ON DRUGS” vs. “WAR ON ADDICTION”

EMPHASIS ON PREVENTION AND TREATMENT

We cannot arrest and incarcerate addiction out of people

Michael Botticelli, head of the White House Office of National Drug Control Policy (ONDCP) as the “drug czar,” under president Obama
Mental Health Treatment

ILLUSTRATION BY JOHNNY RYAN
QUIZ

After we all get dressed again where do many people wait until their flight is called?
REVOLVING DOOR OF INCARCERATION

Jails and prisons:
The unmanned front in the battle against the opioid epidemic

There should be just as many public service announcements about addiction as there are Viagra and Cialis commercials.

In addition, expansion of addiction treatment services in jails would help to mitigate much of the revolving door phenomenon.

Furthermore, we should demand that our medical schools and hospitals improve addiction training of our physicians.

While there is plenty of blame to go around, let’s focus on the solutions.

The scourge of addiction is in all of our yards.

The solution is to decrease the demand with bold public initiatives and a change in attitude. It is both the humanitarian and fiscally responsible thing to do.
Internet Sale of Opiates

- $60 *Reasonable* OxyContin (hard to crush) 60 mg Hartford, CT
- $25 *Cheap* OxyContin (old OC-crushable) 20 mg Wiscasset, ME
- $3.75 *Reasonable* Methadone 10 mg Hartford, CT
- $15 *Pricey* Oxycodone 15 mg Burlington, VT
- $3 *Overpriced* Oxycodone 5 mg Providence, RI
- $10 *Overpriced* Dilaudid 2 mg Worcester MA
PROVIDER BIAS & BARRIERS TO TREATMENT

BUPRENORPHINE

- Non-resident Physicians < 35 y/o = 7.8% of workforce:
  - 2.6% of the Bup prescribers
  - Rural America: FP & internists - only 3% have Bup waiver

- Low rate of young physicians with Bup waivers:
  - Insufficient med school & residency training

- Barriers to Office Based Suboxone Treatment:
  - Complexity of pts & concern re: Diversion
  - Lack of mental health/counseling & institutional support
  - Inadequate support from office staff
  - Reimbursement issues/concerns
  - Opposition from practice partners

Geographic and Specialty Distribution of US Physicians Trained to Treat Opioid Use Disorder

PAs & NPs:
- Effective February 27, 2017
- Complete 24 hours training
- Free courses available: [https://www.samhsa.gov/medication-assisted-treatment/qualify-nps-pas-waivers](https://www.samhsa.gov/medication-assisted-treatment/qualify-nps-pas-waivers)
- 30 patients (lobby for more patients!)
- Approved through October 1, 2021

Physicians:
- 30 patients for 1st year
- 100 patients for 2nd year
- 275 patients thereafter
Classification of Opioids/Opiates

*Opiates are found naturally in the opium poppy*

*Opioids are synthetic substances not derived from opium*

**Naturally Occurring Opiates:**

Alkaloids of Opium:

Morphine; Codeine; Heroin (converted to Morphine in the brain)

**Synthetic or Semisynthetic Opioids:**

Morphine like Synthetic Opioids - lab alteration of morphine:

Hydromorphone (Dilaudid); Oxycodone (Oxycontin, Percodan);
Hydrocodone (Vicodin, Hycodan)

Meperidine like Synthetic Opioids – chem. unlike morphine:

Meperidine (Demerol); Diphenoxylate (Lomotil); Fentanyl; Carfentanil

Methadone like Opioids – synthetic, long acting:

Methadone (Dolophine), Propoxyphene (Darvon), LAAM

**Agonist-Antagonist Opioids:**

Pentazocine (Talwin); Nalbuphine (Nubain); Butorphanol (Stadol);
Buprenorphine (Subutex/Suboxone)
### OPIOID RECEPTORS

<table>
<thead>
<tr>
<th></th>
<th>Mu</th>
<th>Delta</th>
<th>Kappa</th>
<th>ORL-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical effects</strong></td>
<td>Analgesia, Depression, Euphoria, Physical dependence, Respiratory Sedation</td>
<td>Analgesia, Inhibit dopamine release, Modulation of mu receptor</td>
<td>Analgesia, Diuresis, Dysphoria</td>
<td>Analgesia, Sedation</td>
</tr>
</tbody>
</table>

|                  |                      |                                   |                                |                                 |
| Full Agonist     | Codeine, Fentanyl, Heroin, Hydrocodone, Hydromorphone, Levorphanol, Meperidine, Methadone, Morphine, Oxycodone, Oxymorphone | Buprenorphine, Butorphanol, Pentazocine, Tramadol | Buprenorphine, Butorphanol, Nalbuphine, Pentazocine | Naloxone, Naltrexone |
| Partial Agonist  |                      |                                   |                                |                                 |
| Mixed Agonist/Antagonist |                      |                                   |                                |                                 |

