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Medication-Assisted Treatment: Policy Guided by Evidence

January 15, 2015

National Criminal Justice Association
Webinar on the Evidence Behind Medication-Assisted Treatment (MAT)

Michael Botticelli, Acting Director
Office of National Drug Control Policy
Office of National Drug Control Policy

• Component of the Executive Office of the President

• Coordinates drug-control activities and related funding across the Federal Government

• Produces the annual *National Drug Control Strategy*
Knowledge of Addiction: 20th Century Versus 21st Century Approach

Myths & Misconceptions

- Morally Flawed
- Lacking in Willpower
- Punitive Responses

What Does the Science Tell Us?

- Disease of the Brain
- Health Problem
- Therapeutic Response better
National Drug Control Strategy

- The President’s science-based plan to reform drug policy:
  1) Prevent drug use before it ever begins through education
  2) Expand access to treatment for Americans struggling with addiction
  3) Reform our criminal justice system
  4) Support Americans in recovery

- Coordinated Federal effort on 112 action items

- Signature initiatives:
  - Prescription Drug Abuse
  - Prevention
  - Drugged Driving
Prescription Drug Abuse Prevention Plan

• Coordinated effort across the Federal Government

• Four focus areas:
  1) Education
  2) Prescription Drug Monitoring Programs
  3) Proper Disposal of Medication
  4) Enforcement
The Nation’s Non-medical Opioid Use Crisis
Drug Poisoning Deaths Involving Opioid Analgesics, 2009 to 2013

Source: Centers for Disease Control and Prevention/National Center for Health Statistics [NCHS]. *Multiple Cause of Death 1999-2012* on CDC WONDER Online Database, released 2014. Data for 2013 are unpublished from NCHS (December 30, 2014).
Drug Poisoning Deaths Involving Heroin 2009 to 2013

Source: Centers for Disease Control and Prevention/National Center for Health Statistics [NCHS]. Multiple Cause of Death 1999-2012 on CDC WONDER Online Database, released 2014. Data for 2013 are unpublished from NCHS (December 30, 2014).
Persons Aged 12 or Older Needing Treatment for Illicit Drug or Alcohol Use and Obtaining Specialty Treatment, 2013

22.7 Million Needing Treatment* for Illicit Drug or Alcohol Use

*Treatment need is defined as having a substance use disorder or receiving treatment at a specialty facility within the past 12 months.

Source: SAMHSA, 2013 National Survey on Drug Use and Health (September 2014).
2 Additional Strategies to Address Existing Opioid Use Disorders

• Medication-Assisted Therapy (MAT)
  – Methadone Maintenance
  – Buprenorphine Maintenance
  – Injectable Naltrexone
  – MAT includes psychosocial treatment and recovery support services

• Overdose Prevention and Education
Why Refer CJ Involved People to the Highest-Quality Evidence-Based Treatments?

• Evidence Based Treatment works

• Treatment cascade – get more people in better treatments and keep them in longer to reduce demand

• “Maintenance” type treatments encourage engagement

• Studies show high rates of fatal overdose\(^1\) and non-fatal overdose\(^2\) among those leaving incarceration (reentry populations)


Major Research Findings Supporting MAT for Criminal Justice Involved Populations*

• Decreases deaths in and out of prison
• Is underutilized by drug courts
• As a maintenance therapy, is highly effective compared to no-MAT or detoxification
• May work better in CJ-Involved populations than MAT without CJ-Involvement
• Decreases recidivism

* Please see slides 17–22 for in-depth information about studies supporting these bullets
A drug policy for the 21st century
Criminal Justice Reform: Public Health and Public Safety Collaboration

• Evidence-Based Treatment and Recovery
  – Expand access and availability to evidence-based treatment
  – Increase use of medication-assisted treatment and awareness of overdose prevention
  – Improve continuity of care and recovery support

• Opportunities for Successful Transition
For More Information:

WhiteHouse.gov/ONDCP
The following slides provide additional support for bullets on slide 13, "Major Findings Supporting MAT for Criminal Justice Involved Populations"
MAT and Deaths

