Maryland
DEPARTMENT OF HEALTH

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SUBSTANCE USE DISORDER IN SPECIAL POPULATIONS

April 26, 2025

Improving Treatment of Substance Use Disorder and Co-occurring Disorders in Youth

MARC FISHMAN, MD, Medical Director and CEO,
Maryland Treatment Centers; Associate Professor, Psychiatry,
Johns Hopkins University School of Medicine

Breaking the Cycle: Substance Use Disorders and Suppport in Perinatal Care

DENIS ANTOINE II, MD, Program Director and Medical Director,
Addiction Treatment Services Clinic/Center for Addiction and
Pregnancy, Johns Hopkins Bayview Medical Center

Maryland
DEPARTMENT OF HEALTH

Continuing Medical Education (CME) &
Pharmacy Continuing Education (ACPE) Seminar

Substance Use Disorder in Special Populations

Virtual Live Program
on
Saturday, April 26, 2025

8:55 am – Introductions	Maryland Department of Health Office of Pharmacy Services
9:00 am – Improving Treatment of SUD and Co- Occurring Disorders in Youth	Marc Fishman, M.D. Maryland Treatment Centers Johns Hopkins University School of Medicine
11:00 am – Breaking the Cycle: Substance Use Disorders and Support in Perinatal Care	Denis Antoine II, M.D. Johns Hopkins Bayview Medical Center
1:00 pm – Closing Remarks	Maryland Department of Health Office of Pharmacy Services
1:15 pm - Adjourn	

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Presenter Disclosure:

- Dr. Fishman, instructor for this educational event, has received a research grant from Alkermes, Indivior, and US World Meds. He serves as a consultant for Indivior, US World Meds, Nirsum Labs, and Drug Development LLC. He has received medication for study through Alkermes, Braeburn, Indivior, and US World Meds. Dr. Fishman will be discussing "Off-Label" uses of products or devices. This information is on file with Acentra Health.
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Activity Type: Knowledge-Based.

Improving treatment of SUD in youth

Marc Fishman MD
Maryland Treatment Centers
Johns Hopkins University School of Medicine

JOHNS HOPKINS MEDICINE
SCHOOL OF MEDICINE

Disclosures

Consultant for: Drug Delivery LLC, Nirsum Labs, Indivior, US WorldMeds

Research funding from: Alkermes, National Institute on Drug Abuse, Indivior, US WorldMeds

Medications for research studies: Alkermes, Braeburn, Indivior

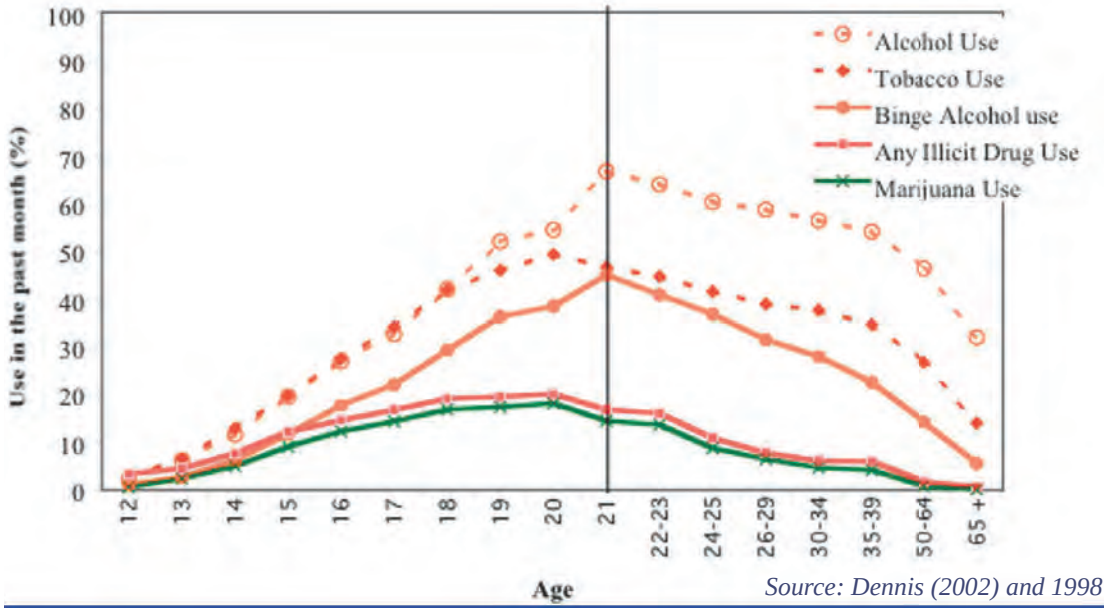
Some Things Never Change

Outline

- Scope of the problem
- Developmental vulnerability
- Cannabis
- Treatment
- OUD and MOUD
- Developmentally informed approaches including family involvement

Scope of the problem

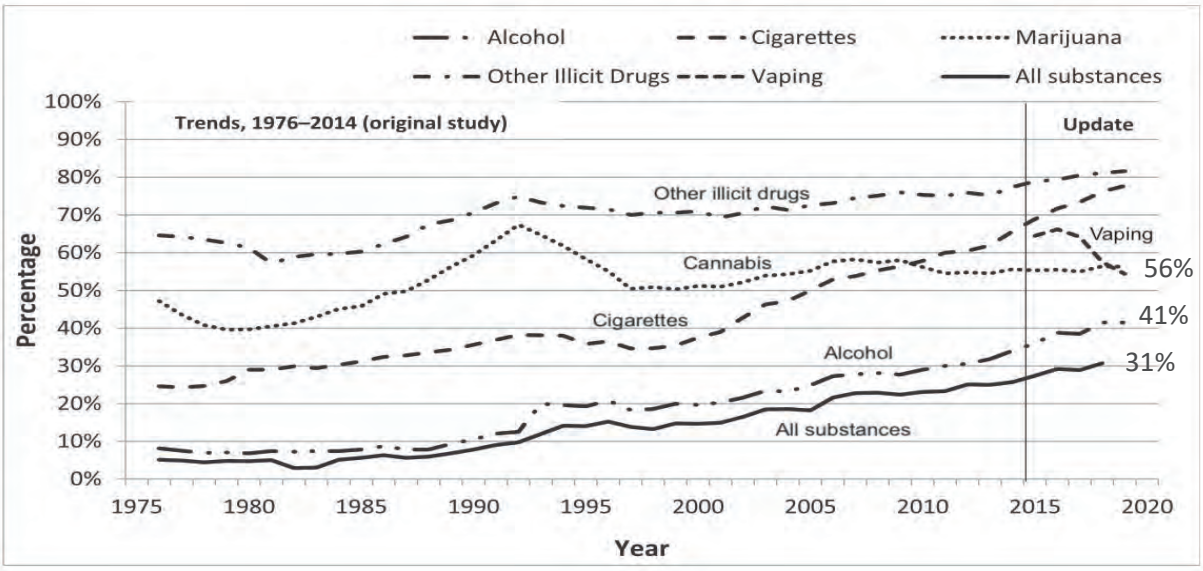
Relationship between substance use and age



Source: Dennis (2002) and 1998 NHSDA.

