MAT TRAINING
PROVIDERS' CLINICAL SUPPORT SYSTEM
For Medication Assisted Treatment

Substance Use Disorders and Treatment

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Brian Fuehrlein, MD Disclosures

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PCSS Providers Clinical Support System

Opioid Response Network STR-TA

The contents of this activity may include discussion of off label or investigative drug uses. The faculty is aware that is their responsibility to disclose this information.

Brian Fuehrlein, MD Disclosures

- I have no financial relationships to disclose.

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Part 1

Overview of Substance Use Disorders

Analogy

Breath holding exercise

Reward System Basics

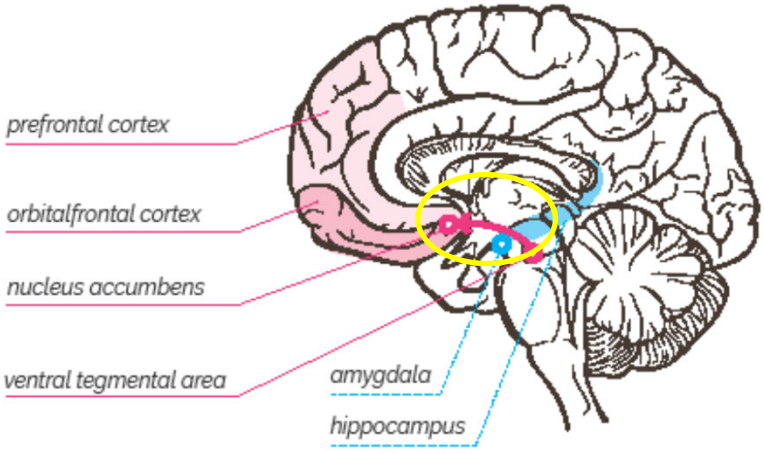
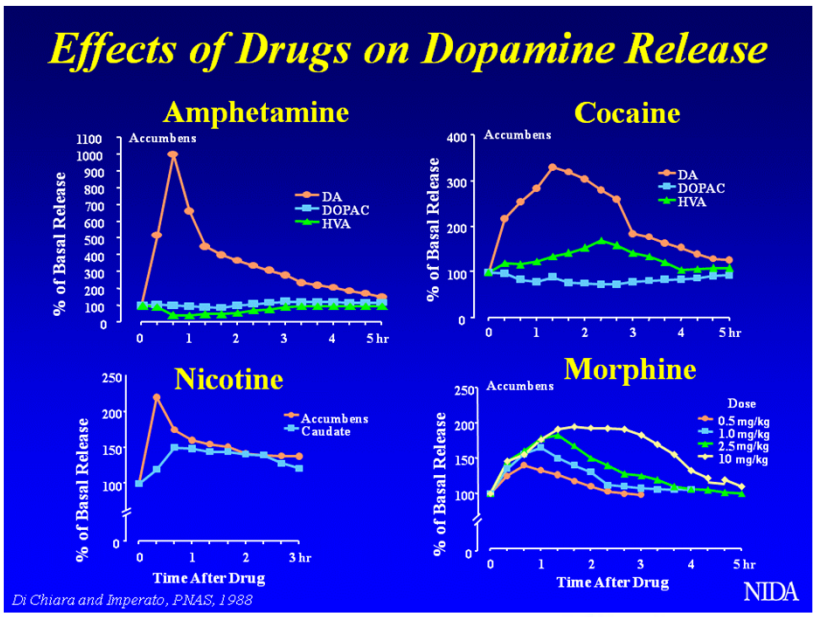


Image from Fuehrlein and Ross, Biological Psychiatry



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Reward System Basics

- Biologically and evolutionary, the primary purpose of life is to survive and pass on genetics
- The reward system is designed to reinforce eating, drinking water, sexual activity, and raising offspring
- These are activities designed for survival and procreation, which are the most important things to the organism and the species
- For lower level organisms, the reward system is critical to survival and drives daily activity

