

The Role of Medication for Opioid Use Disorder in Fighting the Opioid Crisis July 14, 2022



#### **Featured Presenters**



#### Dr. James F. Baird IV, DO, FACOEP, FACOI, FAAEM, FHELA

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Dr. James F. Baird, IV, DO, is the Founding Emergency Medicine Residency Program Director and a practicing emergency medicine physician at Inspira Health – Mullica Hill. He has earned the designation of Associate Professor of Emergency Medicine at Rowan University – School of Osteopathic Medicine. He is medical director of the Medications for Addiction Treatment (MAT) program at My Friends House Treatment Center in Woodbury Heights and one of the region's experts on the topic of healthcare's role in stemming opioid addiction in South Jersey. Dr. Baird is also the medical director of education for Gloucester County EMS EMT Training Academy. A 2009 graduate of the Philadelphia College of Osteopathic Medicine (PCOM), Dr. Baird is triple-board certified in emergency medicine, internal medicine and has a sub-specialty in addiction medicine.



#### Herbert Kaldany, DO <u>NJ Department of Corrections</u> Director of Psychiatry, Addictions and Medical Services

Herbert Kaldany serves as the psychiatry director for the New Jersey Department of Corrections and oversees addictions programs and services. He began working full time in the NJ DOC as an attending physician before being named the NJ DOC's first psychiatry director in 2004. In this position, Kaldany has implemented new policies and procedures to ensure better practices to administer mental health care and the disciplinary system for those with mental illness. In 2011, he was tasked with revamping how the DOC addresses addiction in the midst of the opioid epidemic and integrated addictions care into somatic and behavioral health services. Kaldany earned a Bachelor of Science degree in Biochemistry from Stevens Institute of Technology, as well as a Master of Science in Biochemistry from Fairleigh Dickinson University. He received his Doctor of Osteopathy degree from Rowan University (formerly UMDNJ) and completed a psychiatry residency from Rowan and was board certified in 1998.



#### Tim Seplaki, BS, NRP, CPM Chief, EMS Data and Intelligence NJ Department of Health, Office of EMS

Tim Seplaki serves as the Chief of EMS Data and Technology for the New Jersey Department of Health, Office of Emergency Medical Services (EMS). His responsibilities include the implementation, coordination and oversight of the electronic patient care reporting and EMS data collection system for New Jersey. Tim's work includes overseeing and coordinating EMS bio-surveillance data of suspected opioid overdose and other opioid-related programs. He has been with the New Jersey Department of Health for 18 years and has been involved in EMS for 30 years. Tim is a nationally registered paramedic with 24 years of experience and has worked in the field on the ground as a Mobile Intensive Care Paramedic and air as a Flight Paramedic. He received his Bachelor of Science degree with a concentration in EMS Management from George Washington University and is a Certified Public Manager.



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# What is MAT?

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## Objectives

- 1. Define addiction (Substance Use Disorder)
- 2. Define MAT (Medication Assisted Treatment) for Opioids
- **3.** Identify the three main types of medications (MAT) used for treatment of Opioid Use Disorder
- 4. Understand how these medications help people suffering from an opioid addiction

## Why do people use drugs?

According to the National Institute on Drug Abuse (NIDA), people begin taking drugs for a variety of reasons, including:

- **1**. to feel good feeling of pleasure, "high" or "intoxication"
- 2. to feel better relieve stress, forget problems, or feel numb
- **3.** to do better improve performance or thinking
- 4. curiosity and peer pressure or experimenting

## What is addiction?

Substance use disorder (SUD)

A complex condition in which there is uncontrolled use of a substance despite harmful consequence.

People with SUD have an intense focus on using a certain substance(s) such as alcohol, tobacco, or street drugs, to the point where the person's ability to function in day-to-day life becomes impaired.

People keep using the substance even when they know it is causing, or will cause, problems.

# What effect does pleasure have on the brain chemistry?

- **1**. The neurotransmitter **DOPAMINE** is central to Substance Use Disorders.
- Whenever the reward circuit is activated by a healthy, pleasurable experience, a burst of dopamine signals that something important is happening that needs to be remembered.
- 3. This dopamine signal causes changes in neural connectivity that make it easier to repeat the activity again and again without thinking about it, leading to the formation of habits



#### Some drugs target the brain's pleasure center

#### Brain reward (dopamine pathways)



These brain circuits are important for natural rewards such as food, music, and sex.



