Medications for Opioid Use Disorder: Why, What, How?

Sandrine Pirard, MD, PhD, MPH
West Region Chief Medical officer

Agenda

1. Understanding Addiction
2. Medications for Opioid Use Disorder (MOUD)
3. Initiatives to Support Adoption of MOUD
4. Resources

Chapter 1:
Understanding Addiction

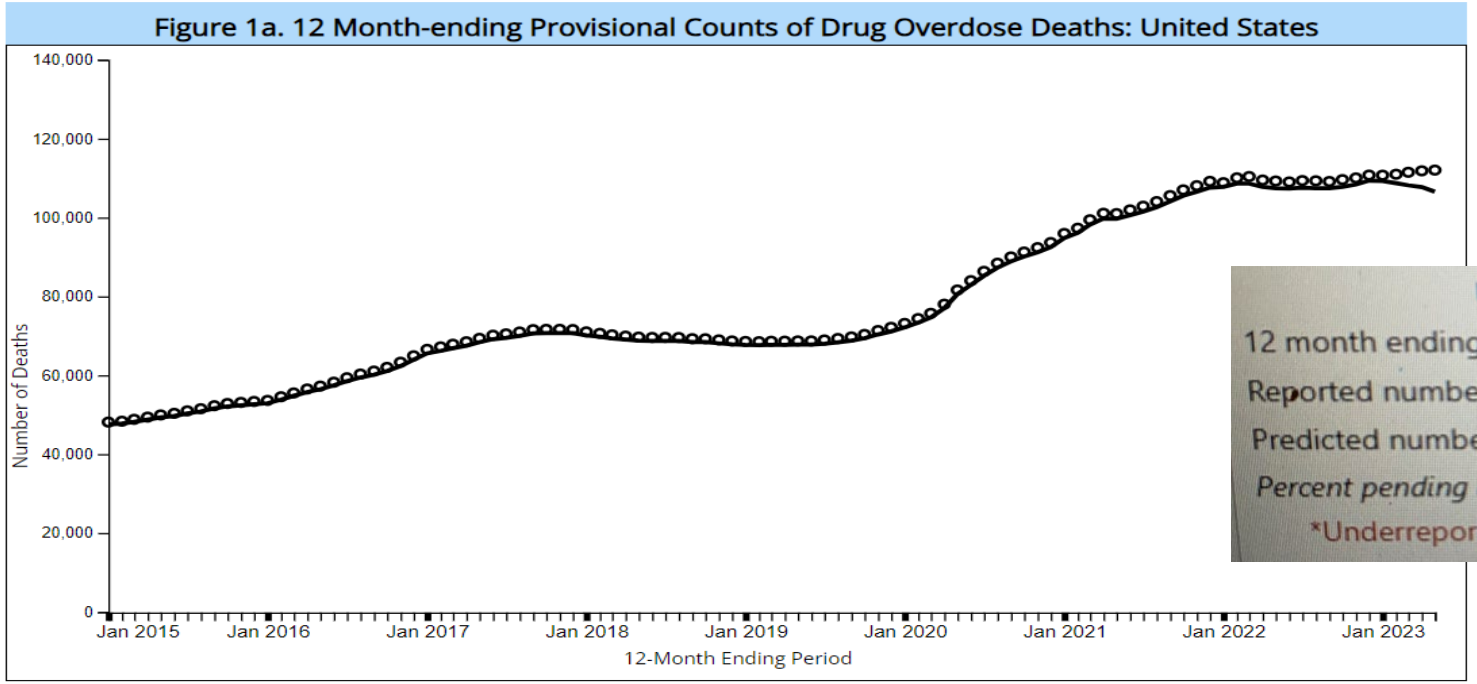
Drug overdose deaths top 100,000 annually for the first time, driven by fentanyl, CDC data show

By Deidre McPhillips, CNN

Updated 12:27 PM EST, Wed November 17, 2021

12 Month-ending Provisional Number and Percent Change of Drug Overdose Deaths

Based on data available for analysis on: October 1, 2023



United States	
12 month ending period:	May 2023
Reported number of deaths:	106,539
Predicted number of deaths:	112,024
Percent pending investigation:	*0.43*

*Underreported due to incomplete data.

Products - Vital Statistics Rapid Release - Provisional Drug Overdose Data (cdc.gov)

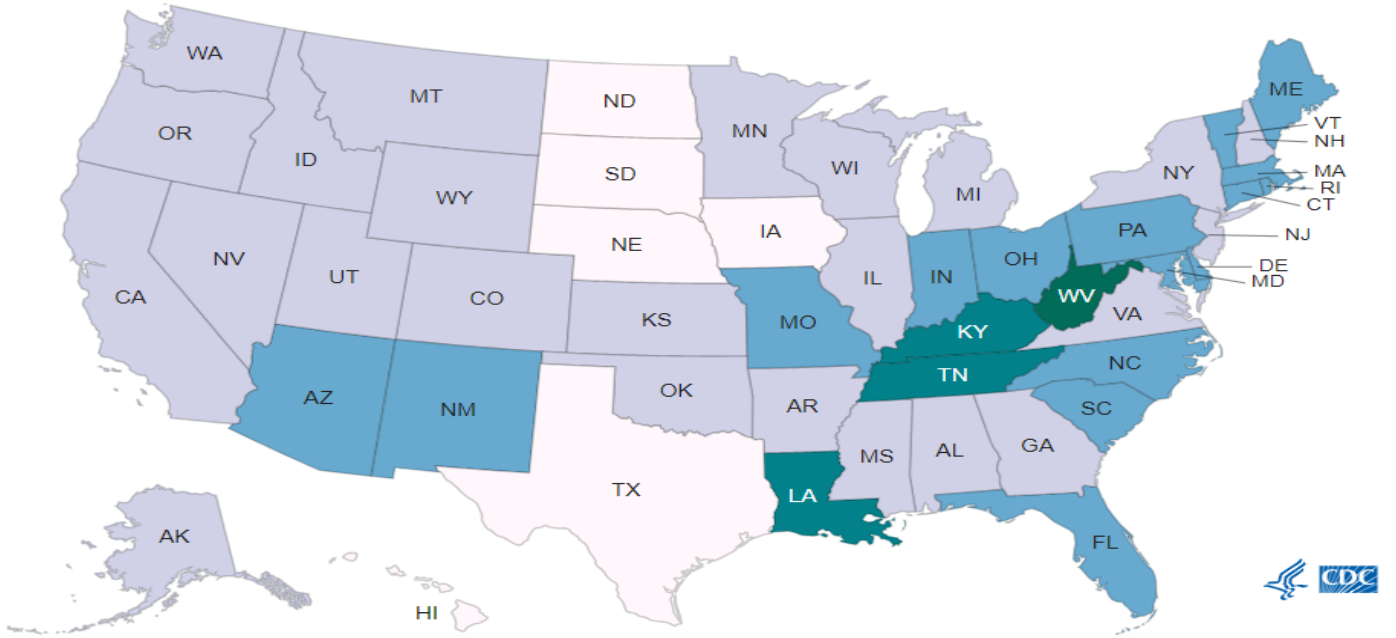
Drug Overdose Mortality by State

Print

Make a selection from the filters to change the visualization information.