Non-Use Trends

12 graders, lifetime



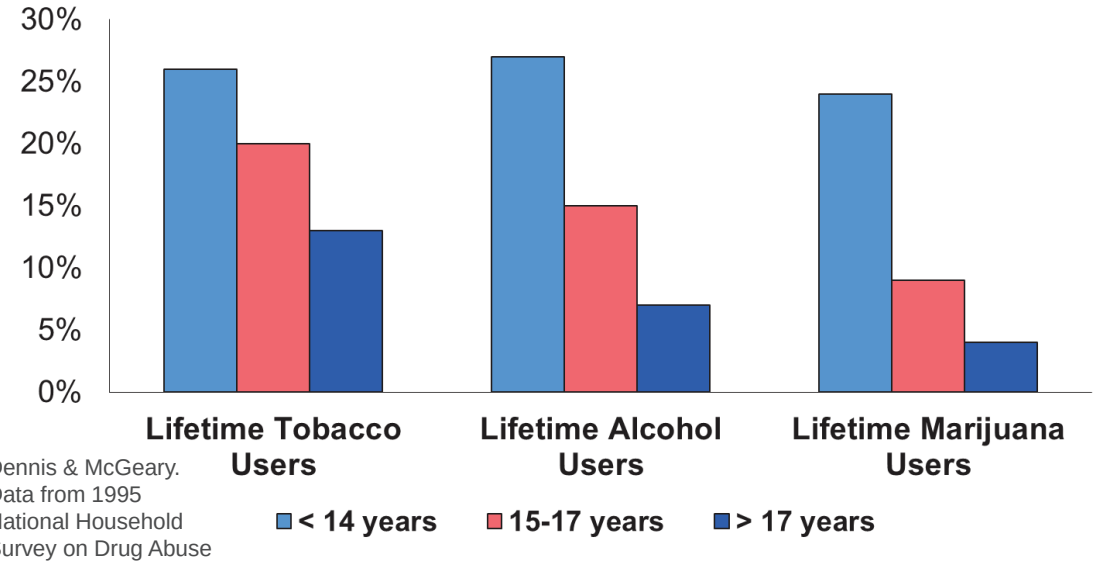
Abstinence all substances (including vaping):

Lifetime	25.3%
Past 30d	50.9%

Levy S et al. Trends in Substance Nonuse by High School Seniors: 1975–2018. Pediatrics. 2020;146(6). Source: MTF survey

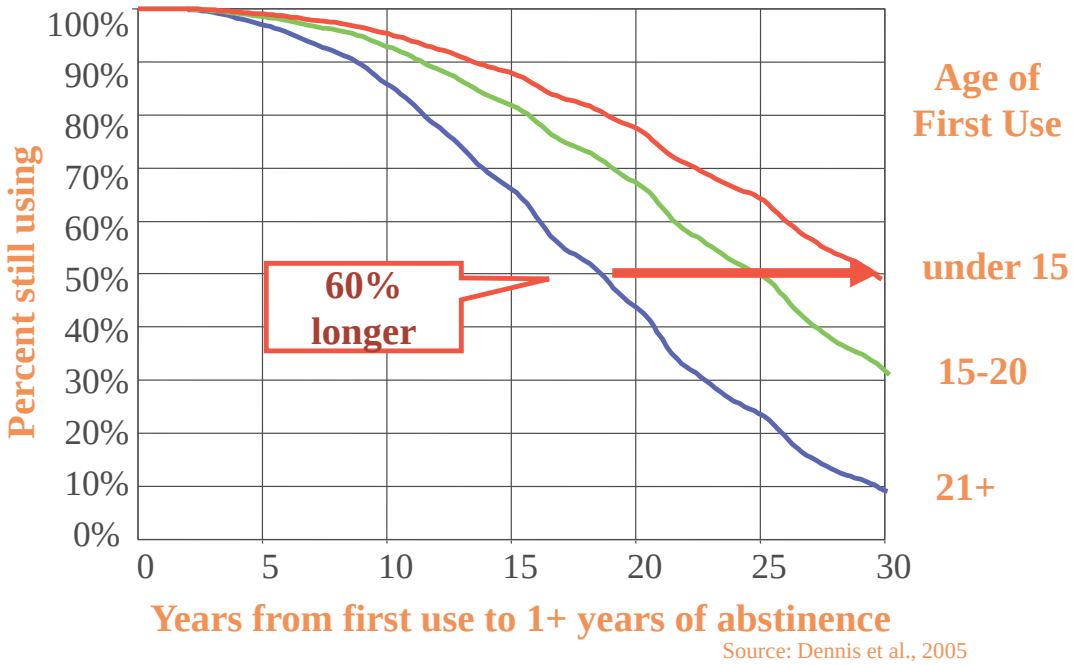
Does Development Matter?

Probability of Having 1 or More Dependence Symptom(s) as an Adult Based on Age of First Use