#### How drugs can increase dopamine



#### While eating food

While using cocaine

Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is denied.

These brain circuits are important for nature rewards such as food, music, and sex. Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is denied.

# Why is the effect with drugs different?

- Just as drugs produce intense euphoria, they also produce much larger surges of dopamine, powerfully reinforcing the connection between consumption of the drug, the resulting pleasure, and all the external cues linked to the experience.
- 2. "Teaches" the brain to seek drugs at the expense of other, healthier goals and activities.
- Cues in a person's daily routine or environment that have become linked with drug use because of changes to the reward circuit can trigger uncontrollable cravings whenever the person is exposed to these cues, even if the drug itself is not available.
- 4. This learned "reflex" can last a long time, even in people who haven't used drugs in many years. For example, people who have been drug free for a decade can experience cravings when returning to an old neighborhood or house where they used drugs. Like riding a bike, the brain remembers.

Protective factors		<b>Risk factors</b>	
	Belonging to a vulnerable group	Social and Cultural Factors	Interpersonal and Individual Risk factors
<ul> <li>Positive temperament</li> <li>Intellectual ability</li> <li>Positive and supportive family environment</li> <li>Social support system</li> <li>Caring relationship with at least one adult</li> <li>In education/ omployment/ training</li> </ul>	<ul> <li>Looked after children</li> <li>School non-attenders</li> <li>Mental health problems</li> <li>Drug misuse by parents</li> <li>Abuse within the family</li> <li>Homeless</li> <li>Young offenders</li> <li>Young sex workers</li> </ul>	<ul> <li>High levels of neighbourhood poverty and decay</li> <li>High levels of neighbourhood crime</li> <li>Easy drug availability</li> <li>Widespread social acceptance of alcohol and drug use</li> <li>Lack of knowledge and perception of drug-related risks</li> </ul>	<ul> <li>Physiological and psychological factors</li> <li>Family dysfunction</li> <li>Behavioural difficulties</li> <li>Academic problems</li> <li>Association with peers who use alcohol and drugs</li> <li>Early onset of tobacco smoking</li> <li>Early onset of alcohol</li> </ul>

Protection vs. Risk

## What results from a SUD?

- **1**. People with a SUD may have distorted thinking and behaviors.
- 2. Physical changes in the brain's structure and function are what cause people to have intense cravings, changes in personality, abnormal movements, and other behaviors.
- **3**. Brain imaging studies show changes in the areas of the brain that relate to judgment, decision making, learning, memory, and behavioral control.
- 4. Repeated substance use can cause changes in how the brain functions.
- 5. These changes can last long after the immediate effects of the substance wears off.

# What are the physical brain changes?

Red = D2 (Dopamine) Receptors

With regular, escalating substance use....downregulation of D2-receptors



## What happens now?

- **1**. This downregulation of dopamine receptors:
  - a. why a person who misuses drugs eventually feels flat
    - 1) without motivation
    - 2) lifeless, and/or depressed
    - 3) unable to enjoy things that were previously pleasurable.
- Now, the person needs to keep taking drugs to experience even a normal level of reward which only makes the problem worse.

#### What happens now?

The person will often need to take larger amounts of the drug to produce the familiar high = tolerance



## Frontal Lobe

Brain-imaging studies in humans = repeated drug use causes disruptions in the brain's highly evolved frontal cortex, which regulates cognitive activities such as decision-making, response inhibition, planning and memory.

Imaging studies are showing glucose metabolism in the frontal lobe.



## Medication Assisted Treatment

New Terminology\*

- Medications for Addiction Treatment (MAT)
- Medication for Opioid Use Disorder (MOUD)

# What is MAT?



Suboxone

 Medication-Assisted Treatment or Medications for Addiction Treatment: the use of medications, in combination with counseling and behavioral therapies, to provide a "whole-patient" approach to the treatment of substance use disorders.

 The prescribed medication will normalize brain chemistry, block euphoric effects, relieve physiological cravings, and normalize body functions without the negative effects of the misused drug.





How Medications for OUD Work In The Brain? Figure 1 How OUD Medications Work in the Brain



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# **Bottom Line**

# Everyday drug craving suppression!

Consider cravings as the inciting event, "the seed that grows", that leads to a slip or full relapse!

