medication-assisted treatment 101
medication overview & a review of the evidence

Adrienne C. Lindsey, MA, DBH
February 2015
the reward pathway

Drugs & alcohol act on the reward pathway, the same region activated by:

- eating
- sex
- drinking
- other pleasurable activities

chemical changes

The role of dopamine

- Increase in available dopamine
- Results in pleasurable feelings
- The behavior is reinforced
- The effect of previously pleasurable activities is blunted

(National Institute on Drug Abuse, 2010)
Decreased Brain Metabolism in Drug Abuser
Decreased Heart Metabolism in Heart Disease Patient

(Volkow, 2001)

Deer increased brain metabolism in drug abuser
Decreased heart metabolism in heart disease patient

(National Institute on Drug Abuse, 2010)

structural changes

serotonin
endogenous opioids
GABA

endogenous opioids
GABA

glutamate

(Volkow, 2001)
person with Alzheimer's disease

healthy elderly person

heavy drinker

(National Institute on Alcohol Abuse & Alcoholism, 2004)

alcoholic brain

control brain

b

(National Institute on Alcohol Abuse & Alcoholism, 2004)

behavioral changes

(National Institute on Alcohol Abuse & Alcoholism, 2004)
behaviors that are 
rewarded 
are likely 
to be 
repeated

classical and operant conditioning

positive reinforcement

negative reinforcement

environmental cues

behaviors that are rewarded are likely to be repeated
recovery

(National Institute on Drug Abuse, 2007)

level of brain activity (low to high)

(National Institute on Drug Abuse, 2007)

review: substances affect the brain...

chemically
structurally
behaviorally

(National Institute on Drug Abuse, 2002)
mythbusting
the facts and fiction of medication-assisted treatment

Part 2

"...treatment for a substance use disorder that includes a pharmacological intervention as part of a comprehensive substance abuse treatment plan..."

how MAT works

- eases withdrawal
- reduces cravings
- induces illness

myth #1: MAT is just replacing one drug with another.
MAT vs. illicit drugs

| prescribed/monitored by a medical provider | obtained by illegal means |
| FDA-approved | not legally permitted |
| regulated potency | potency varies |
| curbs cravings and withdrawal symptoms | results in euphoria or a "high" |

myth #2: MAT doesn’t work.

treatment outcomes for buprenorphine

| increased treatment retention |
| decrease in self-reported cravings |
| decreased illicit opioid use |

to be approved by the FDA, medications must be shown to be safe, but also effective
**treatment outcomes for methadone**
- increased treatment retention
- decreased illicit opioid use
- 8-10 fold decrease in drug-related deaths
- increase in employment rates
- decrease in criminal activities

**treatment outcomes for alcohol medications**
- reduces total number of drinking days
- reduces number of heavy drinking days
- increased likelihood for abstinence; reduces the risk of relapse
- reductions in criminal recidivism

**myth #3:** If someone is clean, they don’t need MAT.

**drug overdose is one of the leading causes of death** for individuals being released from prison or jail.
**Drug overdose** was the **leading cause of death** for those released from Washington State prisons between 1999 and 2003 (Binswanger et al., 2007).

Before…

- **Homicides**,  
- **Suicides**,  
- **Heart disease**, and…  
- **Motor vehicle accidents**

**Reductions in Mortality**

---

**myth #4:** MAT isn’t supported by 12-Step programs.

---

"No A.A. member should ‘play doctor’; all **medical advice** and treatment should come from a **qualified physician.**”

--A.A. General Service Office  
(Member Medications & Other Drugs brochure)

---

“…just as it is wrong to enable or support any alcoholic to become readdicted to any drug, it’s equally wrong to **deprive** any alcoholic of **medication**, which can **alleviate** or control other disabling physical and/or emotional problems.”

--A.A. General Service Office  
(Member Medications & Other Drugs brochure)
“NA as a whole has no opinion on outside issues, including prescribed medications. Use of psychiatric medication and other medically indicated drugs prescribed by a physician and taken under medical supervision is not seen as compromising a person’s recovery in NA.”

**myth #5: MAT is too expensive.**

**many MAT medications can be found on state Medicaid/Medicare formularies**

**RBHA formulary**

- buprenorphine/naloxone
- buprenorphine
- disulfiram
- acamprosate
- naltrexone
for those patients who do not qualify for Medicaid or Medicare, many patient assistance programs are available through the drug manufacturers.

additional MAT funding sources

- grant funding
- private insurance
- prescription discount cards
- tribal funds

Part 3: The medications for alcohol

- naltrexone
- acamprosate
- disulfiram

medications for alcohol

uses and considerations
naltrexone (Depade®, ReVia®, Vivitrol®)

mechanism: blocks the pleasurable effects of alcohol; reduces alcohol cravings

**pros** can be used for alcohol & opioid dependence, non-addictive, reduces drinking episodes & volume, extended release available

**cons** non-compliance

acamprosate (Campral®)

mechanism: assists in post-acute withdrawal symptoms (e.g. irritability, anxiety, agitation)