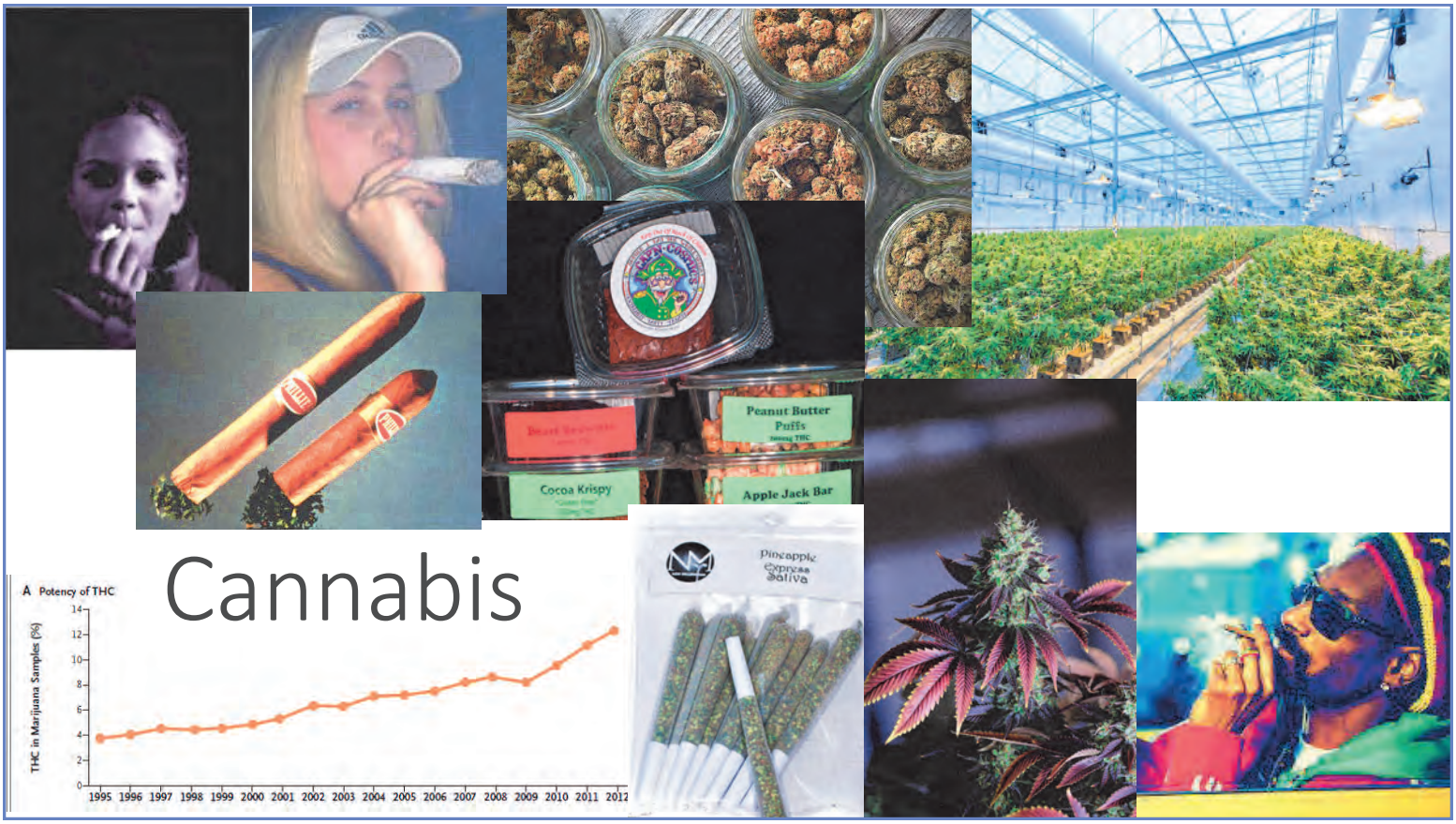
Dennis & McGeary. Data from 1995 National Household Survey on Drug Abuse

The Younger They Start, The Longer They Use



Source: Dennis et al., 2005

Cannabis

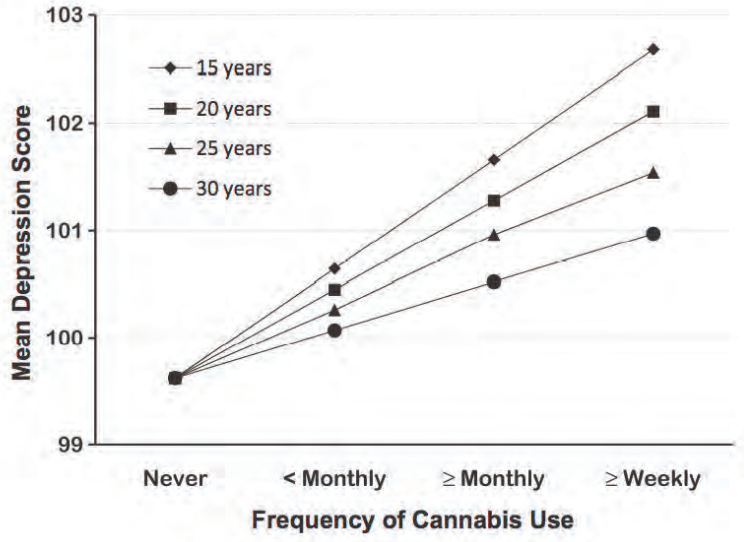


Cannabis

Why do we care about cannabis? What's all the fuss?

- Vulnerable populations: youth, psychiatric illness, other substance use disorders
- Acute consequences of intoxication, eg MVCs
- Psychiatric consequences of use
  - Depression/ anxiety
  - Psychosis
  - Cognitive impairment
- Progression to cannabis use disorders and other substance use disorders

MJ use associated with depressive symptoms



Pooled data, 4 longitudinal studies, n=6900

Horwood et al. Drug and Alcohol Dependence *126 (2012) 369–378*

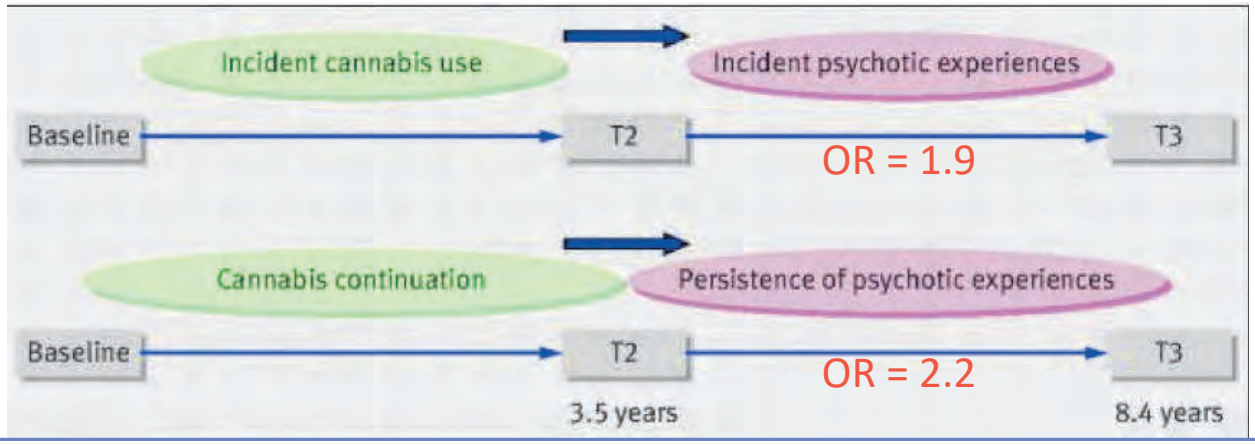
CUD dangers in mood disorders

- Youth ages 10-24 with mood disorders, n=200K, Ohio Medicaid claims
- CUD in 10%
- CUD associated with
  - All cause mortality (AHR 1.6)
  - Death by OD (AHR 2.4)
  - Death by homicide (AHR 3.2)
  - Non-fatal self harm (AHR 3.3)

Fontanella. *JAMA Peds*. 2021

Cannabis and psychosis

- 10 yr prospective cohort of 1923 youth (age 14-24 at baseline), examination of change over 3 time points
- Cannabis use doubles risk of new onset psychosis
- Cannabis continuation double risk of persistent psychosis