• MAT is a form of long-term overdose prevention in that heroin users on MAT experience fewer overdose deaths than those not on MAT\(^1\)

• MAT in prison can reduce deaths during incarceration\(^2\)
  • MAT protected against unnatural deaths, including:
    – Suicide, (including suicide in first 4 weeks)
    – Drug-induced deaths
    – Violent deaths and other injury-related deaths

MAT Underused in Drug Courts

- In a survey of drug courts
  - 98% of drug courts reported clients with opioid problems
  - More have problems with prescription drugs than heroin
  - Court rules often do not permit MAT
  - Court referral sources often do not provide MAT
  - Opposition to MAT from judges, prosecutors and counties

MAT Effectiveness

- MAT does not exist for all drug use problems, but it can be helpful for opioid use disorder and polypharmacy when combined with behavioral treatment.

- MAT is more effective than no MAT (detox) for opioid use disorder even with high-quality behavioral treatment.
  - MAT with maintenance produces substantially better outcomes than detoxification\(^1\).
  - 50% abstinent at the end of active treatment vs 8% when medication is withdrawn.

MAT may work even better in CJ involved people than in those without CJ involvement

- Participants in Methadone in Baltimore on probation or parole were more likely to test positive for cocaine at baseline
- Positive cocaine tests went down over 12 months to a greater degree for probation/parolees
- Both groups decreased illegal activity, but those in supervision showed bigger decreases
- Methadone retained both groups in treatment equally well

MAT and Recidivism

• Opioid Users often reoffend, but MAT reduces this\(^1\)
  • For example, in study of Canadian female inmates, 47% returned to custody in 1 year. This rate is higher than among the non-using population
  • Women on methadone in prison more likely to engage in MAT afterwards
  • Women on methadone during incarceration and afterwards had
    – Lower rates of return to custody than women who stop MAT after prison or who are never on MAT in the first place.
    – Better drug use, crime, health, and social outcomes than those not in treatment.

Medications Currently Available

For Nicotine Use Disorder
- Nicotine Replacement Therapies (NRT)
- Bupropion
- Varenicline

For Alcohol Use Disorder
- Disulfiram
- Naltrexone
- Acamprosate
- Naltrexone Depot
- Topiramate

For Opioid Use Disorder
- Methadone
- Naltrexone (Vivitrol)
- Buprenorphine
- Buprenorphine/Naloxone

Principles of Drug Addiction Treatment, National Institutes of Health – National Institute on Drug Abuse
Relapse Prevention Medications for Opioid Addiction
A Brief Overview

Marc Fishman MD
Johns Hopkins University Dept of Psychiatry
Maryland Treatment Centers
Baltimore MD

National Criminal Justice Association
Webinar
Jan 2015
Rationale for medication

- Impact the biology of addiction
- Improve outcomes
- Reduce high rates of relapse
- Without medications >80% of heroin addicts relapse within 30d after detoxification
Conceptual Issues

• Should medications be used in the treatment of addiction?
  – Is this a scientific question?
  – Is this a practical question?
  – Is this a philosophical question?
The power of language

- “Drug-free” treatment
- “Abstinence-based” treatment
- Medication assisted treatment
- Medication assisted recovery
- Counseling assisted medication
- Relapse prevention medications
Anti-addiction medications - potential effects

- Block the effects of action
- Reduce cravings
- Reduce reward
- Prevent withdrawal
- Act as non-impairing substitute
- Reduce the power of relapse triggers
Medications for Opioid Addiction

Methadone
Buprenorphine
Naltrexone
Extended Release Naltrexone
Mechanisms

- **Agonist**: medication that activates a receptor
  - “Turner on-er”
- **Antagonist**: medication that blocks a receptor
  - “Turner off-er”
- **Partial agonist/antagonist**: medication that does some of both
Conceptual underpinnings

- Use as many effective tools as are available
- One size does not fit all: as many doors as possible
- A full continuum of care: multiple services with flexible responses
- Engagement promotes progress
- Expectation of relapsing/remitting course
- Expectation of variable and shifting treatment readiness
- Recovery as a gradual process, not an overnight event -- expectation of incremental progress
Relapse prevention medications improve outcomes