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Denial

- Substance use disorders often viewed as “cunning and baffling”
- The reward system looks for ways to convince the cortex to continue use
- Denial is a defense mechanism; it defends the substance use disorder and helps it to continue
- There is little motivation to change when the behavior is not believed to be a problem, hence the substance use disorder is protected

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Promises

- Promises help the patient to continue their disorder by denying a need for treatment or other interventions
- As with denial, this is usually not the patient “lying” but a symptom of the disease process, which the patient truly believes
- Broken promises destroy relationships and families and make it very difficult to regain trust

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Excuses

- Excuses to relapse or to avoid treatment
- Sometimes triggers are negative (stressful event, rainy day), other times they are positive (happy events, sunny day).
- Patients with a substance use disorders often create excusesto enable the disorder to continue.
- At times, the excuse is legitimate, i.e., spouse tragically dies and patient relapses after 5 years of sobriety.

Definitions

- Physical dependence (not to be confused with substance dependence) is a physiologic phenomenon caused by chronic use of a drug in which withdrawal develops upon cessation or dose reduction
- Substance use disorder is characterized primarily by loss of control, continued use despite consequences, and craving

Co-Occurring Disorders

- Substance use disorders commonly co-occur with mental illness
- Mental illness is a risk factor for the development of a substance use disorder
- In 2014 approximately 7.9 million adults in the US had co-occurring disorders
- The consequences of undiagnosed, untreated, or undertreated co-occurring disorders can lead to a higher likelihood of homelessness, incarceration, medical illnesses, suicide and early death

Center for Behavioral Health Statistics and Quality (2015). *Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health* (HHS Publication No. SMA 15-4927, NSDUH Series H-50

Relapse

- Relapse happens before the patient uses
  - Often changes in thinking or behavior that occur prior to the use of the substance
  - A time for clinicians to potentially intervene and hopefully prevent the use of the substance
- Relapses are a part of the disease process and common
  - Does not indicate a failure of treatment or moral failing of the patient.
  - A time to assess treatment needs
  - Most often can be a learning experience when approached properly

Substance Use Disorders

- SUD is a chronic disease that acts just like many other chronic chronic relapsing diseases

- Both environmental and genetic influences are very important
  - Risk factors include personal history of other SUDs, family history of SUD, history of mental illness and exposure to trauma
  - Genetics accounts for approximately 50% of SUD risk
- No one wants to have a substance use disorder, just like no one wants to have cancer or heart disease
- Personal responsibility is a factor, as it often is for heart disease and cancer
- Relapse is part of the process and does not mean treatment has failed

Part 2

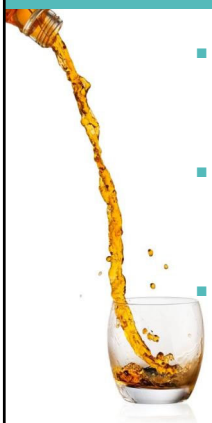
Introduction to Alcohol Use

Alcohol Use Disorder

- Alcohol use disorder is highly prevalent, highly comorbid, disabling, and often goes untreated.
- 12-month and lifetime prevalence of AUD is 13.9% and 29.1% respectively.
- Only 19.8% of those with an AUD were ever treated.
- AUD is significantly associated with MDD, bipolar 1, ASPD and borderline PD and also with panic disorder and generalized anxiety disorder.
- Alcohol leads to approximately 88,000 deaths and 2.5 million years of potential life lost each year in the US.

Centers for Disease Control and Prevention (CDC). *Alcohol-Related Disease Impact (ARDI)*. Atlanta, GA: CDC.
Epidemiology of DSM-5 Alcohol Use Disorder: Results From the National Epidemiologic Survey on Alcohol and Related Conditions III. Grant BF[1], Goldstein RB[1], Saha TD[1], Chou SP[1], Jung J[1], Zhang H[1], Pickering RP[1], Ruan WJ[1], Smith SM[1], Huang B[1], Hasin DS[2].