Year

2021



Age-Adjusted Death Rates[1]

- 0 - < 18.18
- 18.18 - < 36.36
- 36.36 - < 54.54
- 54.54 - < 72.72
- 72.72 - 90.9

https://www.cdc.gov/nchs/pressroom/sosmap/drug_poisoning_mortality/drug_poisoning.htm#print

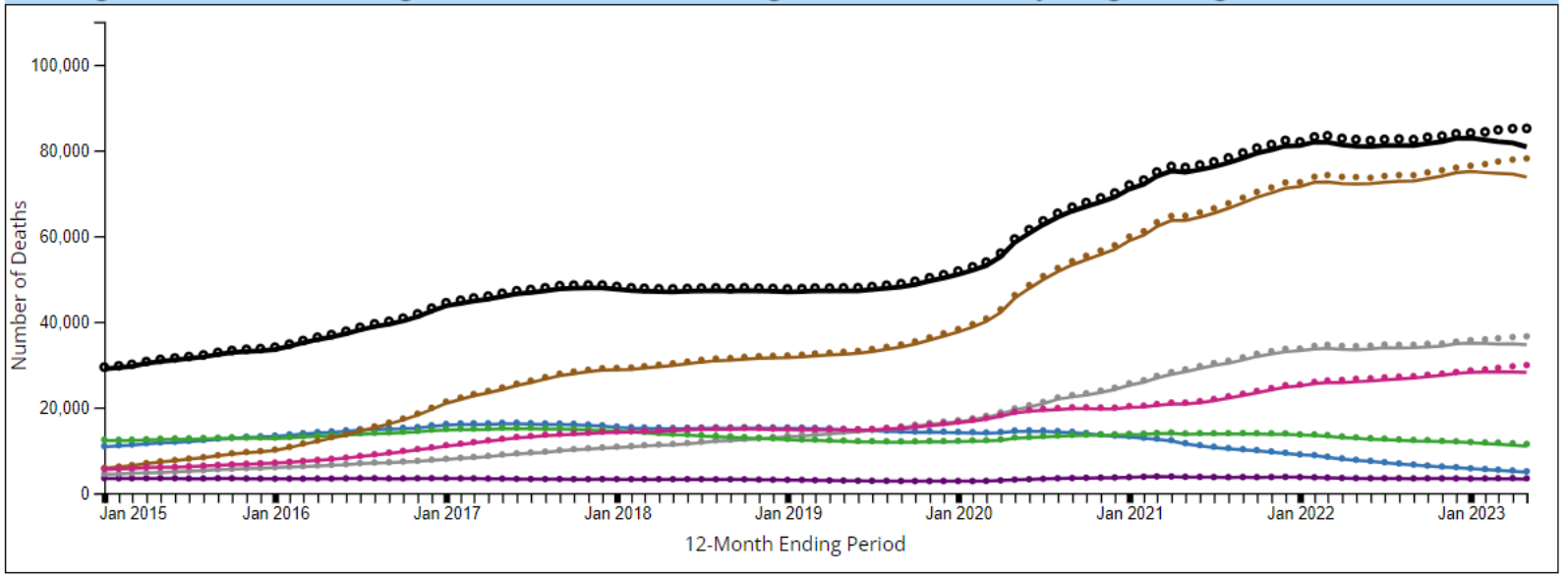
Based on data available for analysis on: October 1, 2023

*After opening the **drug class dropdown**, click the top of the dropdown menu again to make the checkboxes disappear.*

Select Jurisdiction: United States

Select specific drugs or drug classes: Select drug class

Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class: United States



Legend for Drug or Drug Class

- Cocaine (T40.5)
- Heroin (T40.1)
- Methadone (T40.3)
- Natural & semi-synthetic opioids (T40.2)
- Opioids (T40.0-T40.4,T40.6)
- Psychostimulants with abuse potential (T43.6)
- Synthetic opioids, excl. methadone (T40.4)

---- Reported Value

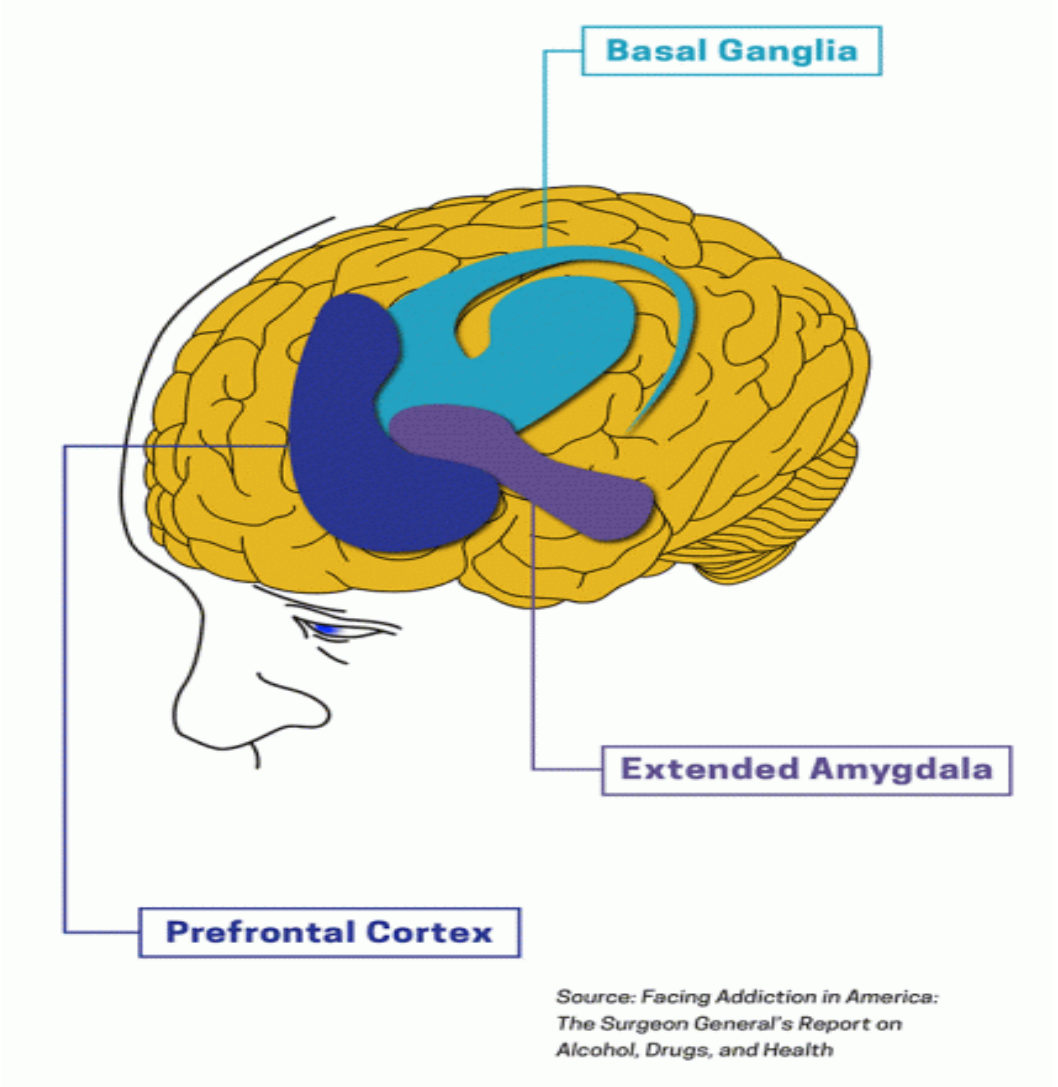
O Predicted Value

[Products - Vital Statistics Rapid Release - Provisional Drug Overdose Data (cdc.gov)]

What is Addiction?