Kuepper et al British Med J. 2011

Cannabis and cognitive impairment

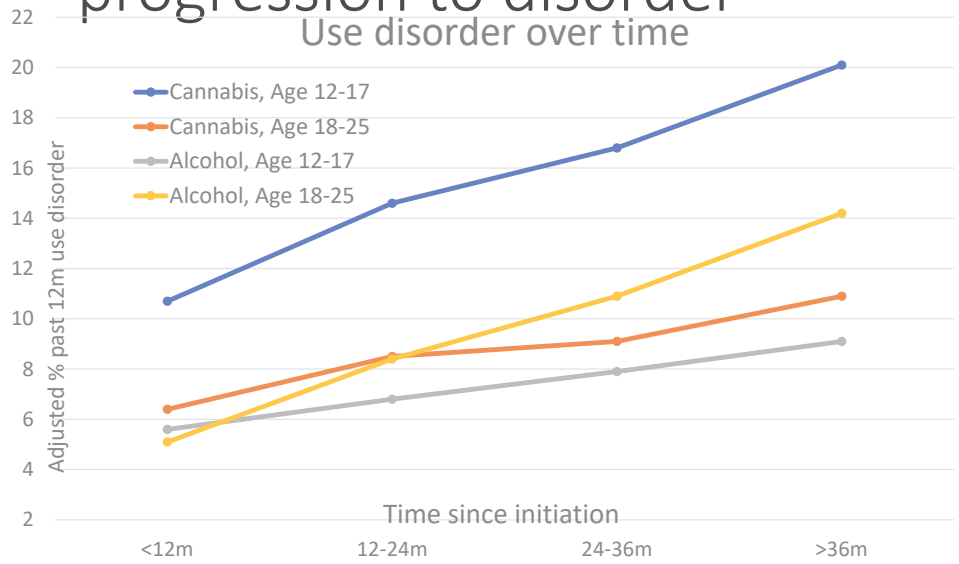
- IQ measured age 13, 38; N=1037
- MJ use measured age 18, 21, 26, 32, 38
- IQ decline associated with regular use and dependence, dose response related to persistence

	None	Some use	1 wave	2 waves	3+ waves
Regular use	+1	-1	-3	-2	-5
Dependence	+1	-1	-2	-3	-6

- No difference with controls for education, recent use, other substances, schizophrenia
- Adolescent onset worse, -8 points for 3+waves

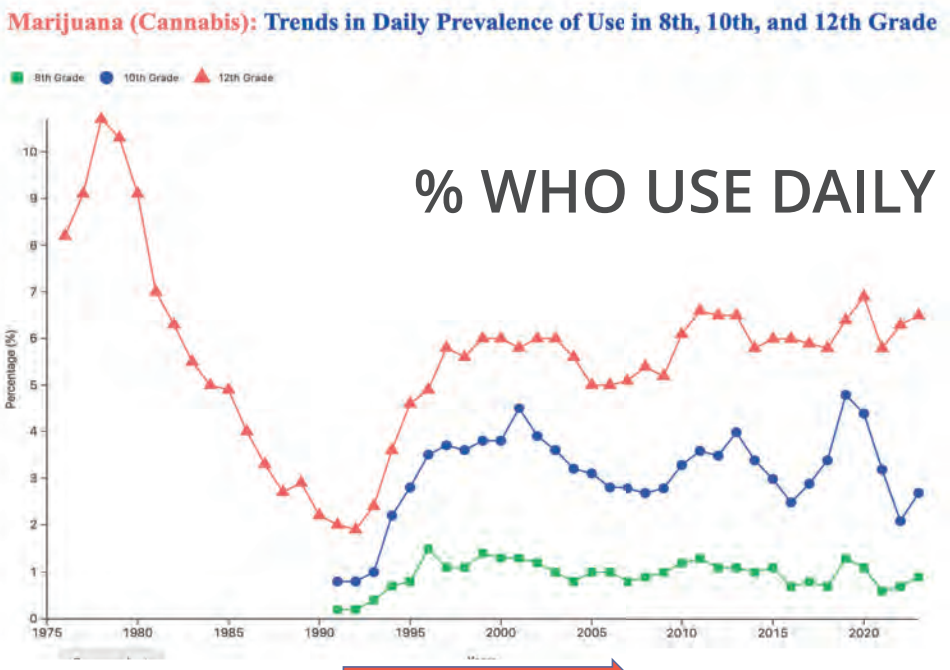
Meier et al. PNAS. 2011

Early initiation confers high risk of progression to disorder



- Substantial rates of use disorder in youth soon after initiation
- Cannabis risk higher for adolescents than YA's
  - 10.7% vs 6.4% within 1 yr
  - 20.1% vs 10.9% within 3 yrs
- Cannabis risk higher than alcohol for adolescents

Volkow et al JAMA Pediatrics 2021.



% WHO USE DAILY

Cannabis access "movement" takes off

Medical

Recreational

Monitoring the Future Survey 2023

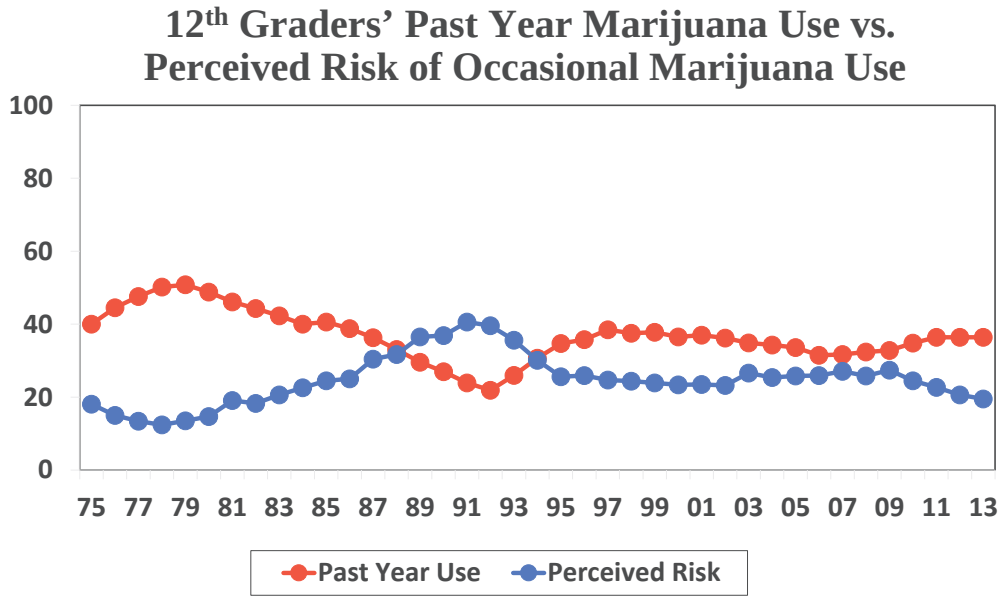
Vulnerability in youth
Progression to addiction

- Conditional risk of use disorder in adolescents as high as 40%
- Daily use of MJ <age 17 associated with substantially increased risk of:
  - Persistent MJ Dependence (OR=18)
  - High school drop out (OR=3)
  - Use of other drugs (OR=8)
  - Suicide attempts (OR=7)