Definitions



- Binge drinking = 4 drinks in one sitting for women or 5 for men on at least 1 day in the past month
- Heavy alcohol use = binge drinking 5 or more days in the past month
- Low risk drinking
  - Women: no more than 3 drinks in one sitting or 7 in a week
  - Men: no more than 4 drinks on a single day or 14 in a week

Definitions from National Institute on Alcohol Abuse and Alcoholism

Standard Drinks

- **12 oz regular beer (5% alcohol)**
  - Light beer contains slightly less alcohol (4.2%)
  - Malt beverages contain approximately 7% alcohol
- **5 oz of table wine (12% alcohol)**
- **1.5 oz of 80 proof spirits (40% alcohol)**

Remember 60 as an easy way to figure out drink size and percent

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Let's Review Measures

- 1 cup = 8 oz = 5.3 drinks
- 1 pint = 2 cups = 16 oz = 10.6 drinks
- 1 quart = 2 pints = 32 oz = 21.3 drinks
- 1 gallon = 4 quarts = 128 oz = 85.3 drinks

- The above assumes 80 proof spirits

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Some Other Terms

- Nip = common airplane bottle = 50 ml = 1.7 oz = slightly more than 1 standard drink
- Fifth = fifth of a gallon = 750 ml = 25.4 oz = 17 standard drinks
- Handle = approximately half gallon = 1.75 L = 59 oz = 39.3 standard drinks

Impact on BAL

MEN

YOUR BAC AFTER ONE HOUR OF DRINKING

TOTAL NUMBER OF DRINKS	BODY WEIGHT (LBS) 120	140	160	180	200	220	240	260	280
1	.02	.01	.01	.01	.00	.00	.00	.00	.00
2	.05	.04	.03	.03	.02	.02	.02	.01	.01
3	.08	.06	.05	.05	.04	.04	.03	.03	.02
4	.11	.09	.08	.07	.06	.05	.05	.04	.04
5	.14	.12	.10	.09	.08	.07	.06	.06	.05
6	.17	.14	.12	.11	.10	.09	.08	.07	.06
7	.20	.17	.15	.13	.12	.10	.09	.08	.08
8	.23	.20	.17	.15	.13	.12	.11	.10	.09
9	.27	.23	.19	.17	.15	.14	.12	.11	.10
10	.30	.25	.22	.19	.17	.15	.14	.13	.12

WOMEN

YOUR BAC AFTER ONE HOUR OF DRINKING

TOTAL NUMBER OF DRINKS	BODY WEIGHT (LBS) 100	120	140	160	180	200	220	240	260
1	.03	.02	.02	.01	.01	.01	.00	.00	.00
2	.07	.06	.05	.04	.03	.03	.02	.02	.02
3	.12	.10	.08	.07	.06	.05	.05	.04	.04
4	.16	.13	.11	.10	.08	.07	.07	.06	.05
5	.21	.17	.14	.12	.11	.10	.09	.08	.07
6	.25	.21	.18	.15	.13	.12	.11	.10	.09
7	.30	.25	.21	.18	.16	.14	.13	.12	.11
8	.34	.28	.24	.21	.18	.16	.15	.13	.12
9	.39	.32	.27	.24	.21	.19	.17	.15	.14
10	.43	.36	.31	.27	.23	.21	.19	.17	.16