Lack of moral principles or willpower
or
Complex disease?

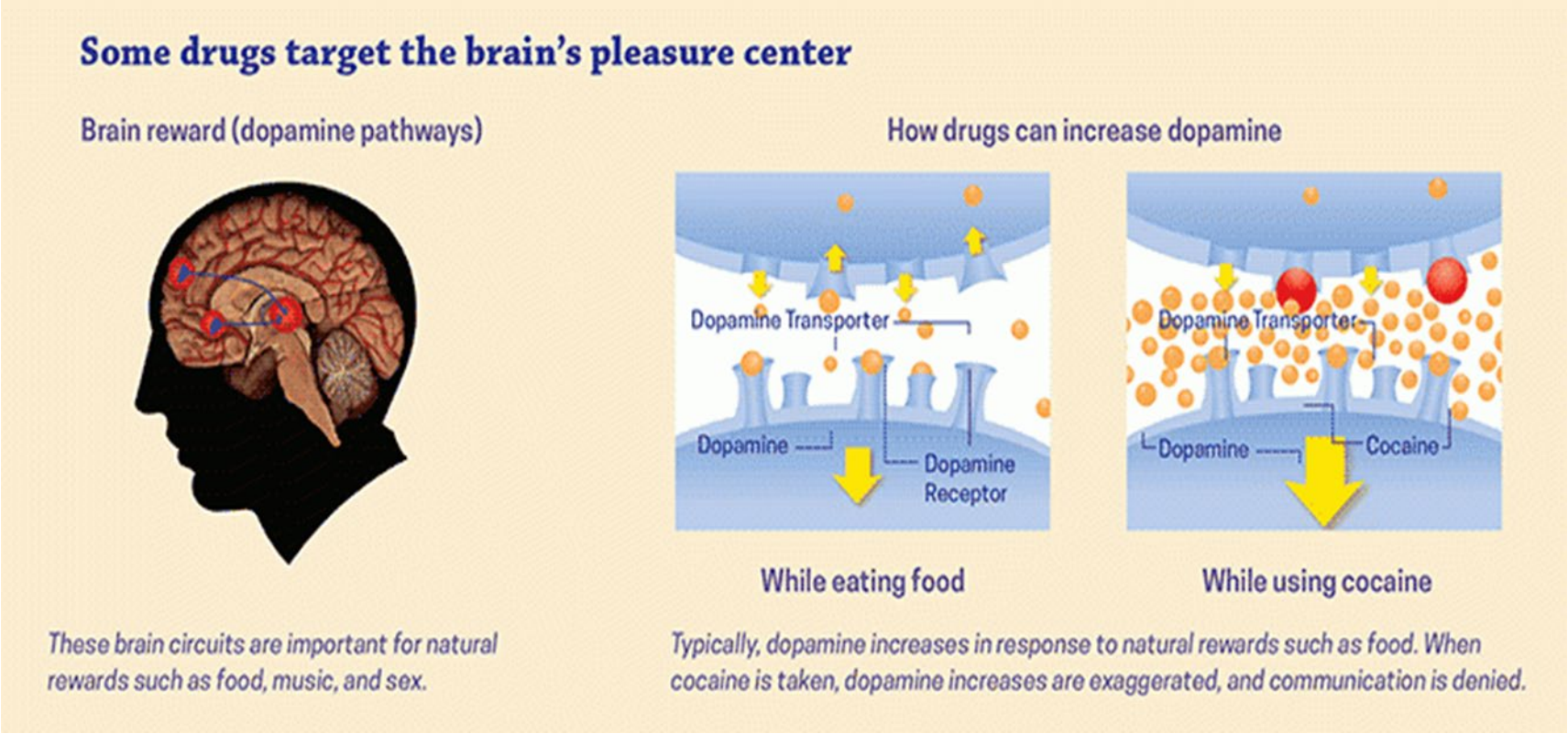
Addiction and the Brain



[Drugs, Brains, and Behavior: The Science of Addiction: Drugs and the Brain | NIDA (nih.gov)]

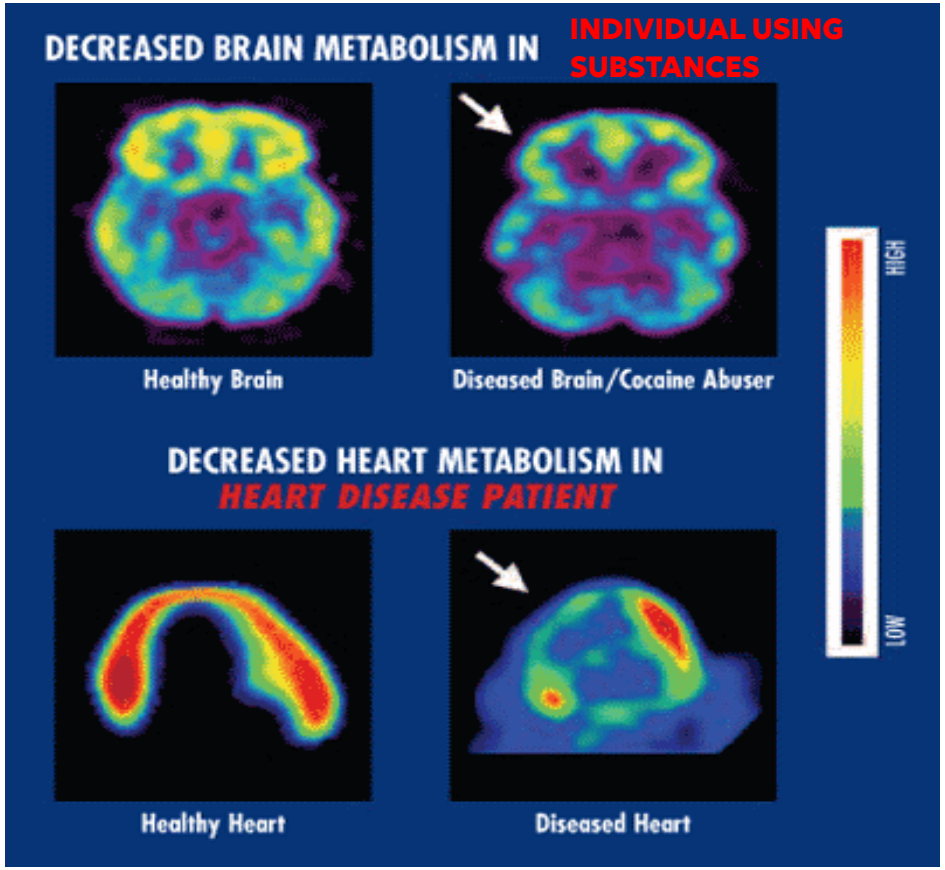
Which one would you pick?