- **Full and Partial Agonists** may provide similar effects at low doses
- **Partial Agonists**: at ↑ doses effects plateau
- **Mixed Agonists/Antagonists**: ↑ in dose may → adverse effects

**Tolerance**

Less bang for the same buck

**Dependency**

Symptoms in the absence of a drug

**Addiction**

Not just current or prior dependency
Related to behavior

*Drug seeking behavior & use despite harm to self or others*
Addiction

The continued engagement in a behavior despite adverse consequences

Starting to use a drug is a choice
but
Addiction is not a choice!

Drug seeking behavior and use despite harm to self or others
Opioid Addiction is a Brain Disease

Common Pathway to Addiction

- Opioids both stimulate & suppress release of neurotransmitters → pleasure & addiction
- Changes in brain structure and function from prolonged use
- Change in endogenous opiate receptor sensitivity (mu, kappa, delta receptors)
# Opiate Withdrawal Symptoms

<table>
<thead>
<tr>
<th>Opiate withdrawal:</th>
<th>Fear of withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticipatory</strong> (3-4 hours after last use)</td>
<td>anxiety</td>
</tr>
<tr>
<td></td>
<td>drug seeking behavior</td>
</tr>
<tr>
<td><strong>Early</strong> (8-10 hours after last use)</td>
<td>anxiety</td>
</tr>
<tr>
<td></td>
<td>restlessness</td>
</tr>
<tr>
<td></td>
<td>yawning</td>
</tr>
<tr>
<td></td>
<td>nausea</td>
</tr>
<tr>
<td></td>
<td>sweating</td>
</tr>
<tr>
<td></td>
<td>nasal stuffiness</td>
</tr>
<tr>
<td></td>
<td>rhinorrhea</td>
</tr>
<tr>
<td></td>
<td>lacrimation</td>
</tr>
<tr>
<td></td>
<td>dilated pupils</td>
</tr>
<tr>
<td></td>
<td>stomach cramps</td>
</tr>
<tr>
<td></td>
<td>drug-seeking behavior</td>
</tr>
<tr>
<td><strong>Fully developed</strong> (1-3 days after last use)</td>
<td>severe anxiety</td>
</tr>
<tr>
<td></td>
<td>tremor</td>
</tr>
<tr>
<td></td>
<td>restlessness</td>
</tr>
<tr>
<td></td>
<td>piloerection</td>
</tr>
<tr>
<td></td>
<td>vomiting, diarrhea</td>
</tr>
<tr>
<td></td>
<td>muscle spasm</td>
</tr>
<tr>
<td></td>
<td>muscle pain</td>
</tr>
<tr>
<td></td>
<td>increased blood pressure; tachycardia</td>
</tr>
<tr>
<td></td>
<td>fever, chills</td>
</tr>
<tr>
<td></td>
<td>impulse-driven drug-seeking behavior</td>
</tr>
<tr>
<td><strong>Protracted abstinence</strong> (indefinite duration)</td>
<td>hypotension</td>
</tr>
<tr>
<td></td>
<td>bradycardia</td>
</tr>
<tr>
<td></td>
<td>insomnia</td>
</tr>
<tr>
<td></td>
<td>loss of energy, appetite</td>
</tr>
<tr>
<td></td>
<td>opiate cravings</td>
</tr>
</tbody>
</table>
Clinical Opiate Withdrawal Scale

<table>
<thead>
<tr>
<th>Reason for this assessment:</th>
</tr>
</thead>
</table>

|**Patient’s Name:** | |**Date and Time** |
|---------------------|-------------------|

|**Resting Pulse Rate:** | |**GI Upset:** over last 1/2 hour |
|------------------------|------------------------|
| 0 pulse rate 80 or below | 1 no GI symptoms |
| 1 pulse rate 81-100 | 1 stomach cramps |
| 2 pulse rate 101-120 | 2 nausea or loose stool |
| 4 pulse rate greater than 120 | 3 vomiting or diarrhea |
| 5 multiple episodes of diarrhea or vomiting |