Legal Intoxication vs Clinical Intoxication

Part 3

Overview of Opioid Use Disorder

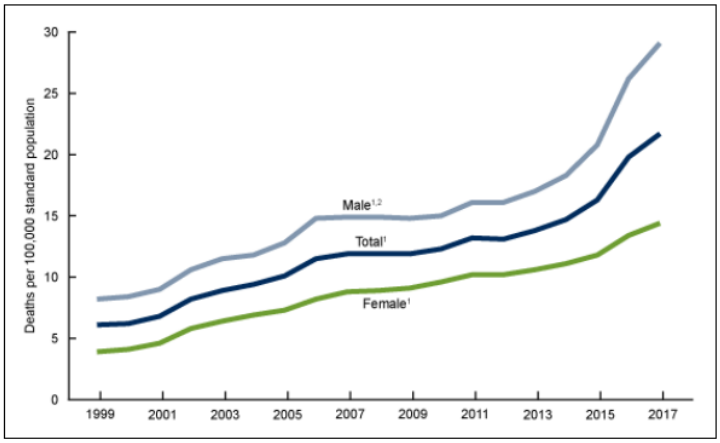
Currently

- In 2017 there were 70,237 drug overdoses in the US
- The age-adjusted rate of overdose deaths in 2017 was 9.6% higher than 2016 (19.8 per 100,000)
- West Virginia (57.8), Ohio (46.3) and Pennsylvania (44.3) had the highest rates
- The age-adjusted rate of drug overdose deaths involving synthetic opioids other than methadone (fentanyl) increased 45% between 2016 and 2017

Data from CDC

Currently

Figure 1. Age-adjusted drug overdose death rates: United States, 1999–2017



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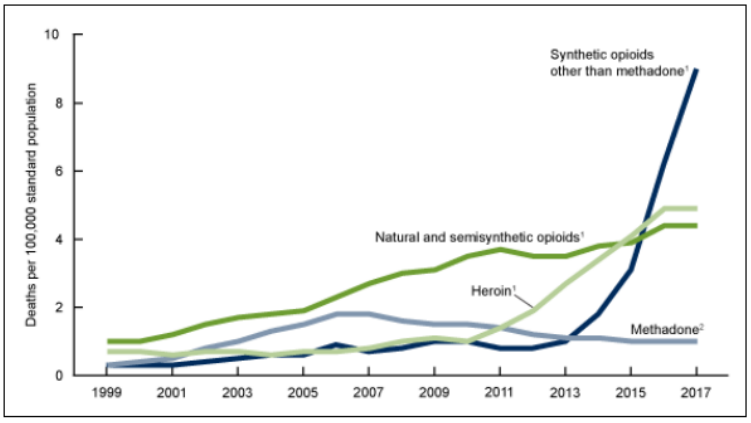
Graph from CDC

Currently

Figure 4. Age-adjusted drug overdose death rates, by opioid category: United States, 1999–2017



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Graph from CDC

Progression to Heroin

- Usually starts with prescription opioid
  - their own prescription or family/friend
- Multiple doctors/ERs until supply runs dry
  - "My doctor has no empathy so I will go elsewhere"
- Buying pills illegally
  - "They are prescription pills and I need them. I will never use heroin. That is what junkies use"
  - Money runs out ($1 per mg for oxycodone on the street)
- Switch to heroin ("I will never inject") Inject heroin ("I will never share needles")
- Share needles

Jones CM. Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers - United States, 2002-2004 and 2008-2010. Drug Alcohol Depend. 2013 Sep 1;132(1-2):95-100.

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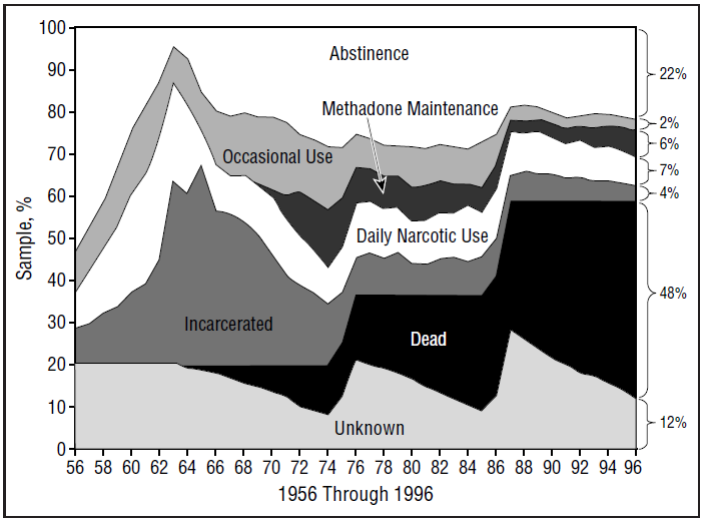
Prognosis