Addiction and the Brain



[Drugs, Brains, and Behavior: The Science of Addiction: Drugs and the Brain | NIDA (nih.gov)]

Addiction and the Brain continued…

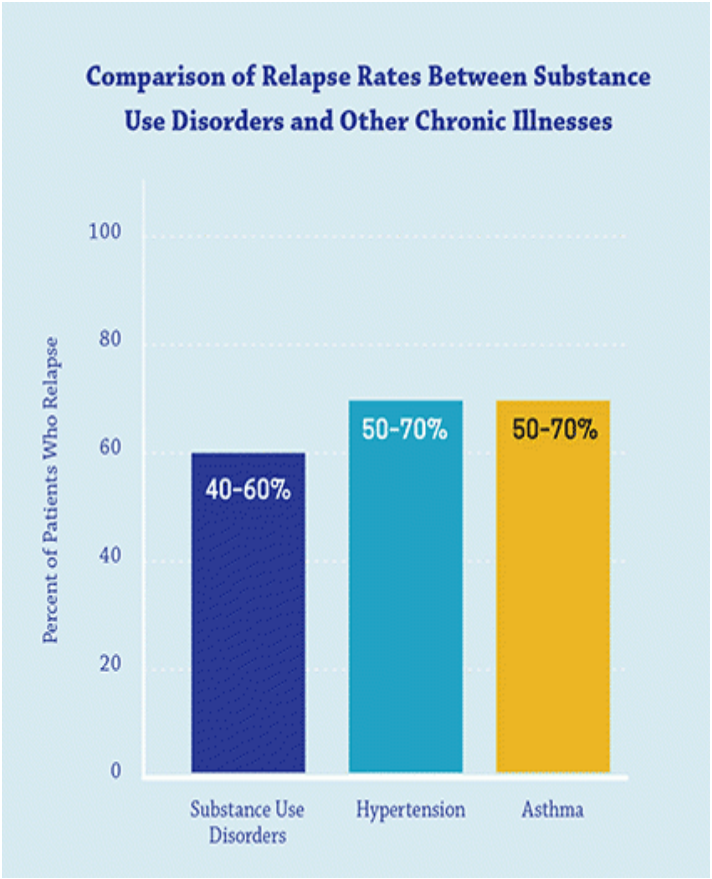


[Drugs, Brains, and Behavior: The Science of Addiction: Drugs and the Brain | NIDA (nih.gov)]

Addiction is a Chronic Disease

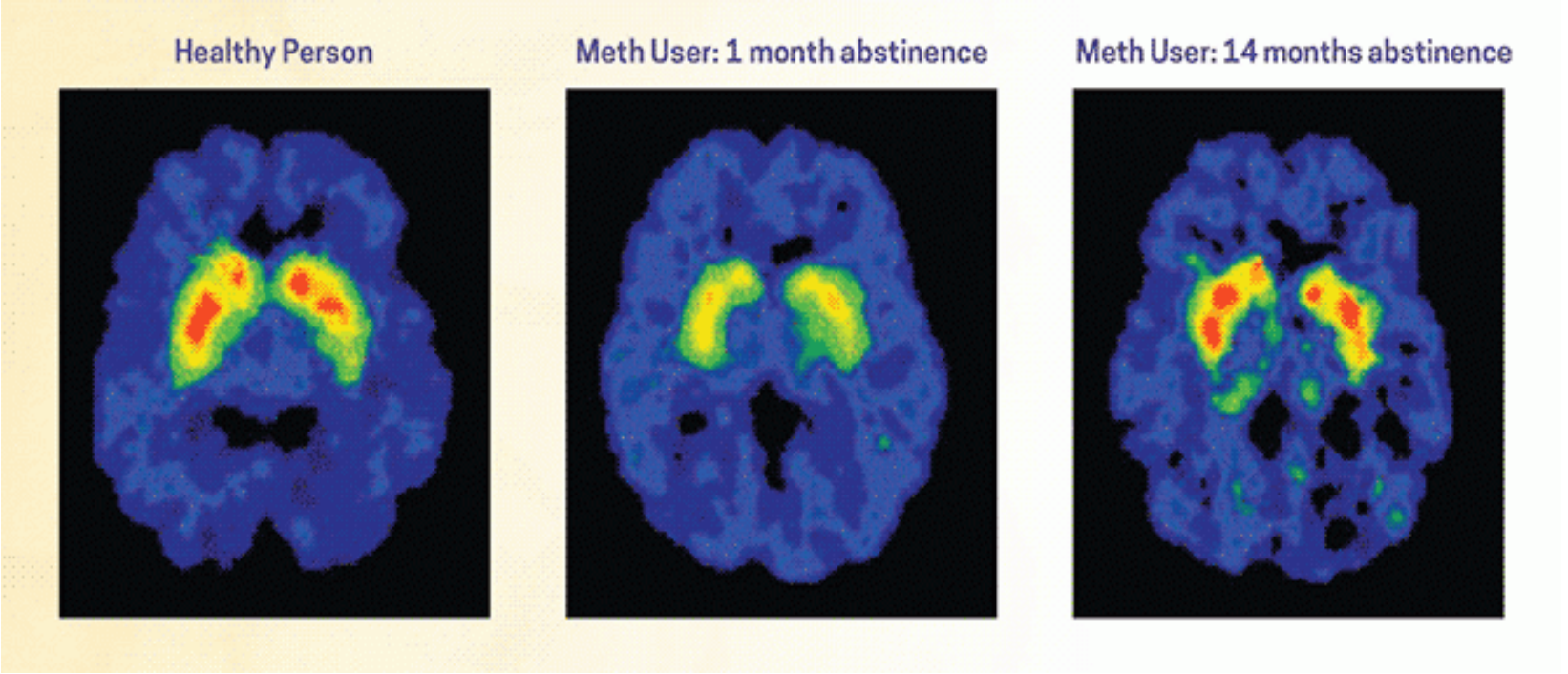
- Similar to HTN, diabetes, and asthma
  - Role of genetic, behaviors and environment

- Chronic illnesses are associated with:
  - Poor medication adherence (<50%)
  - Poor adherence to prescribed behavioral changes (<30%)
  - High level of relapse requiring ED or hospital admission (>50% per year)