<table>
<thead>
<tr>
<th><strong>Sweating:</strong> over past 1/2 hour not accounted for by room temperature or patient activity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 no report of chills or flushing</td>
</tr>
<tr>
<td>1 subjective report of chills or flushing</td>
</tr>
<tr>
<td>2 flushed or observable moistness on face</td>
</tr>
<tr>
<td>3 beads of sweat on brow or face</td>
</tr>
<tr>
<td>4 sweat streaming off face</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Tremor:</strong> observation of outstretched hands</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 no tremor</td>
</tr>
<tr>
<td>1 tremor can be felt, but not observed</td>
</tr>
<tr>
<td>2 slight tremor observable</td>
</tr>
<tr>
<td>4 gross tremor or muscle twitching</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Restlessness:</strong> Observation during assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 able to sit still</td>
</tr>
<tr>
<td>1 reports difficulty sitting still, but is able to do so</td>
</tr>
<tr>
<td>3 frequent shifting or extraneous movements of legs/arms</td>
</tr>
<tr>
<td>5 unable to sit still for more than a few seconds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Yawning:</strong> Observation during assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 no yawning</td>
</tr>
<tr>
<td>1 yawning once or twice during assessment</td>
</tr>
<tr>
<td>2 yawning three or more times during assessment</td>
</tr>
<tr>
<td>4 yawning several times/minute</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pupil size:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 pupils pinned or normal size for room light</td>
</tr>
<tr>
<td>1 pupils possibly larger than normal for room light</td>
</tr>
<tr>
<td>2 pupils moderately dilated</td>
</tr>
<tr>
<td>5 pupils so dilated that only the rim of the iris is visible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Anxiety or Irritability:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 none</td>
</tr>
<tr>
<td>1 patient reports increasing irritability or anxiousness</td>
</tr>
<tr>
<td>2 patient obviously irritable or anxious</td>
</tr>
<tr>
<td>4 patient so irritable or anxious that participation in the assessment is difficult</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bone or Joint aches:</strong> If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 not present</td>
</tr>
<tr>
<td>1 mild diffuse discomfort</td>
</tr>
<tr>
<td>2 patient reports severe diffuse aching of joints/muscles</td>
</tr>
<tr>
<td>4 patient is rubbing joints or muscles and is unable to sit still because of discomfort</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Gooseflesh skin:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 skin is smooth</td>
</tr>
<tr>
<td>3 piloerrection of skin can be felt or hairs standing up on arms</td>
</tr>
<tr>
<td>5 prominent piloerrection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Runny nose or tearing:</strong> Not accounted for by cold symptoms or allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 not present</td>
</tr>
<tr>
<td>1 nasal stuffiness or unusually moist eyes</td>
</tr>
<tr>
<td>2 nose running or tearing</td>
</tr>
<tr>
<td>4 nose constantly running or tears streaming down cheeks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Total Score:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The total score is the sum of all 11 items</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score: 5-12 = mild. 13-24 = moderate. 25-36 = moderately severe. more than 36 = severe withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initials of person completing assessment:</td>
</tr>
</tbody>
</table>
HOLOSTIC APPROACH

TREATMENT OF SUD IS MULTIFACTORIAL
INDIVIDUALIZED TREATMENT IS ESSENTIAL

- Integrated Medical Care
- Counseling
  - Individual/Group/Family
- Self-help Groups
- Acupuncture
- Meditation
- Diet and Exercise
- Medications to Treat:
  - Acute/Prolonged Withdrawal
  - Mental Illness/Hepatitis/HIV
- Recovery Coaches
- Therapeutic Communities
- Hospitalization: Partial/Inpatient
TREATMENT GOALS

Medication Assisted Treatment (‘MAT’):

- medication in combination with counseling and behavioral therapies
- A “whole-patient” approach to treat substance use disorders
- Includes Methadone and Suboxone treatment
- NOT replacing one drug for another

What Defines Successful Treatment?