Hser, et. al. A 33-Year Follow-up of Narcotic Addicts. Archives of General Psychiatry, 2001;58:503-508

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High Risk Behaviors

- IV use
- Mixing with benzos/alcohol
- Previously resuscitated with Narcan

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Overdose Prevention/Education

- Do not pick up where you left off
- Know your supply
- Start low and go slow
- Do not mix substances
- Do not use alone
- Have a Narcan kit available

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Part 4

Overview of Treatment for Substance Use Disorders

Opioid Use Disorder

"A key driver of the overdose epidemic is underlying substance-use disorder. Consequently, expanding access to addiction-treatment services is an essential component of a comprehensive response."

Volkow, Nora D., et al. "Medication-assisted therapies—tackling the opioid-overdose epidemic." *New England Journal of Medicine* 370.22 (2014): 2063-2066.

Opioid Use Disorder

"Drug dependence generally has been treated as if it were an acute illness. Review of results suggest that long-term care strategies of medication management and continued monitoring produce lasting benefits. Drug dependence should be insured, treated, and evaluated like other chronic illnesses."

McLellan, A. Thomas, et al. "Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation." *Jama* 284.13 (2000): 1689-1695.

Justice System

- Imagine if cancer patients routinely came through the justice system for referral to treatment and recommendations by the courts
- The justice system is a very large referral source for substance use treatment
- Willingness to make a change can often by spurred by legal consequences
- State and local prosecutors are often at the forefront and act as gatekeepers to the system
- We want to reduce the supply of drugs by targeting traffickers and dealers, we also want to reduce the demand through prevention and recovery support initiatives

Justice System

- With a solid foundation in the understanding of the disease process of addiction, the basic terminology associated with it and the appropriate treatment options, YOU can make a big difference in the lives of those struggling with substance use disorders!

Principles of Effective Treatment

1. Addiction is a complex but treatable disease that affects brain function and behavior

National Institute on Drug Abuse

Principles of Effective Treatment

2. No single treatment is appropriate for everyone

Principles of Effective Treatment

3. Treatment needs to be readily available

Principles of Effective Treatment

4. Effective treatment attends to multiple needs of the individual, not just the drug use

Principles of Effective Treatment

5. Remaining in treatment for an adequate period of time is critical

Principles of Effective Treatment

6. Behavioral therapies – including individual, family or group counseling – are the most commonly used forms of treatment

Principles of Effective Treatment

7. Medications are an important element of treatment for many patients, especially when combined with counseling and other behavioral therapies

Principles of Effective Treatment

8. An individual's treatment and services plan must be assessed continually and modified as necessary to ensure that it meets the changing needs

Principles of Effective Treatment

9. Many drug-addicted individuals also have other mental disorders

Principles of Effective Treatment

10. Medically assisted detoxification is only the first stage of addiction treatment and by itself does little to change the long-term drug use

Principles of Effective Treatment

11. Treatment does not need to be voluntary to be effective

Principles of Effective Treatment

12. Drug use during treatment must be monitored continuously, as lapses during treatment do occur

Principles of Effective Treatment

13. Treatment programs should test patients for the presence of HIV/AIDS, hepatitis B and C, tuberculosis, and other infectious diseases as well as provide targeted risk-reduction counseling, linking patients to treatment if necessary

Part 4a

Medication Assisted Treatments

Medication Assisted Treatment

- Improves patient survival
- No one medication – must be individualized
- Increases retention in treatment
- Decreases illicit opioid and other criminal activity
- Increases ability to gain and maintain employment
- Improves birth outcomes among women who have substance use disorders and are pregnant

Data from Substance Abuse and Mental Health Services Administration

Alcohol Use Disorder

- Disulfiram
- Naltrexone
- Extended-Release Naltrexone
- Acamprosate

Disulfiram (Antabuse)