JAMA, 2000; 284:1689-1695

Recovery is Possible



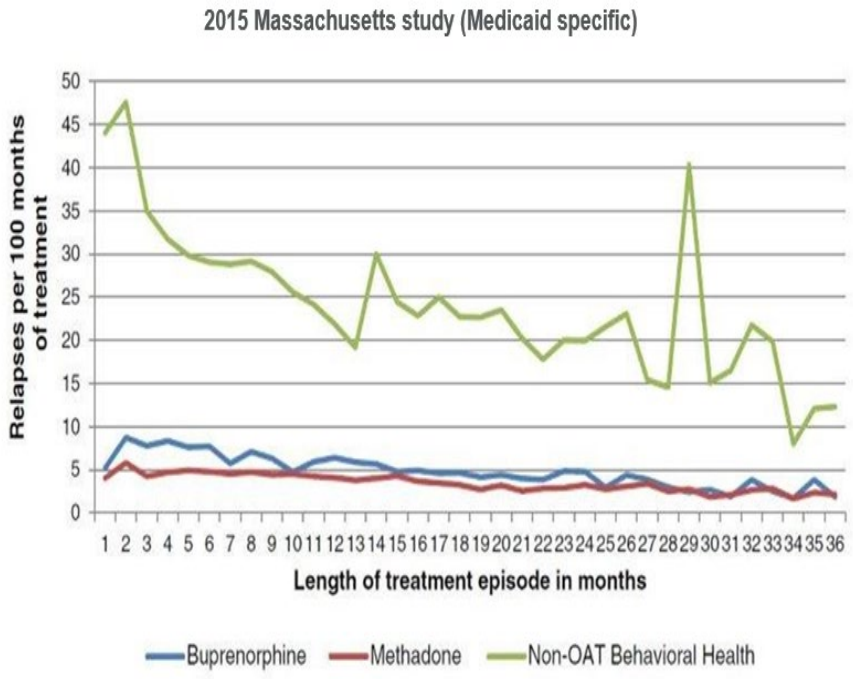
The Journal of Neuroscience, 2001; 21(23):9414-9418

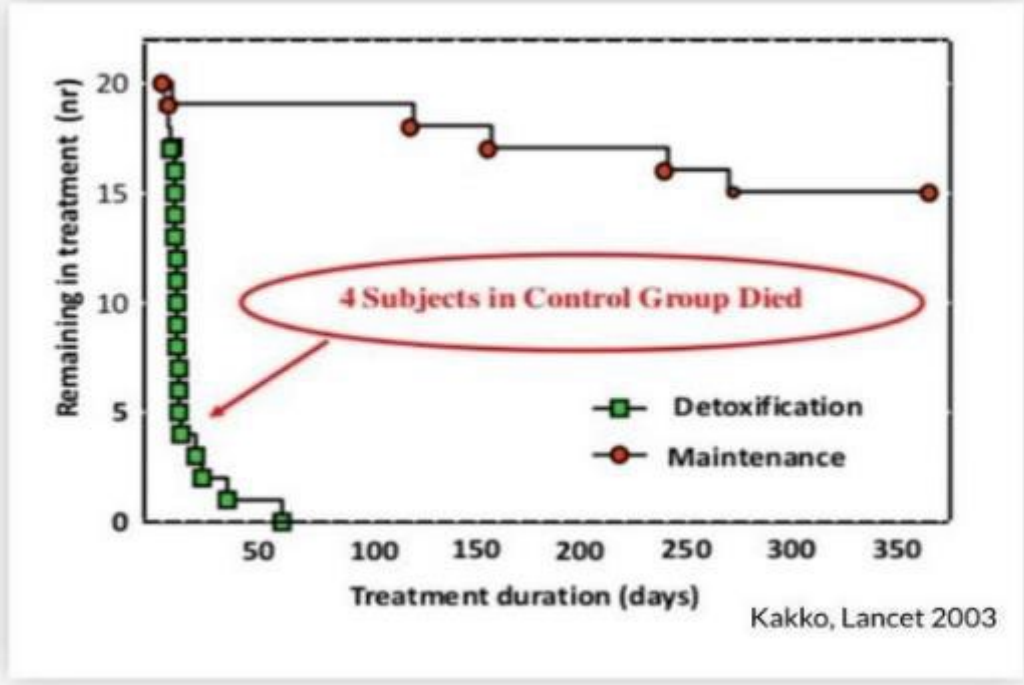
How Can We Leverage Science?

- Chronic disease model: Long Term vs. Episodic care
- Multifactorial: Multidimensional assessment and treatment
- Use of Evidence-based practices
- Return to use is part of disease
- Recovery is achievable

Chapter 2: Medications for Opioid Disorder (MOUD)

Evidence-based Treatment



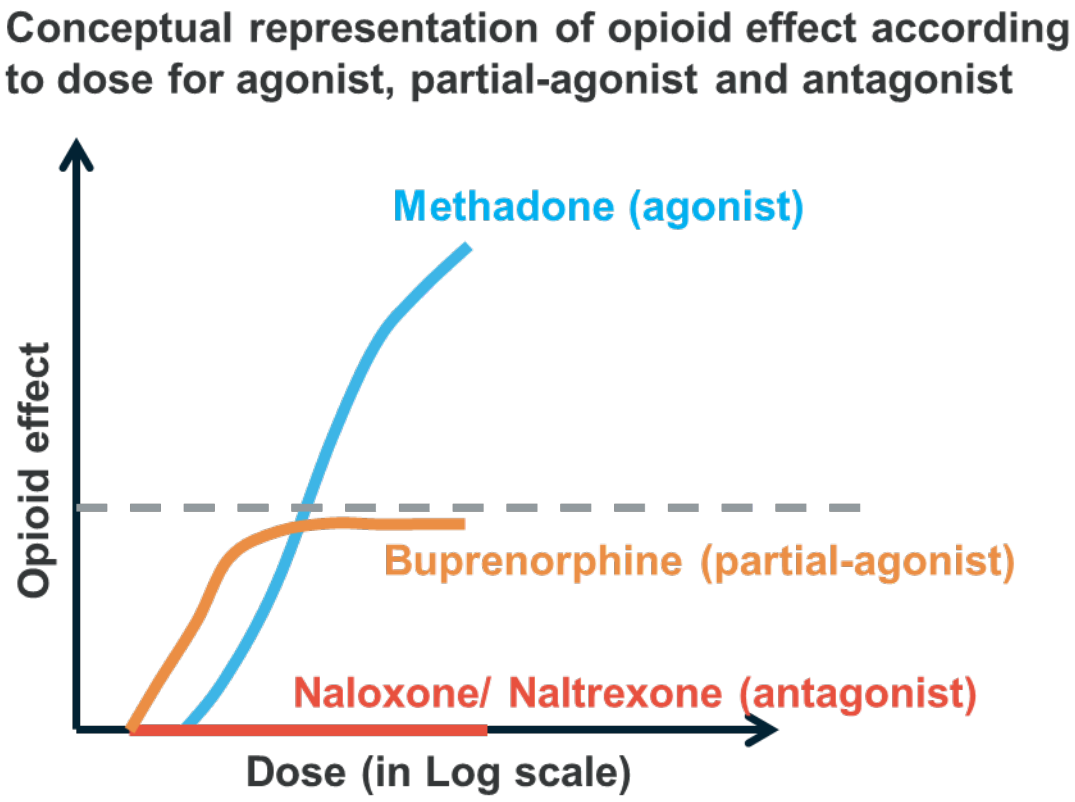


[Risk Factors for Relapse and Higher Costs Among Medicaid Members with Opioid Dependence or Abuse: Opioid Agonists, Comorbidities, and Treatment History - PubMed (nih.gov)]

[1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomised, placebo-controlled trial - PubMed (nih.gov)]

Medications for OUD (MOUD)

- Three FDA-approved MOUD:
  - methadone, buprenorphine, naltrexone
- All three:
  - reduce/eliminate cravings
  - blunt/block effects of illicit opioids
  - support long-term recovery
- Methadone and buprenorphine:
  - reduce/eliminate withdrawal symptoms
- Regulations:
  - methadone: Certified OTP
  - buprenorphine: no longer requirement waiver
  - naltrexone: any prescriber