- same as BP, DM, Cancer, CAD
- How long does pt need meds for any chronic illness ???
- Arbitrary limits of med treatment: not evidence based medicine
- End Game = quality of life & minimizing symptoms
- All chronic illnesses share same medication criteria: Risk vs. Benefit
MEDICATION ASSISTED TREATMENT
CHRONIC ILLNESSES

- DIABETES:
  - Disease of the Pancreas: Lack of Insulin or body not responding to Insulin
    - Replacement medication:
      - Oral medication
      - Insulin
      - Counseling and psychosocial support are essential aspects of treatment

- ADDISONS DISEASE:
  - Disease of the Adrenal Glands: Decreased production of Cortisol (steroid)
    - Replacement medication:
      - Oral steroids
RELAPSE RATES
ADDICTION & OTHER CHRONIC ILLNESSES

- Drug Addiction: 40 to 60%
- Type II Diabetes: 30 to 50%
- Hypertension: 50 to 70%
- Asthma: 50 to 70%

NIDA
MAT OPIOID SUBSTANCE USE DISORDER

- **METHADONE (~ 80 – 120 mgs)**:
  - Full Agonist
  - Approved for “clinic” use only to treat addiction
  - Better for patients who need more structure
  - Liquid vs. Tablets

- **BUPRENORPHINE - Suboxone/Subutex (2 → 16 mgs)**:
  - Partial Agonist/Mixed Agonist
  - Approved for both Office Based & Methadone Clinics
  - Better for patients with lower levels of dependency/addiction
  - Tablets & Film
  - Injection: Sublocade - Monthly SQ injection
  - Probuphine – Subdermal Rods

- **NALTREXONE (“Long Acting Naloxone”)**
  - Pure Antagonist
  - **Oral**: 25 – 150 mg. q 1-3 days
  - **IM**: 380 mgs. Q 30 days
  - Naltrexone SQ pellets
  - **Danger of Overdose with Naltrexone**

Counseling & psychosocial support are essential aspects of treatment
What is Methadone?

- Synthetic opiate to treat/prevent withdrawal in opioid dependent pts
- Provided through regulated, federally-licensed out-pt clinics
  - Dispensed daily as liquid
  - Required counseling
  - Drug testing
  - Medical exams
  - Treatment Plans
- Does NOT create a high
- Used for more than 50yrs to treat chronic opioid addiction
  - Safety and effectiveness: documented by research studies around the world

Methadone is NOT Methamphetamine!
METHADONE DOSING

- Start Low – Go Slow ➔ Stabilize ➔ Maintenance ↔ MSW

- Dose ceilings:
  - low dose vs. high dose: harm reduction - Treat the patient
  - “Listen to your patient, he/she is telling you the diagnosis” – Sir William Osler

- Blocking dose:
  - lower doses reduce physiological withdrawal sx$s
  - higher doses reduce cravings & normalize sleep

- FDA Dosing Regs:
  - day 1 initial dose not > 30mg. (+10 mg after observing for 4 hrs)
  - then daily adjustment of doses during induction/stabilization phase

- Split dosing:
  - rapid metabolizers (classic symptoms) & peak/trough > 2
  - ideal peak < 1,000 & ideal trough 200-400 ng/ml
  - rate of change of levels may be more significant than actual levels
METHADONE

Exhibit 5-5

Blood Plasma Levels Over 4 and 24 Hours With an Adequate and Inadequate Methadone Dose

- Adequate dosage (patient feels “normal”)
- Inadequate dosage (patient feels “sick”)

Hours After Observed Dose
METHADONE – SPLIT DOSE

Exhibit 5-6

*SMLs After Single and Split Methadone Dosing in a Fast Metabolizer*
## HEROIN vs. STABILIZED METHADONE MAINTENANCE