- Increasing levels of acetaldehyde causes an aversive reaction
- Leads to tachycardia, flushing, nausea, vomiting, hypotension
- Within hours of first dose and days to weeks after last dose
- Must fully educate patients about these risks
- Most effective with motivated patients
- Most effective with supervised administration

Naltrexone

- Naltrexone reduces cravings and the positive reinforcing effects of alcohol
- Naltrexone reduces amount consumed when drinking

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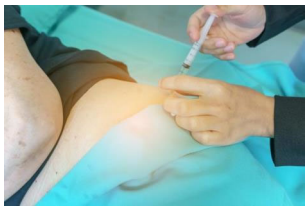
Extended Release Naltrexone (Vivitrol™)

- Once-a-month and injectable into gluteal muscle
- Patients had longer time of sobriety and fewer drinking days per month
- Particularly effective following at least 4 days of abstinence, though may also be used in those actively drinking



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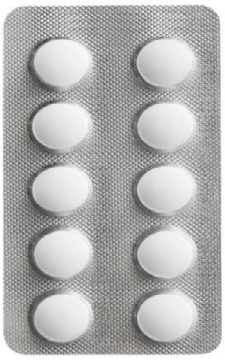
Acamprosate (Campral™)

- Reduces the risk of return to drinking
- Increases the duration of abstinence
- Likely as effective as naltrexone



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Opioid Use Disorder

- Methadone
- Buprenorphine
- Extended-Release Naltrexone

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Methadone

- Being a full agonist with a long half-life, methadone suppresses signs and symptoms of opioid withdrawal by reaching a steady-state level with once daily dosing
- It eliminates opioid cravings
- May also serve to block the reinforcing effects of illicit opioids

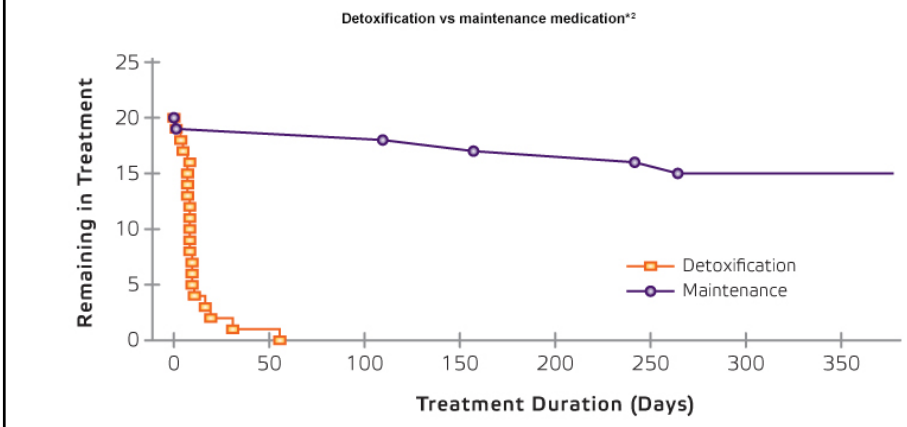
Methadone

- For treatment of OUD, methadone must be administered in a federally regulated opioid treatment program
- Patients are seen daily for administered dosing with gradually increasing take home privileges on symptom improvement
- Once per week visits is the least restrictive

Buprenorphine

- Unlike Methadone, buprenorphine is a partial activator at the receptor, hence is safer with less side effects
- Unlike Methadone, buprenorphine can be used in an office-based setting
- Partial agonist effect serves to reduce cravings and eliminate withdrawal
- Providers are required to do additional training prior to prescribing

Medication Assisted Treatment



Kakko, Johan, et al. "1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomized, placebo-controlled trial." *The Lancet* 361.9358 (2003): 662-668.