Methadone

- **What is it?** Long-acting opioid medication; orally once a day
- **How does it work:** Opioid agonist, it binds to opioid receptors in the brain where heroin and other opioids attach
- **Potential benefits:** Blocks the effects of an opioid high, eliminates withdrawal and cravings to use and lowers the risk of recurrence of use, overdose and death
- **Side effects:** Constipation, sleepiness and sweating; respiratory depression and cardiac effects; increased risk of OD with alcohol, benzodiazepines, and illegal substances
- **Regulations:** Strict regulations, only available at certified OTPs

Buprenorphine

- **What is it?** Long-acting opioid medication; sublingual or buccal once a day, subcutaneous injection once a month
- **How does it work?** Partial agonist, it binds to opioid receptors, ceiling effect
- **Potential benefits:** Blocks the effects of an opioid high, eliminates withdrawal and cravings to use and lowers the risk of recurrence of use, overdose and death
- **Side effects:** Potential for precipitated withdrawal at induction. Constipation, nausea and headache. Respiratory depression, particularly if combined with alcohol, benzodiazepines, and illegal substances
- **Regulations:** Schedule 3 controlled medication, waiver no longer required

Naltrexone

- **What is it?** Non-opioid medication; orally once a day or intramuscular injection once a month
- **How does it work?** Opioid antagonist; it blunts the pleasurable effects of opioids and alcohol
- **Potential Benefits:** Decreases cravings and blocks effects of opioids. No abuse potential and no withdrawal symptoms when the medication is stopped.
- **Side Effects:** Precipitated withdrawal if taken too soon after last use; opioid-free period prior initiation (7-10 days minimum); nausea, liver toxicity; vulnerability to overdose with recurrence of use
- **Regulations:** Only requires a prescription

Chapter 3:
Initiatives to Support Adoption of MOD

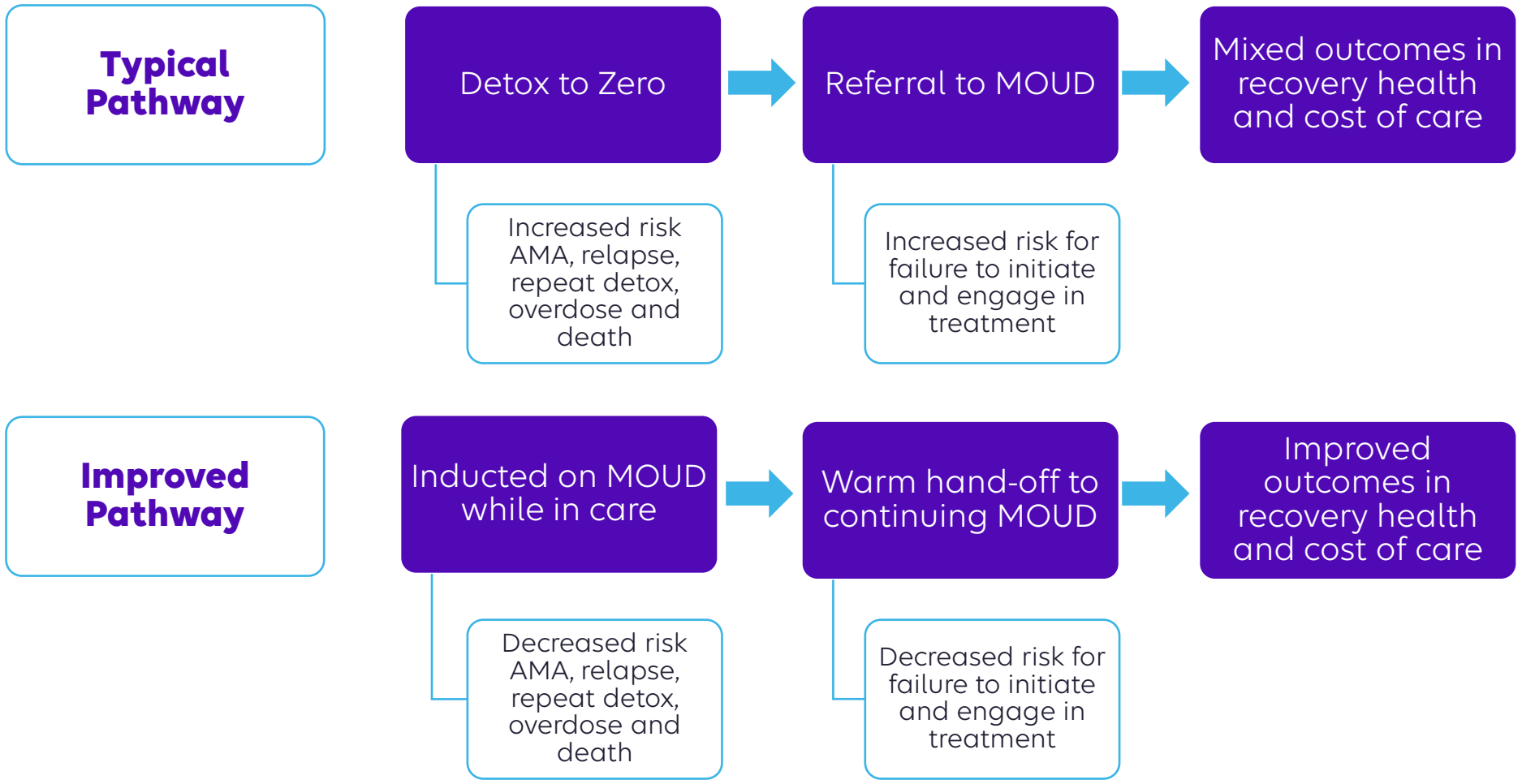
MOUD Risks/Benefits

- Increase treatment retention
- Reduce risk of return to use
- Reduce opioid-related deaths
- Improve overall health
- Improve social functioning including employment
- Reduce the risks of infectious-disease transmission
- Reduce criminal activity
- Improve birth outcomes in pregnant women with OUD

MOUD Risks/Benefits

- Potential medical risks (medical comorbidities, drug-drug interactions)
- Misuse potential
- Diversion
- OD risks (methadone vs. buprenorphine vs. naltrexone)

The Changing Pathways Model



Three Essential Components

Frequent and thorough education of individuals with OUD on MOUD and how it can support them in their recovery

Offering individuals with OUD the **option to be inducted on MOUD** during their inpatient stay (instead of being detoxed to zero)

Providing clients inducted onto MOUD with **comprehensive discharge and warm handoffs**

Changing Pathways to Opioid Use Disorder Recovery During Inpatient Care

Sandrine Pirard, MD, PhD, MPH, Beacon Health Options — *Carrie Bourdon, LCSW, Beacon Health Options*
Vincent McClain, MD, Hartford Healthcare Rushford Center — *Danilo Pangilinan, MD, Intercommunity Inc.*

Background:

- Medication-Assisted Treatment (MAT) and in particular Opioid Maintenance Therapy (OMT) is associated with the most successful outcomes for individuals with Opioid Use Disorder (OUD), but it is grossly underutilized (i).
- Many inpatient programs still use medical detoxification protocols, discharging clients without starting MAT.
- Detoxification is associated with high rates of relapse and the risk of accidental overdose and death is high due to decreased tolerance (ii).
- Moving away from traditional detoxification and instead starting MAT could greatly improve outcomes and reduce health care utilization (iii).