<table>
<thead>
<tr>
<th></th>
<th><strong>Heroin</strong></th>
<th><strong>Methadone</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset of Action</strong></td>
<td>Seconds</td>
<td>30-90 min</td>
</tr>
<tr>
<td><strong>Duration of Action</strong></td>
<td>4-6 hrs</td>
<td>24-36 hrs</td>
</tr>
<tr>
<td><strong>Route of Admin</strong></td>
<td>Injection, nasal, smoking</td>
<td>Oral</td>
</tr>
<tr>
<td><strong>Frequency of Admin</strong></td>
<td>4-6x/d</td>
<td>1x every 24hrs (sometimes BID)</td>
</tr>
<tr>
<td><strong>Effective Dose</strong></td>
<td>Ever increasing</td>
<td>Individualized (stabilizing dose averages 80-120+ mg/d)</td>
</tr>
<tr>
<td><strong>Overdose Potential</strong></td>
<td>High</td>
<td>Very rare at Blocking Dose</td>
</tr>
<tr>
<td><strong>Overall Safety</strong></td>
<td>Potentially lethal</td>
<td>Non-toxic in opiate tolerant patient</td>
</tr>
<tr>
<td><strong>Potential for Abuse</strong></td>
<td>High</td>
<td>Blocking Dose prevents “high”</td>
</tr>
<tr>
<td><strong>Withdrawal</strong></td>
<td>Within 3-4 hrs</td>
<td>After 24 hrs</td>
</tr>
<tr>
<td><strong>Physical Reaction Time</strong></td>
<td>Impaired</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>HEROIN vs. STABILIZED METHADONE MAINTENANCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heroin</strong></td>
<td><strong>Methadone</strong></td>
<td></td>
</tr>
<tr>
<td>➢ Mood</td>
<td>➢ Stable mood</td>
<td></td>
</tr>
<tr>
<td>➢ Getting “High”</td>
<td>➢ “High” is blocked</td>
<td></td>
</tr>
<tr>
<td>➢ Tolerance</td>
<td>➢ Stabilized</td>
<td></td>
</tr>
<tr>
<td>➢ Cravings</td>
<td>➢ Eliminated</td>
<td></td>
</tr>
<tr>
<td>➢ Intellectual Functioning</td>
<td>➢ Normal</td>
<td></td>
</tr>
<tr>
<td>➢ Pain &amp; Emotion</td>
<td>➢ Normal pain &amp; range of emotions</td>
<td></td>
</tr>
<tr>
<td>➢ HIV/Hep C Transmission</td>
<td>➢ Reduced/eliminated</td>
<td></td>
</tr>
<tr>
<td>➢ Immune System for +HIV</td>
<td>➢ Progression slowed</td>
<td></td>
</tr>
<tr>
<td>➢ Immune/Endoc fx –HIV</td>
<td>➢ Normalized</td>
<td></td>
</tr>
<tr>
<td>➢ Hypoth/Pit/Adrenal Axis</td>
<td>➢ Normalized</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Heroin</strong></td>
<td><strong>Methadone</strong></td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>Criminal Activity</td>
<td>High level</td>
<td>Reduced/eliminated</td>
</tr>
<tr>
<td>Personal Relationships</td>
<td>Disrupted</td>
<td>Restored with counseling</td>
</tr>
<tr>
<td>Employment</td>
<td>Deteriorating performance</td>
<td>Full functioning</td>
</tr>
<tr>
<td></td>
<td>Loss of employment</td>
<td></td>
</tr>
<tr>
<td>Community Relations</td>
<td>Destructive impact</td>
<td>Contributes to public safety</td>
</tr>
<tr>
<td></td>
<td>High crime &amp; death rate</td>
<td>Low mortality</td>
</tr>
<tr>
<td></td>
<td>Transmission of disease</td>
<td>Improved health</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>High risk pregnancy</td>
<td>Much lower risk pregnancy</td>
</tr>
<tr>
<td></td>
<td>Fetal abnormalities</td>
<td>Fetal abnormalities minimized</td>
</tr>
<tr>
<td></td>
<td>High maternal/fetal disease</td>
<td>Minimal fetal transmission</td>
</tr>
<tr>
<td></td>
<td>Poor parenting</td>
<td>Psycho-social support for parents</td>
</tr>
</tbody>
</table>

*Presented by US Dept of Health & Human Services and CSAT/SAMHSA*

*Derived in part from a chart by Herman Joseph, Ph.D., NY State Office of Alcoholism and Substance Abuse Services*
"Fake News" About Methadone
Myths not Truths

• #1: Methadone is substitute: one addiction for another

• #2: Pts on stable dose of Methadone are addicted

• #3: Stable Methadone pts (not using other drugs) can’t work/drive

• #4: Methadone rots teeth and bones

• #5: Methadone is not advisable in pregnant women

• #6: Methadone deaths are from addiction treatment

• #7: Diversion of Methadone is from Methadone Clinics
Crime Before and During Methadone Maintenance Treatment at 6 Programs

Adapted from Ball & Ross - The Effectiveness of Methadone Maintenance Treatment, 1991
RAPID RETURN TO INJECTION DRUG USE FOLLOWING PREMATURE TERMINATION OF MM TX