Extended-Release Naltrexone

- Not a controlled substance, not subject to restrictions, no diversion potential, no addiction potential
- Once-monthly injection, which improves compliance
- May be as effective as buprenorphine once initiated

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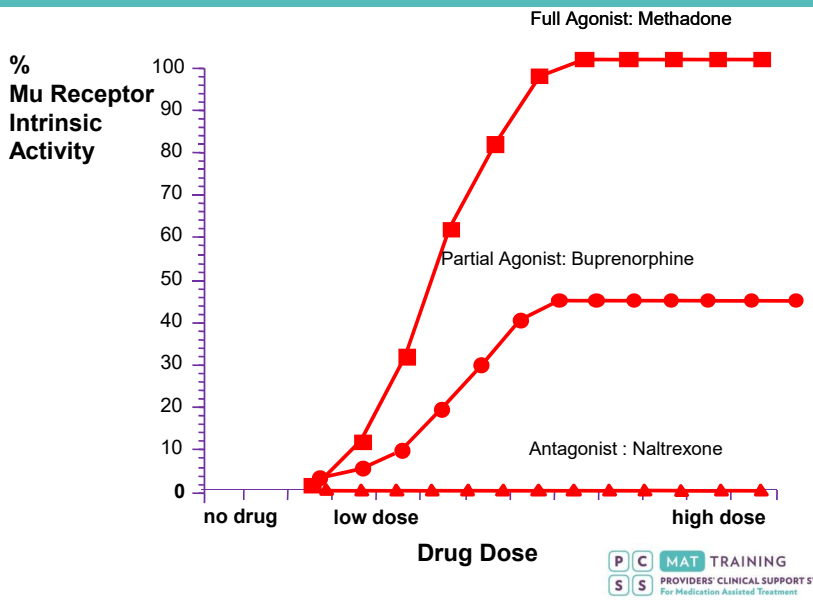
Pharmacotherapy for Opioid Use Disorder



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Medication Assisted Treatment

- The period following incarceration is a time of increased risk of overdose death due to loss of tolerance
- The period during incarceration is an ideal time to initiate treatment
- One such study:
  - Continued MAT at the time of commitment
  - Screened new commitments and initiated MAT
  - Screened those about to be released and initiated MAT
  - Following this comprehensive approach, overdose deaths decreased by 61% among those recently released from prison

Green, TC, et. al. Postincarceration Fatal Overdoses After Implementing Medications for Addiction Treatment in a Statewide Correctional System. JAMA Psychiatry, 75(4):405-406, 2018

Medication Assisted Treatment

- Duration of treatment is an individualized decision, with no one correct answer for all patients
- Some patients will remain on MAT indefinitely, much as one might stay on other medications indefinitely
- MAT is NOT “replacing one addiction for another”

Part 4b

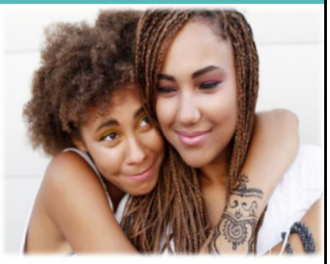
Psychosocial treatments and supports

Cognitive Behavioral Therapy

- In maladaptive behavioral patterns, learning plays a critical role
- Teach patients to identify and correct problematic behaviors by applying learned skills
- Anticipating problems and enhancing self control by developing coping strategies
- Exploring consequences, self monitoring for cravings early and identifying risky situations

CRAFT

- Community Reinforcement and Family Training
  - Increase family compliance with an intervention to increase the rate of treatment for the patient
  - Motivation building, functional analysis, communication skill training, life enrichment and other skills
  - Targets the family of those with substance use disorders
  - Has been shown to improve engagement in treatment



Contingency Management

- Highly effective in increasing treatment retention and promoting abstinence
- Provides tangible rewards to reinforce positive behaviors, such as abstinence
- Voucher based reinforcement involves vouchers that are exchanged for goods and services
- Vouchers increase in value with more negative urine drug screens
- Prize incentives provide chances to win cash prizes
- Each negative urine is a chance to win

Psychosocial Recovery Supports (Not Treatments)