Description of Pilot:

In October 2018, CT BHP launched the *Changing Pathways* (CP) pilot in CT. CP uses a multidisciplinary approach across all staff including nursing, physicians, and clinicians as well as recovery peers to incorporate MAT induction into withdrawal management care. The three essential components of the CP model are:

(1) In-depth MAT education

(2) MAT induction if chosen by client

(3) Warm transfer to guarantee continuation of MAT post-discharge

Methods:

Individuals participating in this pilot were Medicaid members with a diagnosis of OUD admitted for withdrawal management at one of the two freestanding inpatient pilot sites, Rushford and InterCommunity. Data were collected at various timepoints to compare outcomes of members being inducted onto MAT vs. detoxed following traditional protocols.

Results:

1. MAT Education

Education about risks and benefits of MAT (methadone, buprenorphine, and naltrexone) vs. treatment without medications was documented for over 85% of members with OUD discharged from the pilot sites between May and October 2019.

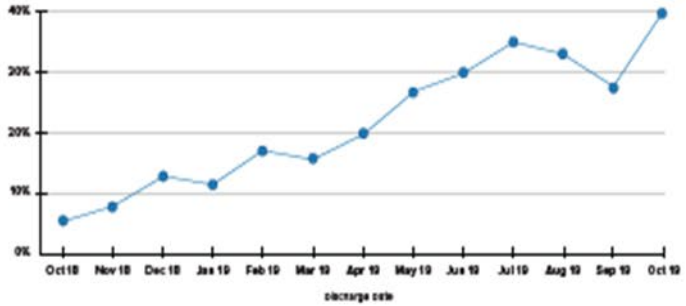
2. MAT Induction and Impact on AMA and Re-admission Rates

During the first year of the initiative, 476 MAT inductions were performed, representing a significant increase in induction rates (over 500% increase for site A and over 300% for site B). Aside from one member who was started on naltrexone, all others were started on OMT (372 on buprenorphine and 102 on methadone).

10/1/2018 – 10/1/2019

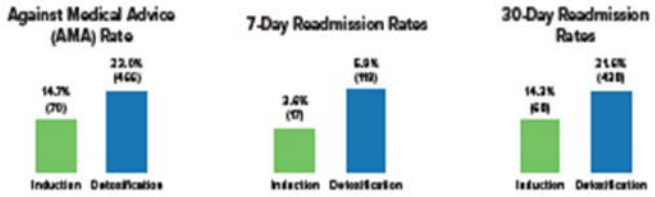
INTERCOMMUNITY INC. & RUSHFORD CENTER INC.

Average Percent of Discharges Inducted



Members who were inducted on MAT had significantly better outcomes than members who went through traditional detoxification protocols. Discharges Against Medical Advice (AMA) rates, readmission rates, and connect-to-care rates were greatly improved.

10/1/2018 – 10/1/2019



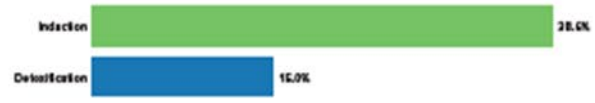
3. Connection to MAT post discharge

The rate of individuals on MAT in the period after discharge from the two sites increased 62% from Q2 2018 to Q2 2019.

4. MAT Adherence at 90-day post discharge

Nearly 40% of inducted members discharging from pilot sites between 10/01/2018 and 03/31/2019 were medication adherent for the 90 days following discharge (when using 80% of days covered as the threshold for adherence), about 2.5 times the rate of members who were detoxed and later started on MAT.

90-Day MAT Medication Adherence:
10/1/2018 – 3/31/2019

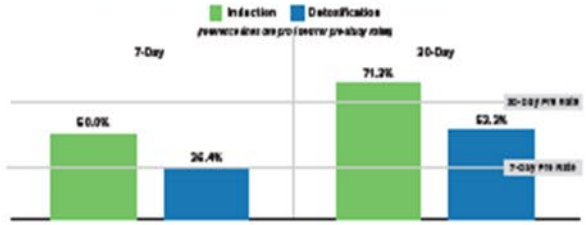


5. Connection to Care

MAT induction was associated with higher 7- and 30-day connection to care after discharge.

Prior to the start of the pilot, in September of 2018, discharges from the two pilot sites had a 7-day follow-up rate of 36.4% and a 30-day rate of 63.6%. During the course of the pilot, the connect to care rates for pilot inducted members improved to 60% for 7 days and 71.3% for 30 days. The connection to care rate for pilot non-inducted discharges was 36.4% for 7 days and 53.3% for 30 days.

Pilot Site Induction Rates: 7- and 30-Day Connect to Care



6. 90-Day Service Utilization

For members inducted at the pilot sites with discharge between 10/01/2018 and 03/31/2019, there were statistically significant reductions in withdrawal management episodes and Behavioral Health (BH) Emergency Department (ED) visits, and the latter rate was nearly cut in half after the MAT induction. Additionally, among inducted members, those who met the 80% adherence threshold were significantly more likely to see a decrease in BH ED visits (0.90 visits pre vs. 0.25 visits post) than members who did not met the adherence threshold (0.79 visits pre vs. 0.51 visits post, ns).

10/1/2018 – 3/31/2019

Behavioral Health ED Episodes	Inpatient Psych Episodes	Total Inpatient Days
0.83 ▶ 0.42	0.04 ▶ 0.05	3.06 ▶ 2.51
avg # of episodes pre ▶ avg # of episodes post	avg # of episodes pre ▶ avg # of episodes post	avg days pre ▶ avg days post
Medical ED Episodes	**Inpatient Medical Episodes**	**Withdrawal Management Episodes**
0.42 ▶ 0.36	0.05 ▶ 0.04	0.68 ▶ 0.37
avg # of episodes pre ▶ avg # of episodes post	avg # of episodes pre ▶ avg # of episodes post	avg # of episodes pre ▶ avg # of episodes post

Members who were not inducted also had a significant reduction in BH ED visits (0.69 visits pre vs. 0.59 visits post). However, they showed a significant increase in total inpatient days (2.85 days pre vs. 3.60 days post) and no significant change in withdrawal management episodes (0.66 episodes pre vs. 0.69 visits post).

Conclusion:

Overall, CT BHP CP represents a promising, person-centered approach to supporting recovery for individuals with OUD.

References:

(i) Clark, Robin E., et al. "Risk Factors for Relapse and Higher Costs Among Medicaid Members with Opioid Dependence or Abuse: Opioid Agonists, Comorbidities, and Treatment History." Journal of Substance Abuse Treatment, 2016, 67: 79-90.

(ii) Mattson, Mary E., et al. "Impact of Medication-Assisted Treatment for Opioid Addiction on Medicaid Expenditures and Health Services Utilization rates in Vermont." Journal of Substance Abuse Treatment, 2019, 97: 9-14.