(Ball and Ross, 1991)

Percent IV Users

(N = 105 male patients)
Outcomes from Admission to Annual Update
Methadone Treatment

- 93% ↓ Use Illicit Substances

Outcomes based on data run on 3/24/15 for fiscal year 2015 using Maine’s Treatment Data System
Outcomes from Admission to Annual Update Methadone Treatment

- 91% ↓ Arrests
- 59% ↓ Psychiatric Admissions
- 50% ↓ Homelessness

Outcomes based on data run on 3/24/15 for fiscal year 2015 using Maine’s Treatment Data System
Outcomes from Admission to Annual Update Methadone Treatment

- 37% ↑ Employment
- 52% ↑ Dependents Living with Patient

Outcomes based on data run on 3/24/15 for fiscal year 2015 using Maine’s Treatment Data System
BUPRENORPHINE

- Partial Agonist/ Mixed Agonist ("Agonist/Antagonist")
- Lower doses → Agonist
- Combined w/ Naloxone for deterrence of parenteral abuse
- Approved: Office Based & Methadone Clinics
- Better for pts with lower levels dependency/addiction

Preparations:
- Sublingual Tablets
- Sublingual Film
- Buccal Film
- Injection SQ
- Subdermal Implants
Methadone vs Buprenorphine

Suboxone may be better for patients at lower levels of dependency/addiction.
ORAL BUP PREPARATIONS

BUP/NALOXONE RATIOS

➢ Sublingual Tablets
  ▪ Generic Suboxone: 2mg/0.5mg
  ▪ Zubsolve: 1.4/.36
  ▪ Subutex: 2mg/No Naloxone

➢ Sublingual Film
  ▪ Generic: 2mg/0.5mg

➢ Buccal Film:
  ▪ Bunavail: 2.1/0.3
### Common Buprenorphine Trans-Mucosal Preparations

| SUBUTEX (Buprenorphine sublingual tablets), including generic equivalents: | 2 mg buprenorphine  
8 mg buprenorphine |
|-----------------------------|-----------------|
| SUBOXONE (Buprenorphine and naloxone sublingual tablets), including generic equivalents: | 2 mg buprenorphine / 0.5 mg naloxone  
8 mg buprenorphine / 2 mg naloxone |
| Zubsolv (Buprenorphine and naloxone sublingual tablets): | 1.4 mg buprenorphine / 0.36 mg naloxone  
5.7 mg buprenorphine / 1.4 mg naloxone |
| SUBOXONE sublingual film (Buprenorphine and naloxone sublingual film): | 2 mg buprenorphine / 0.5 mg naloxone  
4 mg buprenorphine / 1 mg naloxone  
8 mg buprenorphine / 2 mg naloxone  
12 mg buprenorphine / 3 mg naloxone |

### Corresponding doses of buprenorphine products that contain naloxone

| SUBOXONE tablets  
Buprenorphine and naloxone sublingual tablets, including generic equivalents | SUBOXONE sublingual film | Zubsolv sublingual tablets |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mg buprenorphine/0.5 mg naloxone</td>
<td>2 mg buprenorphine/0.5 mg naloxone</td>
<td>1.4 mg buprenorphine/0.36 mg naloxone</td>
</tr>
<tr>
<td>8 mg buprenorphine/2 mg naloxone</td>
<td>8 mg buprenorphine/2 mg naloxone</td>
<td>5.7 mg buprenorphine/1.4 mg naloxone</td>
</tr>
</tbody>
</table>

**BUP PHASES OF TREATMENT**

*Example using Suboxone Film*

---

**Induction:**
- Pt. showing signs of withdrawal
- Induction usually over 3-4 days
- Initial dose of 2 mg/0.5 mg or 4 mg/1 mg and may titrate upwards in 2 mg/0.5 mg or 4 mg/1 mg increments (at approximately 2-hour intervals, under supervision) to 8 mg/2 mg based on the control of acute W/D signs
- Day 2: up to a single dose of up to 16 mg/4 mg
- ↑ or ↓ 2 mg/0.5 mg/d - 4 mg/1 mg/d to suppresses opioid W/D signs/sxs