**pros** non-addictive, can assist patient in maintaining abstinence, not easily abused/misused, affordable

**cons** patient must be abstinent to begin treatment

disulfiram (Antabuse®)

mechanism: makes patient physically ill when ingesting alcohol

**pros** non-addictive, affordable ($60/mos), useful with chronic alcoholism

**cons** non-compliance, risk of death for those with existing health conditions, may not be appropriate for SMI px's

**medications for opioids**

- methadone
- buprenorphine
- naltrexone
**how do opioids work?**

**Opioid**

<table>
<thead>
<tr>
<th>Dose of Opioid</th>
<th>Opioid Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Agonist (e.g., methadone)</td>
<td>Alleviates withdrawal symptoms &amp; cravings</td>
</tr>
<tr>
<td>Partial Agonist (e.g., buprenorphine)</td>
<td>Alleviates withdrawal, assists with cravings</td>
</tr>
<tr>
<td>Antagonist (e.g., naloxone)</td>
<td>Prevents euphoric effects of opioids; non-addictive; extended release available</td>
</tr>
</tbody>
</table>

**Pros**
- Affordable (usually gov’t subsidized)
- Convenient dosing (1x/day)
- Demonstrated safety for pregnant women

**Cons**
- Risk of overdose with too high a dose or taking in combination with alcohol

**methadone (Methadose®, Dolophine®)**

**Mechanism:** Full agonist (acts on opioid receptors), alleviates withdrawal symptoms & cravings

**Pros**
- Affordable (usually gov’t subsidized)
- Convenient dosing (1x/day)
- Demonstrated safety for pregnant women

**Cons**
- Risk of overdose with too high a dose or taking in combination with alcohol

**buprenorphine (Subutex®)**

**buprenorphine/naloxone (Suboxone®)**

**Mechanism:** Partial agonist - blocks euphoric effects of opioids, alleviates withdrawal, assists with cravings

**Pros**
- Easier to taper than methadone
- Less risk of OD than methadone
- Available in a sublingual film, naloxone discourages abuse

**Cons**
- Costly $$$

**naltrexone (Depade®, ReVia®, Vivitrol®)**

**Mechanism:** Full antagonist (blocks opioid receptors)

**Pros**
- Prevents euphoric effects of opioids; non-addictive; extended release available

**Cons**
- Non-compliance
building a case for MAT
a review of the evidence
and patient benefits

substance abuse treatment is effective and cost-neutral...

...but half of consumers will be lost to attrition

benefits of MAT

- reduced criminal activity
- reduced substance use
- improved treatment retention
- lower risk of overdose
- employment
- improved functioning

improved treatment retention
204 prison inmates received counseling or counseling and methadone treatment services. (Kinlock et al., 2009)

2x as many inmates in the counseling only group screened positive for opioids at 1 year post-release (Schwartz, Jaffe, Grady, Das, Hightfield, & Wilson, 2009)

23 days in community treatment

0 offenders remained in treatment at 1 year

166 days in community treatment

1/3 of offenders remained in treatment at 1 year

n=204; randomly assigned

reductions in substance use

(Kinlock, Gordon, Schwartz, Fitzgerald & Grady, 2009)

prison inmates received counseling or counseling and methadone treatment services. (Kinlock et al., 2009)

762 patients

90%

38%

interim methadone treatment

% of urine analyses positive for illicit opioids

pre-treatment

post-treatment

(Schwartz, Jaffe, Grady, Das, Hightfield, & Wilson, 2009)
Buprenorphine clinical trials

4,500 opioid-addicted patients

Buprenorphine was significantly more effective at reducing illicit opiate use than placebo.

(Mattick, Kimber, Breen & Davoli, 2008)

**Naltrexone vs. Placebo**

- Fewer slips
- Fewer significant relapses
- Fewer total drinking days

(O'Brien, Volpicelli, & Volpicelli, 1996)

**Naltrexone vs. Placebo**

- Reduced consumption
- Fewer relapses
- Continuation of abstinence

(O'Malley et al., 1992)

Reduced mortality

8-10 fold reduction in deaths for opiate dependent individuals using methadone

13x higher mortality rate for opiate users than non-opiate users
death rates in treated & untreated heroin addicts

MAT has also been found to reduce...
- risky behaviors
  - IV drug use
  - unprotected sex

reductions in criminal activity

MAT can reduce criminal activity and reincarceration
Reductions in Recidivism

- 342 inmates with opioid dependence
- methadone maintenance while incarcerated; referral for methadone clinic upon release
- reincarceration rates were reduced by 70% while participants were enrolled in treatment (Dolan et al., 2004)

Reductions in Arrests

- 300+ opiate dependent clients
- interim methadone treatment vs. no treatment/waiting list
- significantly fewer arrests at 6 months (Schwartz, Jaffe, O’Grady, Kinlock, Gordon, Kelly, Wilson & Ahmed, 2009)

Improvements in employment status
↑ functioning
↑ employment outcomes

cost savings

MAT cost-savings

- improved health outcomes
- improved productivity/reduced absenteeism & presenteeism
- reduced criminal activity
- reduced recidivism/reincarceration

MAT referral process simplified
identifying appropriate candidates and locating providers
identifying MAT candidates

appropriate MAT candidates

- history of use
- previous failed treatment attempts
- openness to try MAT

use caution with…

- active psychosis
- serious health conditions
- dependence on multiple substances

medical professionals will make the ultimate determination around eligibility…
locating an MAT provider

The Substance Abuse and Mental Health Services Administration’s buprenorphine physician locator can identify those providers in your area who are certified to prescribe buprenorphine.

The Substance Abuse and Mental Health Services Administration’s Opioid Treatment Programs (OTPs) directory can identify those providers in your area who are certified to provide medications for opioid abuse, such as methadone.

The Single-State Agency (SSA) for substance abuse treatment providers for your state can point you to MAT providers in your area.
help us help you...

- name of agency
- contact info.
- forms of MAT
- forms of payment

OR...

names of providers you're referring to