Pooled longitudinal studies. N =2537 to N=3765.
Silens et al. Lancet Psychiatry, 1,: 286 – 293, 2014S

Treatment

SUBSTANCE ABUSE IS PREVENTABLE

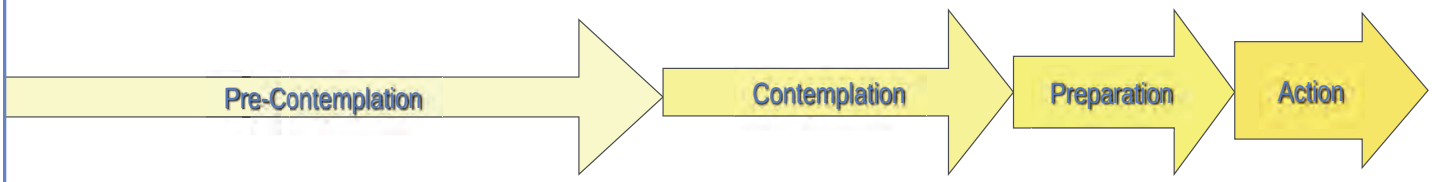


SOURCE: University of Michigan, 2013 Monitoring the Future Study

Ineffective Interventions

Can we establish credibility despite historical exaggerations?

Treatment Engagement and Stages of Change



- Progressive treatment engagement
- Relationship and therapeutic alliance
- Motivational enhancement

Motivational approaches

- Do you know other kids who have been in trouble…
- Do you know why I or your parents might think it's a problem…
- What are the pro's and con's for you…
- What would be evidence in your view that it's a problem…
- If you could stop anytime, would you be willing to see what it's like…
- Let's schedule you to come back and see how it's going…
- Will you go and see a specialist? Get another opinion?

Digestible messages
"Weed is not my problem, what's the big deal?"

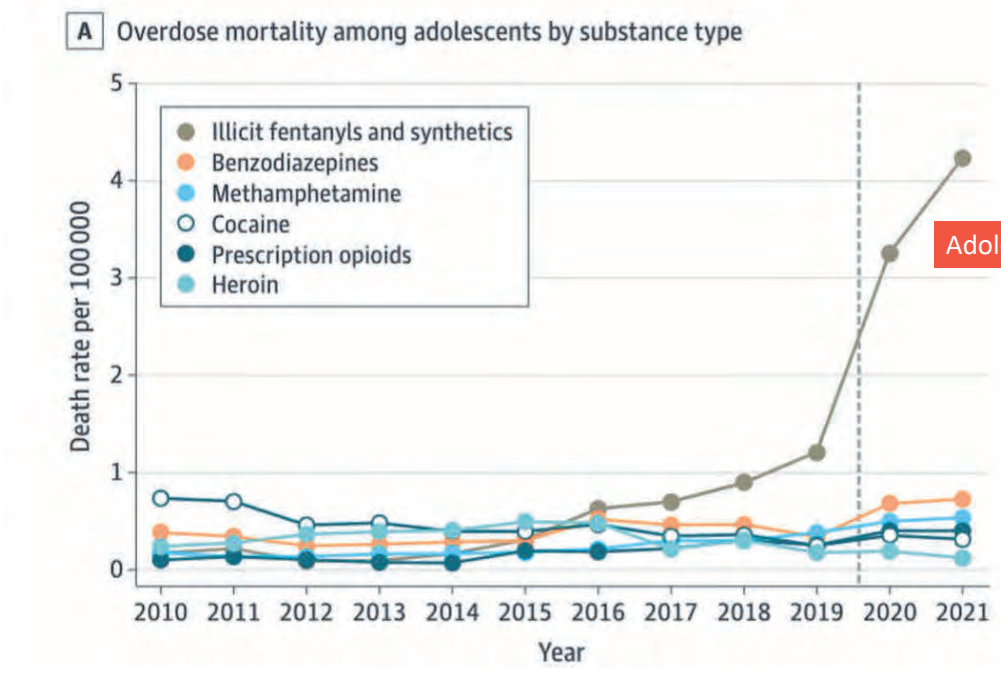
- Intoxication impairs judgment, more likely to do something you'll regret
- Being around people with MJ usually means being around people who are more likely to be trouble (including other substances)
- Teen brains easily bruised. Intoxication as a psychological and biological habit that progresses. "Sledgehammer" reinforcement by substances. If you keep pushing that button, the pathway gets stronger
- Maybe a little is ok, but is what you're doing "a little?"
- Maybe it's not that it's never ok, but that it's not right for you **now**. Maybe wait till later (age 18+?) when your force field is powered up.
- Yes you could be the special rare exception but why gamble
- If it's that good and that important that you can't accept this advice, what does that tell you?

OUD

Background and overview

- OUD is an advanced, malignant form of SUD, usually beginning in **youth**
- Adolescents and young adults are extremely vulnerable; Young adults are disproportionately affected; Adolescent involvement is increasing
- There is evidence and consensus for **medications in OUD** (MOUD) in youth, but dissemination is poor due to problems with capacity, misinformation, and prejudice
- Broader use of MOUD is vital as a cornerstone of treatment. **MOUD-forward approaches** are especially important.
- But youth have **worse outcomes** than mature adults because of developmental vulnerability and treatment system limitations
- Improved **developmentally-informed** approaches that target treatment capacity, engagement, retention and medication adherence could help.