**Maintenance:**
- After induction/stabilization, the Maint dose/day = 4 mg/1 mg - 24 mg/6 mg
- Some pts do better with BID dosing
- Supervised Medical Withdrawal ("Detox"): Go Slow
SUBLOCADE
- SQ injection monthly in the abdominal region
- Recommended dose: 300 mg/mo x 2 months
- Maintenance dose: 100 mg/mo (up to 300 mg/mo)
- Medication Cost: ~ $1,500+/mo
  - ~5-10 x ↑ cost than trans-mucosal

PROBUPHINE
- FDA approved: May 2016 – training & certification
- Pt must be stable on 8 mg or less of trans-mucosal bup
- Subdermal implants inner upper arm
  - 2 insertions only (1 in each arm)
- Four 80 mg match stick size rods (may increase up to 6)
- Lasts up to 6 months
  - ~ 5-8 x ↑ cost than trans-mucosal
  - + cost of procedure
DIVERSION/SAFETY ISSUES

Importance of Medication Monitoring

METHADONE

- Observation of liquid ingestion
- Take Home Medication:
  - Strict Requirements re: # THs
  - Call Backs – Dose Reconciliation
  - Locked Boxes
  - Monitoring Counseling Compliance
  - Drug Testing

BUPRENORPHINE

- Tablets vs. Film
- Supervision of Induction
- Prescribe Limited Amounts
- Benefits SQ/Subdermal
- Film Safer (hard to open)
- Call Backs – Dose Reconciliation
- Film Lot #
- Monitor Counseling Compliance
- Drug Testing
Naltrexone

- Pure Antagonist ("Long Acting Naloxone")

- Should be off MAT x 7-10 days (*risk of losing pts)
  - Lofexidine (alpha-2-adrenergic agonist) may be beneficial

- Oral Tablets:
  - 25 – 50 mg. qd or 100-150 q 2-3d
  - ~ $25 - $60/mo

- IM - Gluteal (Vivitrol; Revia):
  - 380 mg/mo
  - ~$700 - $1,000/mo

- Naltrexone implantable pellets
  - SQ Lower Abdomen
  - Experimental in US
  - Lasts 2-6 months
NALTREXONE TREATMENT

Danger of Overdose

https://www.vivitrolhcp.com/dosing-and-administration
NALOXONE PREPARATIONS

- **Injectable** *(professional training required)*
  - Generic brands of injectable naloxone vials

- **Auto-Injectable (Enzio):**
  -prefilled auto-injection
  - easy to inject quickly into the outer thigh
  - Once activated, device provides verbal instruction how to use

- **Prepackaged Nasal Spray**
  - prefilled, needle-free device
  - requires no assembly
  - sprayed into one nostril while pts lie on back.
NALOXONE
Opioid Antagonist

- April 2018 - US Surgeon General - public health advisory
  - urged communities to improve access to naloxone

- Available without script in most states

- Private insurance companies
  - intranasal naloxone available w/ little or no co-pay

- Many states have expanded naloxone-access laws
  - allows a provider to write a standing order for an entire group
    - Eg: medical students can distribute naloxone kits
A Few FAQ

Switching from Methadone ↔ Buprenorphine
- Bup → Methadone: easier
- Methadone → Bup:
  - must wait to be in mod W/D to avoid precipitated W/D

Alpha-2-adrenergic agonists medication
- Lofexidine (Lucemyra) (recently fda approved for opioid w/d)
  - Similar to Clonidine but less effect on BP
  - Relieves symptoms/cravings but not as effectively as Methadone/Bup
  - Use: during 7-10 days opioid free before starting Naltrexone

Pregnancy
- Methadone & Bup: both effective
- ? Shorter NAS with Bup

https://blog.content.health.harvard.edu/blog/lofexidine-another-option-for-withdrawal-from-opioids-but-is-it-better/ (Dr. Sarah Wakeman)
TREATMENT – ADVANCES / STRATEGIES

- **ANTI-DRUG VACCINES**
  - Attach drug to amino acids on a carrier protein such as tetanus toxoid

- **EMERGENCY DEPARTMENT BUP PRESCRIBING**
  - Started on Buprenorphine in ED up to 3 days
  - Assigned to a brief psychosocial intervention
  - Linked to primary care center for 10 wks treatment
  - Treatment in 30 days: 2 fold increase vs. referral w/out starting Bup

  *Emergency Departments — A 24/7/365 Option for Combating the Opioid Crisis*
  
  Gail D’Onofrio, M.D., Ryan P. McCormack, M.D., and Kathryn Hawk, M.D., M.H.S. n engl j med 379;26 nejm.org December 27, 2018