# MAT analogy

- Type 2 Diabetes is defined by the American diet
  - High carbohydrates in excess for cheap prices
  - The buffet. A place where you can eat until you vomit for a low prices. Opioids are like a buffet for the disease of addiction.
- How many Americans with diabetes can just stop eating?
  - Why we need diabetes medications, and this is why diabetes medications help to significantly decrease the effects of diabetes on the body
  - Medications for diabetes decrease heart attacks, strokes, high blood pressure, high cholesterol, infections, DEATH, etc.

# **Benefits of MAT**

1. The ultimate goal of MAT and addiction treatment in general is full recovery from drug use, including the ability to live a self-directed life.

#### 2. Medications for OUD have been shown to:

- a. Improve patient survival and decrease overdoses
- b. Decrease overdose death rates when on MAT and use drugs (i.e. relapse)
- c. Decrease opioid and injection drug use and other risky behaviors (i.e. IVDU, trading sex for money/drugs)
- d. Increase retention in treatment
- e. Decrease other criminal activity among people with substance use disorders
- f. Increase patients' ability to gain and maintain employment
- g. Improve birth outcomes among women who have substance use disorders and are pregnant
- h. Lowers a person's risk of contracting HIV or hepatitis C by reducing the potential for relapse.
- i. Improvements in physical and mental health and social functioning in general

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<u>Medications for OUD in Corrections</u> <u>A Team Approach to the Shift</u> <u>The NJ DOC Experience</u>

## Presented for NJCARES Webinar July 14, 2022

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#### Mission and Objectives

- Mission NJ DOC experience in shifting opioids for pain management to Addiction management
- Objective 1 See data results of shifting opioids from pain management to Addiction.
- Objective 2 Impact of Laws on Addiction
- Objective 3 Addiction pictographs
- Objective 4 The NJ DOC Culture shift
- Objective 5 The NJ Law Enforcement Shift
- Objective 6 The NJ Community Shift
- Challenges with Bias and Connections





#### Combining both graphs in real numbers

Illicit vs Prescribed Opioids and Buprenorphine



#### Objective 2

#### New NJ Opioid Law: 2017

#### **First Prescription**

#### Second Prescription

- More than 1 year since initial
- NJ PMP reviewed
- IR Formulations only
- Lowest effective dose
- Up to 5 days
- Documentation requirements

- Pain consistent with first prescription
- 4 days has elapsed
- NJ PMP reviewed
- Lowest effective dose
- Up to total of 30 days combined
- Documentation requirements

#### Medication Assisted Treatment

#### 1) Methadone

- Federally-regulated methadone maintenance programs (1960s)
- o Decreases overdose deaths, improves psychosocial adjustment, reduces criminal activity, decreases rates of HIV/HCV

#### 2) **Buprenorphine** 8mg BID

- Used since 2002
- DATA 2000 waiver allows office-based prescriptions
- All NJ DOC prescribers obtained in 2014

#### 3) Naltrexone (or Vivitrol<sup>®</sup> injection) 380mg IM q 4 wks

80 - 120mg daily

• Opioid antagonist (blocks receptor)

Objective 3

#### What does Modern Science Teach Us About Addiction

- Brain Disease/Disorder
- Treat the brain and the behaviors shift
- Just Say No campaign remains a huge failure
- Is addiction a choice?





National Institute on Drug Abuse, www.nida.nih.gov, 2000.





New circuits created from prefrontal cortex (glutamate)

#### MRI Scans of Healthy Children and Teens Over Time



### Natural Rewards and Dopamine Levels



Adapted from: Di Chiara et al, *Neuroscience*, 1999 Adapted from: Fiorino and Phillips, *J Neuroscience*, 1997

#### **Effects of Drugs on Dopamine Levels**



Adapted from: Di Chiara and Imperato, *Proceedings of the National Academy of Sciences USA*, 1988; courtesy of Nora D Volkow, MD

#### **Effects of Drugs on Dopamine Levels**



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J Katz: Drug Deaths in America Are Rising Faster than Ever, NYT 6.5.17

# National Trends

- Drug overdoses are the leading cause of death in Americans under 50 years old
- 80% of new heroin users first misused prescription opioids