Adolescent OD deaths increasing

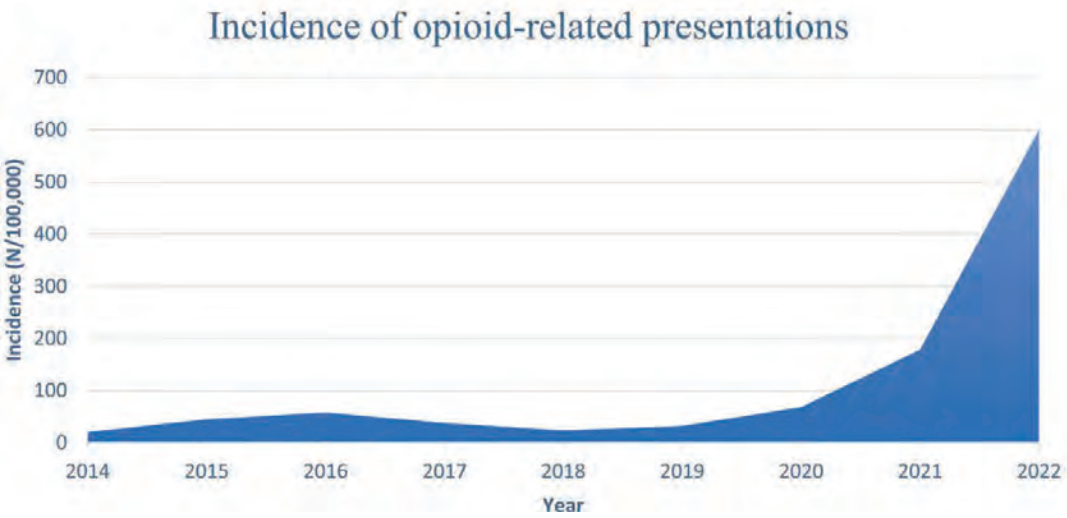


Adolescent ODs up disproportionately

Increases in OD deaths	Total	Adol (14-18)
2019-20	30%	94%
2020-21	15%	20%

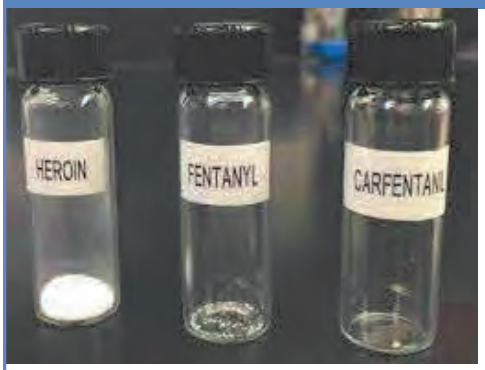
Background

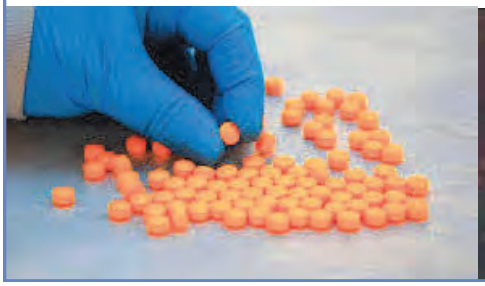
An escalating problem

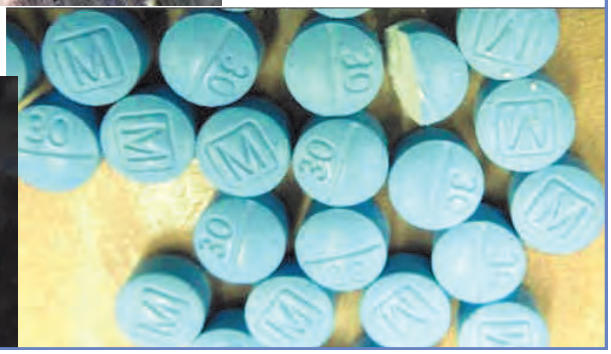


Adolescent OUD presentations to ED across 13 sites.
Sidlak et al. *DAD*. 2024.

Fentanyl







Intervention for youth substance use is **Prevention** for youth OUD

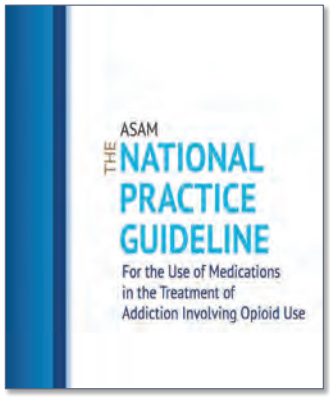
- Addiction – a developmental disorder of pediatric onset
- The vast majority of youth who initiate opioids have problems with other substances first
- Earlier onset associated with worse outcomes
- Earlier intervention associated with better outcomes
- Opioid addiction as an advanced stage in progression of illness
- Intervention for non-opioid SUD prior to opioid initiation – cannabis, alcohol, nicotine – is OUD prevention

MOUD for adolescents and young adults Summary of the evidence

- Buprenorphine clearly effective
- XR-NTX promising, but less youth-specific research
- Outcomes very good, not as good as for older adults, but far better than without medication
- Longer is better; no evidence for time limitation
- No signal for safety or efficacy problems based on age
- MOUD first line; No evidence for fail-first

- MOUD – should be STANDARD OF CARE
- MOUD-forward approaches should be cultivated

Treatment guidelines for youth

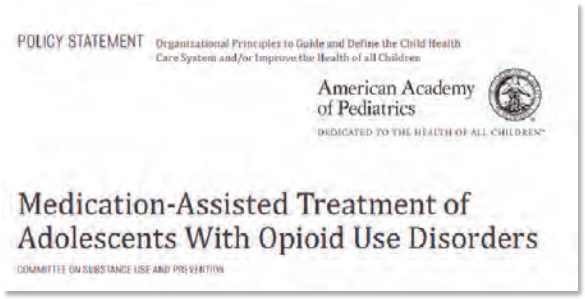


American Society of Addition Medicine (2015, 2020):

- Clinicians should consider treating adolescents using the full range of treatment options, including pharmacotherapy

American Academy of Pediatrics (2016):

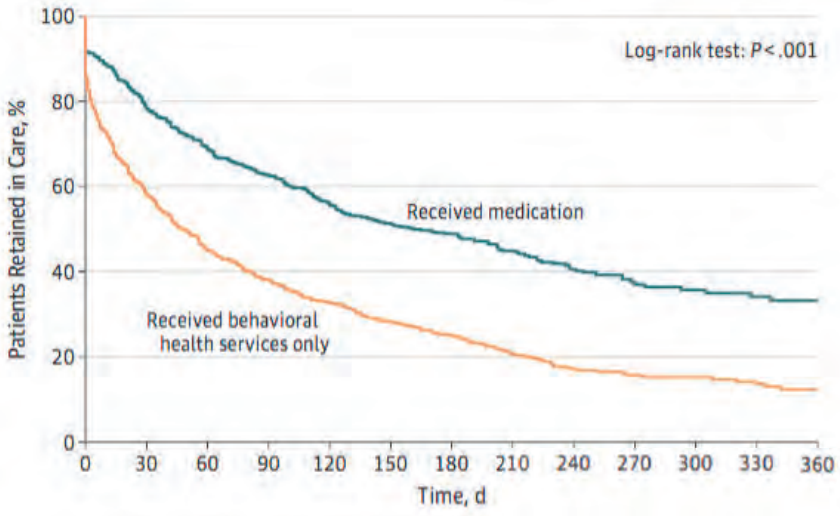
- Encouraging pediatricians to consider offering MAT or discussing referrals to other providers for this service



Committee on Substance Use and Prevention Medication-assisted treatment of adolescents with opioid use disorders. *Pediatrics,* 2016;138(3):1893.
Kampman K & Jarvis M. *Journal of Addiction Medicine*, 2015;9(5):358-367.