- **SUPERVISED INJECTION SITES**
  - next logical step after needle exchange programs
  - ~100 sites in 11 countries mostly Europe Australia and Canada
  - In US: Safe injection facilities - illegal under federal law
    - Dept of Justice stated intention to shut them down
    - Some cities have plans to establish them anyway
      - 13+ proposed sites seeking approval, including in NYC, Philadelphia, Boston, San Francisco, Seattle, Denver, Vermont, & Delaware
PREVENTION - SBIRT

Saves Lives and Cuts Healthcare Costs

Identify – Reduce – Prevent
Problematic Use & Dependence on Alcohol and Illicit Drugs

1. Screening:
   • location: any healthcare setting
   • assess risky substance use behaviors
   • standardized screening tools

2. Brief Intervention:
   • engage pt w/ risky substance use behaviors
   • short conversation, w/ feedback & advice

3. Referral to Treatment:
   • brief therapy
   • specialty care as needed
Prevention programs have been estimated to save taxpayers an average of $16 for every $1 invested.

(Studies by Washington State Institute for Public Policy - 2016)
Lifetime Model & Methadone Treatment

- Tracked methadone patients age 18 – 60
- Factors measured included:
  - heroin use
  - treatment of addiction
  - crime
  - employment
  - healthcare secondary illnesses

Each $1 dollar spent on methadone treatment yields $38

Research Triangle Institute (RTI): Health Economics, November 2005
CAN’T HIDE FROM THE TRUTH
“Drug addiction is a brain disease that can be treated.”

Nora D. Volkow, M.D.
Director
National Institute on Drug Abuse
HEALTH CARE PROVIDER OBLIGATION
Destigmatize & Demystify
CAN NOT ABDICATE OUR RESPONSIBILITY TO EDUCATE

Consistent Talking Points

- Chronic Illness
- Not an Inner City Disease
- Equal Opportunity Disease
- Who/What to Blame for Heroin Epidemic
- Treatment works

Topics to Emphasize

- Consequences & Costs of Not Treating
- Benefits: MAT for Opioid Dependency/Addiction
  - Not Replacing One Drug for Another
- Reduce the Shame: Encourage Treatment
- Reduce the Fear: NIMBY
WHAT CAN YOU DO?

TREATMENT – GET INVOLVED - *Be Part of the Solution*

- Obtain Buprenorphine xDEA
- Contact local Methadone Treatment Programs (“MTP”)
- Holistic / Integrated Care Models
- SBIRT
- Expand Narcan Access
- Provide Education re: Opioid Epidemic
- *Please raise your hand if you have done any of the above*

LOBBYING EFFORTS

- Emphasize need to expand opioid treatment
- Allow NP ordering of methadone in MTPs w/out a waiver
- Increase # of pts NPs allowed to treat with Buprenorphine
- *Emphasize Inconsistency: NPs can prescribe opioids for pain but not for opioid dependency/addiction*
www.samhsa.gov
www.prescribetoprevent.org
www.harmreduction.org
www.asam.org
www.ATForum.com
www.naabt.org
www.pcssmat.org
MEET VENLA HUJANEN
Prosecuting Attorney

Closing Arguments

Will Jimmy be Convicted of Murder?
A Special Thanks to:

Owner Mary Cotton

10 Langley Road
Newton Centre
Newton, MA 02459
617-244-6619

https://www.newtonvillebooks.com
LESSONS WE CAN LEARN FROM

In 2007, “when we told my parents [we were buying a bookstore] they were horrified,” said Mary Cotton, owner of Newtonville Books. “We were kind of young and optimistic … and we didn’t have business experience so we were willing to be bold and take the plunge…”

I sense this is a message we can learn from.

Ask yourself: What am I doing about the Opioid Epidemic?

Are you willing to “be bold and take the plunge”
WE HAVE AN OBLIGATION TO DEMYSTIFY & DESTIGMATIZE SUBSTANCE USE DISORDERS

To Tell the Real Story of Addiction
Based on Medical & Legal Truths

ALL AUTHOR PROCEEDS DONATED TO
TREATMENT CENTERS - HOMELESS SHELTERS – EDUCATIONAL ORGANIZATIONS

Welcome to Rosie’s Place
A sanctuary for poor and homeless women

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info@rosiesplace.org