- Decreased drug use
- Decreased mortality
- Decreased criminal behavior and recidivism
- Decreased HIV and HCV transmission
- Increased employment
- Decreased homelessness
- Increased treatment retention
- Improved psychiatric symptoms
Buprenorphine & Higher Dose Methadone Reduce Heroin Use

From: Johnson et al., 2000
Buprenorphine & Higher Dose Methadone
Increase Time in Treatment

From: Johnson et al., 2000
Treatment Linkage & Days Used Heroin
6 Months Post-release

% of the 180 days post-release
spent in treatment
% of the 180 days post-release
used heroin

C = Counseling Only
C+T = Counseling & Treatment Referral
C+M = Counseling & Methadone Started in Prison

Is relapse prevention Rx just trading one addiction for another?

**DSM-IV Criteria For Substance Dependence**

A *maladaptive* pattern of use leading to clinically significant *impairment or distress*, manifested by *3 or >* of the following in a 12-month period:

1. Tolerance (increased amounts or diminished effects)
2. Withdrawal (withdrawal syndrome or use to relieve or avoid withdrawal)
   (Addictive Behaviors – loss of control)
3. Efforts or desire to cut down or control use
4. Taking larger amounts or over a longer period than intended
5. Social, recreational or occupational activities given up
6. Preoccupation -- time spent in activities necessary to obtain the substance
7. Use despite persistent or recurrent physical or psychological problems
Why medication? Can you be in “real” recovery on medicines?

• Medicines just a crutch or band-aid
  – Maybe. Like meetings or groups.

• If the patients like it so much, there must be something wrong with it. They must be “drug-seeking.”
  – But if they don’t utilize treatment, it almost doesn’t matter how good treatment is. 95% is showing up.

• If medications are an “easy fix” will patients refuse needed psychosocial treatments and supports.
  – Actually, they come to psychosocial treatment more.
Dose?

% with 13 Consecutive Opiate Free Urines

Buprenorphine Dose (mg)

Duration of treatment?

Bup/Taper + C
4 wks
- 8 weeks
  - Successful 7%
  - Not
  - Successful 93%

Bup + C
12 wks
- Successful 49%
- Not
- Successful 51%

Taper + C
4 wks
- 8 weeks
  - Successful 9%
  - Not
  - Successful 91%

Weiss. Arch Gen Psych. 2011
What do we do with this patient?

• 26 M injection heroin
• 4 episodes residential tx (2 AMA, 1 completed), 3 episodes outpatient treatment
• Longest abstinence 6 months while incarcerated, 4 months while in recovery house, 2 months while in IOP
• Previous buprenorphine treatment (monthly supply Rx x 4), took erratically, sold half
• Now intermittently buying street buprenorphine
• Presents in crisis seeking treatment ("Can I have my meds now, I’m kind of in a rush...")
“If only it were that easy

“We found this in your brain.”
Medications, mischief, and monkey business

- Side effects
- Diversion
- Non-compliance
- Inconsistency
- Other substances
Relapse prevention Rx delivery
Toolbox for success

• Frequent monitoring for response
• Monitoring for and attention to other substances
• Structure and limitations on Rx supply as needed
• Access to medication as contingency
• Supervised Rx administration as needed
• Extrinsic motivators, criminal justice supervision
• Team approach with close collaborations
• Integrated services: counseling, medical care, co-occurring disorders, housing
Conclusions
Opioid addiction medications

• Relapse prevention medications for opioid addiction have 50+ years demonstrated effectiveness
• Outcomes best when integrated with full array of comprehensive treatment services and individualized delivery
• Should be the standard of care, but only 35% of opioid addicted persons treated
• We need to do a better job implementing the tools we have, while we work on improving them
Pharmacological Treatment

• Question:
  – Which is better: medications or counseling?