- Psychosocial recovery supports, while not evidence-based therapies, are potentially very important and very helpful.
- When medications and other evidence-based therapies are not available, psychosocial supports may be all that is available
- The primary psychosocial supports include Alcoholics Anonymous, SMART Recovery and supportive psychotherapy

Alcoholics Anonymous

- The recovery program
  - Meetings (90 in 90)
  - Sponsorship
  - Step work
  - Commitments

SMART Recovery

- Self Management And Recovery Training
- Alternative or supplement to AA
- Non confrontational motivational, behavioral and cognitive methods
- Meetings are integral to the program
- SMART recovery relies less on religion and spirituality
- Four point program
  - Building motivation
  - Coping with urges
  - Problem solving
  - Lifestyle balance

Horvath, T. and Yeterian, J. "SMART Recovery: Self-Empowering, Science-Based Addiction Recovery Support. Journal of Groups in Addiction Recovery, 7:102-117, 2012

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Supportive Recovery Psychotherapy

- The primary goal is to strengthen the ability to cope with stressors
- Close, empathetic listening
- Reinforcing and strengthening resilience
- Building and maintaining self-esteem
- Encourage sharing of feelings and thoughts

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Children in Home

- When considering the stability of the home environment, keep the following fundamental concepts in mind:
  - Addiction is a complex and treatable disease – it is not as simple as a choice to stop
  - Effective treatment tends to multiple needs of the individual
  - Length of time in treatment is critical
  - The best treatment plan is comprehensive that includes medications, behavioral therapies and attention to mental health

Children in Home

- What to look for:
  - The defendant should be involved in a multi-modal treatment plan, ideally involving medications (for opioid use or alcohol use) in conjunction with a psychosocial program
  - The defendant should be in treatment for their mental health, if applicable. And it usually is applicable.
  - There should be an ongoing commitment to treatment, even with a significant period of sobriety
  - Structure is always helpful, even something as simple as routine urine drug screens and weekly check-ins for medications

Children in Home

- What to look for:
  - The home environment should be assessed for stability and safety
  - Stable family members should be recruited for assistance
  - Much like we would not expect diabetes to get better with incarceration alone, we would not expect addiction to either
  - Like other illnesses, addiction is a chronic illness that responds well to treatment, when it is done well

Take Home Messages

- Substance use disorders are a chronic, relapsing, remitting disease that respond best to a comprehensive and individualized treatment plan
- Opioid use disorder is particularly deadly – fortunately medication assisted treatment is readily available and effective
- The most effective treatment strategy for substance use disorders generally involves the use of medications in combination with a psychosocial treatment or support program

What Can You Do?

- The justice system is an entry-way for many people suffering from substance use disorders
- Appreciate that punishment alone does not act as treatment for a disease process
- Appreciate that medication assisted treatment for substance use disorders is safe, effective and life-saving for many
- When possible, use your authority to mandate treatment, particularly a multimodal approach
- Appreciate that initiating treatment during incarceration can be particularly important given the risk of overdose death upon release

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What Can You Do?

- Build a relationship with regional and local treatment providers and experts in the field
- Stay up to date on the latest available treatments and their efficacy
- Utilize the services of national organizations

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How Can We Help?

- **The American Academy of Addiction Psychiatry (AAAP) is working with the Justice System**
  - Created a Law and Addiction Standing Committee
  - Working with The National Judicial College and the National Judicial Opioid Taskforce
    - *Creating a resource guide for judges and justice staff and supporting resources*
  - Worked with the National Association of Drug Court Professionals created modules on Introduction to MAT -

Opportunities

- **The American Academy of Addiction Psychiatry (AAAP) has two national initiatives funded by Substance Abuse Mental Health Services Administration (SAMHSA) to provide training, education and mentoring at no cost.**
  - Providers Clinical Support System – PCSS-MAT focuses on clinicians
  - States Targeted Response- Technical Assistance (STR-TA) provide training and education for anyone—clinical, judges, families, and individuals.