(iii) Gibbs, Johan, et al. "1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomised, placebo-controlled trial." Lancet, 2003, 361: 662-68.

MOUD Induction in Inpatient Settings and Medication Adherence

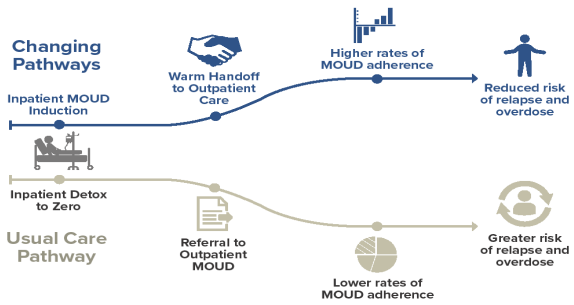
Beacon Health Options

Krista R. Noam, Ph.D. | Carrie Bourdon, LCSW | Sandrine Pirard, MD, Ph.D., MPH

INTRO: Medications for Opioid Use Disorder (MOUD) continue to be under-utilized.

Many inpatient programs still use medical detoxification protocols, discharging clients without starting MOUD.

METHODS: The *Changing Pathways* program was designed to induct adults with Medicaid on MOUD and increase their MOUD utilization.



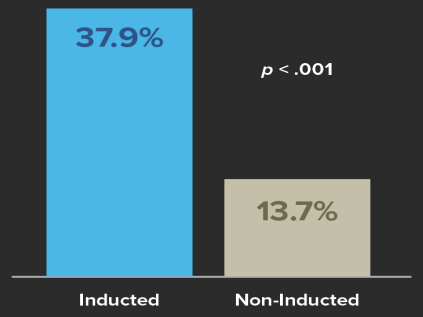
Medicaid claims were analyzed for adults with an OUD diagnosis who were discharged from a pilot withdrawal management facility (10/1/2018 - 3/31/2020) and had > 90 days of continuous enrollment pre- and post-hospitalization.

Adherence = $\frac{\text{\# of days covered by MOUD post 90 days}}{\text{\# of days eligible for adherence post 90 days}}$

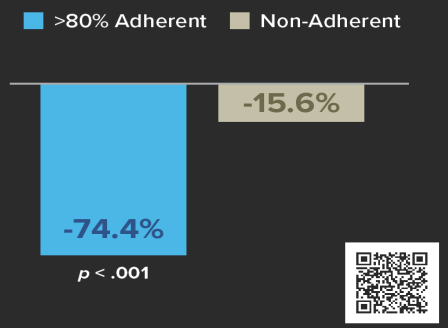
MOUD medications: methadone, buprenorphine, and naltrexone.

Inpatient MOUD induction increases MOUD adherence, which reduces opioid overdoses.

Percent of Patients with > 80% MOUD Adherence during 90 Days Post-Hospitalization



Percent Change in Opioid Overdose from 90 Days Pre-Hospitalization to 90 Days Post-Hospitalization

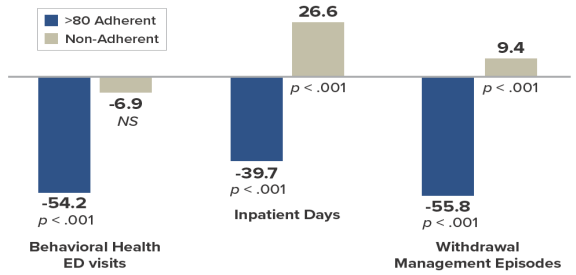


RESULTS: Of the 3,143 patients admitted for withdrawal management (73.5% male, 47.4% White, 22.6% Hispanic), 733 were inducted on MOUD (23.3%) and 2,410 were not inducted (76.7%).

MOUD adherent individuals saw a greater drop in opioid overdose in the post- period (from 8.2% to 2.1%) compared to non-adherent members (from 7.7% to 6.5%).

MOUD adherent adults also saw a significant decrease in their average number of BH ED visits (from 0.7 to 0.3), average number of inpatient days (2.4 to 1.4), and in the mean number of withdrawal management episodes (0.5 to 0.2).

Percent Change in Service Use 90 Days Pre and 90 Days Post Hospitalization



CONCLUSIONS: MOUD induction during inpatient care is associated with higher likelihood of post-discharge adherence, which in turn is associated with reduced service utilization and opioid overdose. Various implementation supports, such as peer support services, are crucial to success.

Additional Authors

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Robert Plant, Ph.D. (Beacon Health Options)

BRIEF REPORT

Associations Between Inpatient Induction on Medications for Opioid Use Disorder and Postdischarge Medications for Opioid Use Disorder Adherence, Overdose, and Service Use

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Resources

Clinical Tools and Treatment Locators

- PCSS: Home - Providers Clinical Support System: Resources for PCPs (pcssnow.org)
- SUD & COVID: COVID-19 Coronavirus (asam.org)
- ED Buprenorphine Induction:
  - ED-Initiated Buprenorphine < ED-Initiated Buprenorphine (yale.edu)
  - BUP Initiation on the App Store (apple.com)
  - Buprenorphine Initiation app - Apps on Google Play
  - Emergency Department Initiated Buprenorphine For Opioid Use Disorder – MDCalc
- CA Bridge: Homepage - CA Bridge
- NIAAA Alcohol Treatment Navigator: https://alcoholtreatment.niaaa.nih.gov/
- ATLAS Treatment Locator: https://www.treatmentatlas.org/
- SAMHSA Behavioral Health Treatment Locator: https://www.findtreatment.samhsa.gov/

References

- *Ahmad et al. (2002). Provisional drug overdose death counts. National Center for Health Statistics https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm*
- *McLellan et al. (2000). Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. JAMA 284:1689-1695*
- *Volkow et al. (2001). Loss of dopamine transporters in methamphetamine abusers recovers with protracted abstinence. The Journal of Neuroscience 21(23):9414-9418*
- *Clark et al. (2015). Risk factors for relapse and higher costs among Medicaid members with opioid dependence or abuse: opioid Agonists, comorbidies, and treatment history. J Subst Abuse Treat. 57: 75–80*
- *Kakko et al. (2003). 1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomized, placebo-controlled trial. Lancet 361:662-8*
- *D'Onofrio et al. (2015). Emergency department-initiated burprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial. JAMA 313(16):1636-44*
- *Larochelle et al. (2018). Medication for Opioid Use Disorder after nonfatal opioid overdose and association with mortality: a cohort study. Ann Intern Med 169(3):137-145*
- *Center for Substance Abuse Treatment. Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction. Treatment Improvement Protocol (TIP) Series 40. DHHS Publication No. (SMA) 04-3939. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2004. NIDA: Drugs, Brains, and Behavior: The Science of Addiction (2020) http://www.drugabuse.gov/publications/science-addiction*
- *Volkow et al. (2014). Medication-Assisted Therapies – Tackling the Opioid-Overdose Epidemic. N Engl J Med 370:2063-2066.*
- *Weiss et al. (2011.) Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid use disorder: A 2-phase randomized controlled trial. Archives of General Psychiatry 68(12):1238-46.*
- *Strang et al. (2003). Loss of tolerance and overdose mortality after inpatient opiate detoxification: follow up study. BMJ 326:950-60*

Thank you!