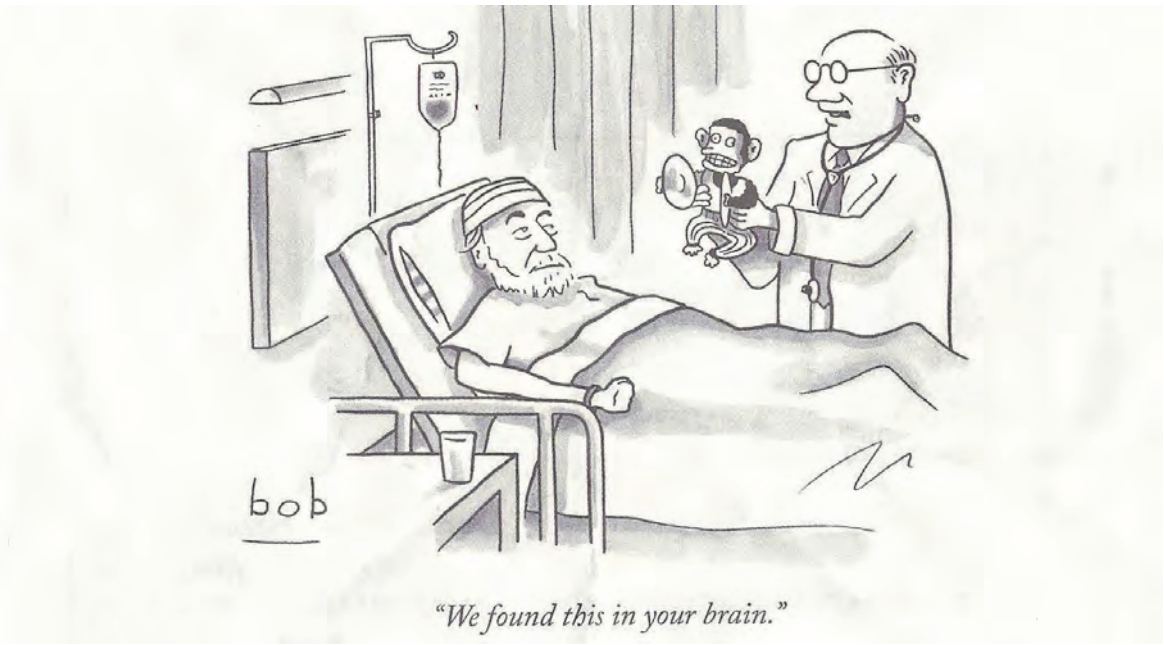
Medications promote retention for youth (But poor uptake)

Youth 13-22, Medicaid claims
26% received any medication
(5% for age <18 yrs).



Hadland et al. JAMA Pediatrics 2018

If only it were that easy



How should we help this young person?

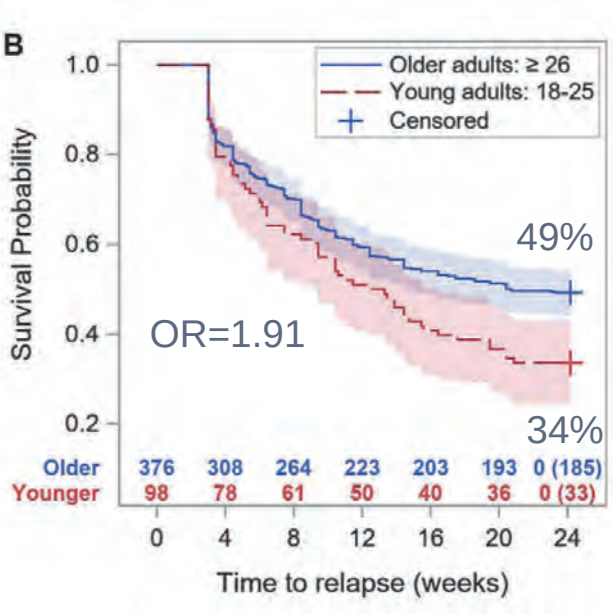
- 23 M or F
- Onset cannabis age 13
- Onset nasal (or smoked) "percocet" use 17, progressing to daily use with withdrawal within 8 months, injection fentanyl 6 months later
- 2 episodes residential tx, 1 AMA, 1 completed, but no continuing care
- Buprenorphine treatment (monthly supply Rx x 2), took erratically, sold half
- Presents in crisis seeking detox
  ("Can I be out of here by Friday?")

Features of youth opioid treatment

- Developmental barriers to treatment engagement
  - Invincibility
  - Immaturity
  - Motivation and treatment appeal
  - Less salience of consequences
  - Strong salience of burdens of treatment
- Variable effectiveness of family leverage
- Pushback against sense of parental dependence and restriction
- Prominence of co-morbidity

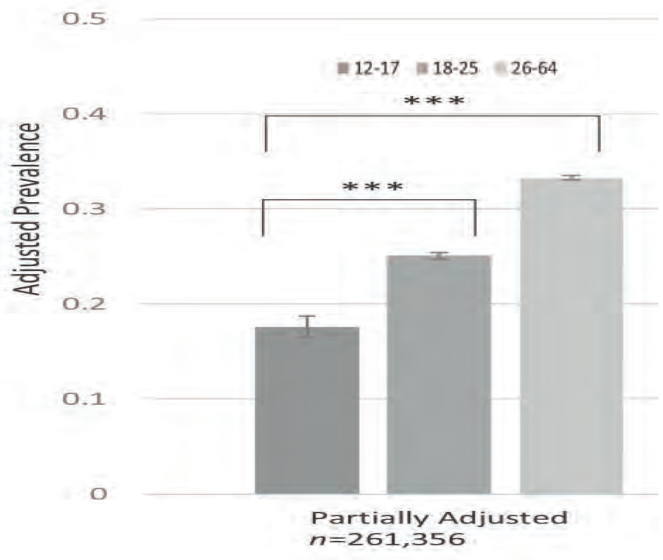
Youth vs Older Adults: Barriers to Optimum Outcomes

Relapse: XBOT secondary analysis



Fishman. *J Adol Health.* 2020

Retention: Medicaid claims dataset



Mintz. *Drug Alc Dep*. 2020

47

MOUD feasible for youth in real world
But poor adherence in community treatment

- Treatment received in acute residential followed by multiple community providers, youth 15-21, N=288
  - XRNTX 28%, Bup 33%, No meds 39%

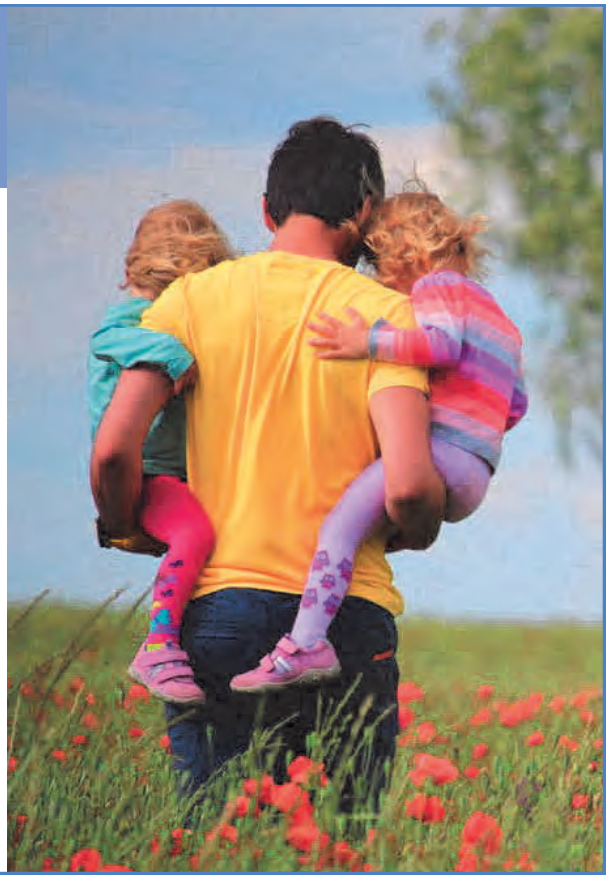
- Over 6 months following residential discharge **low rates of MOUD** use:
  - XRNTX: mean doses 1.3
    - 41% 1st OP dose
    - 12% 3rd OP dose
    - 2% 6th OP dose
  - Bup: mean days 57

Mitchell et al. JSAT. 2021.