#### Objective 4 The NJ DOC Culture Shift

- Started in 2014 by reducing opioid pain med Rxs
- Shift from TC Model to Holistic Medical Model
- Licensed SUD treatment ASAM adherent 2015
- Open SUD treatment prison 2016
- MAT being incorporated 2017– clinical bias
- Peer Navigator/Intensive Recovery Treatment Support at release – 2018 synergy with MAT
- Peer Specialists at Intake 2020
- Personal Bias  $\leftarrow \leftarrow \rightarrow$  System Bias
- Training is Key
- Train Uniform and civilian staff together

Objective 5 The NJ Law Enforcement Cultural Shift

- Independent to NJ DOC process until 2017
- Drug court 2014 no MAT until 2017
- Bail reform impact 2019



- Introduction of Methadone treatment in ACJ, MCJ
- Expansion to other Jails
- NJ DOC DOH DMHAS Collaboration 2019
- Introduction of Centers Of Excellence [COEs]
- CCJ Re-Entry Efforts
- Information Exchange barriers HPI, 42CFR Part 2



- Increase of MAT in rehab centers
- Centers Of Excellence

#### Bringing All These Pieces Together is Complex

- Community -> Corrections -> Community
- Diversion > Conversion > Dispersion
- Connecting these 3 systems Jails, Prisons, Comm.
   Parole SUD treatment to divert from jails and prisons
   Jail to Drug / Parouwy Court
  - Jail to Drug/Recovery Court
  - Jail Re-Entry to Community
  - o Jail Release to State Prison
- Prison Re-Entry to Parole
- Prison Re-Entry at Max Out to Community

#### **Correctional Outcomes**

• 129  $\pmb{\uparrow}$  in risk of death in first 30 days post release

#### • IRTS on follow up

- Overdoses and Deaths
- o Rides
- Phones
- Holistic Harm Reduction
  - HIV, STDs, Hepatitis A, B, C
- Treatment Reduces Drug Diversion
  - NJ DOC example



#### THANK YOU!!



<u>Tim Seplaki, BS, NRP, CPM</u> <u>Chief, EMS Data and Intelligence</u> <u>NJ Department of Health, Office of EMS</u>



# NJ Emergency Medical Services and the Opioid Crisis





Timothy Seplaki NJ Department of Health Office of EMS



# EMS in New Jersey



- Community-Based Basic Life Support
  - 23,940 Emergency Medical Technicians (EMTs)
- Hospital-Based Regional Advanced Life Support
  - 1,752 Mobile Intensive Care Paramedics





DARAMEDIO



# **Overdose Statistics**



#### New Jersey's Overdose Epidemic:

- 8 Overdose Deaths per day
- New Jersey's First Responders treat 35 opioid overdoses per day
- ~ Half will refuse transport or leave the ED prior to being seen
- EMS taught to treat the physical symptoms
- Breaking Stigma "choose to use" vs. SUD as a chronic illness

EMS is often the only Medical Professional patients will see post overdose



# Making a Change

## **EMS** Training

- Training on Substance Use Disorder (SUD)
- Five Minutes To Help Program Online
- Trauma-Informed Care Training
- Resource Kits











### P.L.2021, c.153

• Permits NJ paramedics to administer buprenorphine

P.L.2021, c.152

• Permits First Responder to leave naloxone behind

Both Laws passed on July 2, 2021



## **Medication Assisted Treatment (MAT) & EMS**

# Buprenorphine

- First statewide program
- Started Aug 2019
- >150 Patients accepted MAT
- 36% Attended first appointment
- 69% Still in the program after 30 days





# Naloxone Leave Behind

- Standing Order for First Responders & Pharmacies
- DHS Naloxone Program for First Responders
- EMS Harm Reduction / Treatment Resource Kits





# **Moving Forward**



- Expansion of Buprenorphine Program
- Expansion of Treatment / Harm Reduction through EMS
  - Partnerships with AG and DHS
- Expansion of Naloxone availability
- Expanded First Responder Training
  - Mental Health and SUD

#### *Good Provider Care* = *Good Patient Care*



# **QUESTIONS?**





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#### UPCOMING WEBINAR Knock Out Opioid Abuse Day Training

11 a.m. Thursday, August 11, 2022 Register at KnockOutDay.DrugFreeNJ.org/events