• Answer:
  – Yes!
We’ve come a long way…

But we have a long way to go.
Behavioral interventions for opioid substitution patients: Combining two controversial treatments

Nancy M. Petry, Ph.D.
Professor of Medicine
University of Connecticut School of Medicine

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Outline

Two controversies:
1.) Polydrug use with opioid substitution
2.) Contingency management therapy
   - Background of this behavioral therapy
   - Prize CM in substance abuse treatment generally
   - Prize CM for opioid substitution patients
Controversy #1

Other substance use in opioid-substitution patients
Most opioid dependent patients have polydrug use problems, that almost always pre-date opioid substitution therapy.

Opioid substitution pharmacotherapies are highly efficacious in reducing illicit opioid use.

However, opioid substitution medications typically have no impact or modestly reduce some other substance use.
Toxicology screens in methadone patients based on treatment duration

Proportion positive for opioids

Proportion positive for other drug use
Should we expect that a pharmacotherapy designed and developed to address one medical condition (opioid dependence) impact other conditions (i.e., non-opioid substance use)?
Would we expect that antihypertension medications impact weight loss?
We need other effective therapies to reduce polysubstance use in opioid-substitution patients.
Controversy #2: Behavioral therapies for substance use treatment

Positive reinforcers (rewards) can promote development of new behavioral patterns (e.g., drug abstinence)
Positive reinforcers increase the probability of behaviors re-occurring.

- **With employees**
  Salaries, commission, awards, social praise

- **With children**
  Special foods, allowances

- **With pets**
  Treats
Punishers reduce the probabilities of behaviors re-occurring

- Fines, tickets, jail
- Poor evaluations, getting fired, negative social interactions
- Detention, time out
Both rewards and punishers can be very effective in changing behaviors when applied according to behavioral principles. However, in substance abuse treatment, punishers are most often applied.
Both rewards and punishers can be very effective in changing behaviors when applied according to behavioral principles.

- However, in substance abuse treatment, punishers are most often applied.
- Everyone would rather be rewarded than punished!
1.) **Frequently** monitor a specific *objective* target behavior.

2.) **Provide tangible positive reinforcement** each time the target behavior occurs.

3.) **Withhold reinforcement** if the target behavior does not occur (slight punisher).
Prize-based contingency management (CM)

Reinforce abstinence frequently (2-3 times per week):

- One draw for each negative sample provided.
- Draws escalate for consecutive negative samples.
Half the cards are winning

- \( \frac{1}{2} \) chance of winning a small $1 prize
- \( \frac{1}{13} \) chance of winning a large $20 prize
- \( \frac{1}{500} \) chance of winning a jumbo $100 prize
Sample cabinets
Initial study with alcohol dependent patients

Retention

% Retained

weeks

p<.05

CM
Standard

Time until first heavy drinking episode


p<.05
CM is highly efficacious in reducing substance use

- **Alcohol** (Petry et al., 2000; Alessi & Petry, 2013)
- **Marijuana** (Budney et al., 2000; Kadden et al, 2007; Litt et al, 2013)
- **Stimulants** (Higgins et al., 1994, 2000, 2007; Petry et al., 2003, 2005ab, 2006, 2011, 2012abc), including **methamphetamine** (Roll et al., 2008)
- **Smoking** (Alessi et al., 2008; Ledgerwood et al., in press)
- **Polydrug use in opioid-maintained patients** (Ghitza et al., 2008; Peirce et al., 2006; Petry et al., 2002, 2005c, 2007, 2012c).
Nationwide implementation: CM in the National Drug Abuse Clinical Trials Network
CTN outpatient sample

Remained 12 weeks in treatment

≥4 Weeks of stimulant abstinence

Petry et al. (2005). Archives of General Psychiatry
CTN methadone maintenance sample

≥4 Weeks of stimulant abstinence

CM is effective for treating substance use, even in polysubstance using opioid maintained patients.

Costs are reasonable (about $50-$200 per patient), and prize CM is cost-effective (Olmstead et al., 2007ab, 2009; Sindelar et al., 2007).

Dissemination of prize CM is ongoing, and the VA is implementing CM nationwide (Petry et al., 2013).
For a step-by-step guide to designing and implementing CM programs in clinical settings:

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