Developmentally-informed treatment
Family involvement

Family Engagement:
Historical Barriers

- Normative pushback against **sense of parental dependence and restriction**
- Clinicians: lack of training, competence, comfort
- Focus on **internal transformation**
- Preoccupying focus on "enabling"
- Over-rigid concern with **confidentiality**



Principles of Family Negotiation
The Art of the Deal

- Pick your battles
- Know your **leverage**
- You gotta give to get
- You have more juice than you realize
- Keep your **eyes on the prize**

Example of Innovative Intervention

Youth Opioid Recovery Support (YORS)

Elements of family sessions

Family **psychoeducation** about OUD, medications, and other treatment

Collaborative **treatment agreement** between youth, family member, program

Skill building and improving effectiveness: Communication skills; shaping desired behaviors through operant conditioning; picking your battles

How will family know about and help **support** attendance and treatment progress? How will family help **support** medication adherence?

Crisis management -- What is the back-up or rescue plan if there is trouble?

Poster child for family involvement?

- 23 year old male injecting heroin
- 4 inpatient detox admissions over 1.5 years, each time got first dose of extended release MOUD but **never came back** for 2nd dose
- Lives with grandmother, team shows up with dose, he says no thank you, she says no not an option, **done deal**, gets 6 doses over 6 months

"As I learned from growing up, you don't mess with your grandmother. "

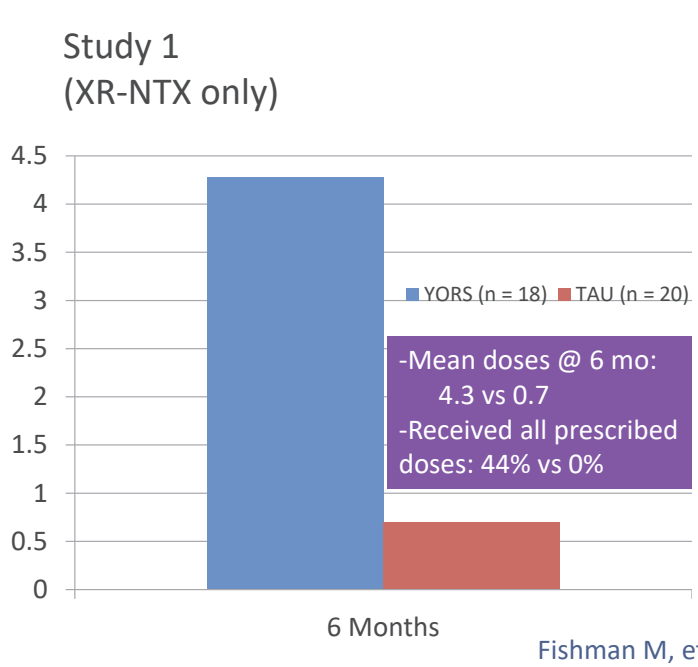
- Prince William

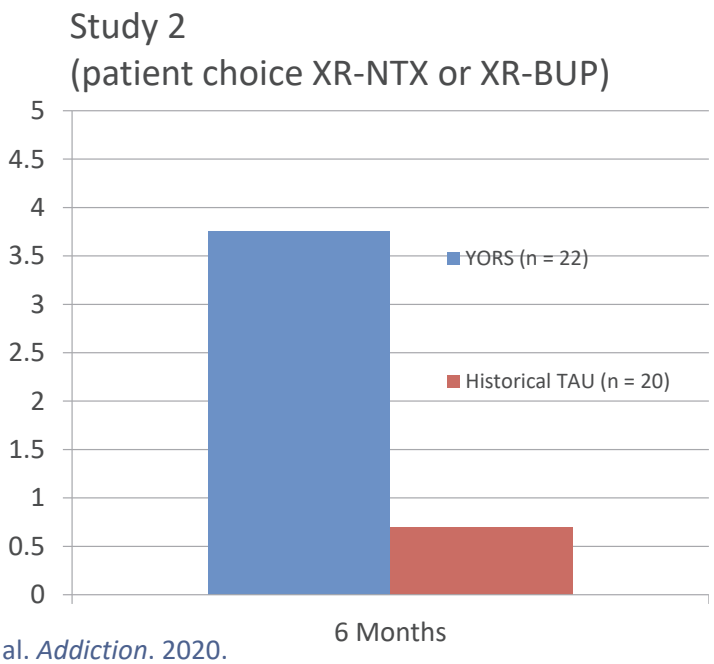
Balancing parental and young adult empowerment

- Patient: "Mom, you can't be in here when I'm getting the shot…"
- Therapist: "Ma'am I think it's best if we provide her privacy for the injection."
- Mother: "Are you kidding me? Of course I am. I'm not leaving this room till I see that medicine go in you…"

Don’t take no for an answer

Mean outpatient MOUD doses received



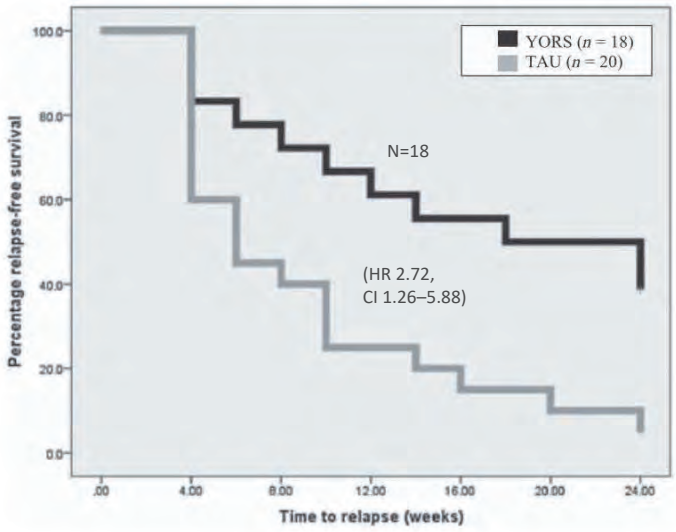


Fishman M, et al. *Addiction*. 2020.
Wenzel K, et al. *JSAT*. 2021.

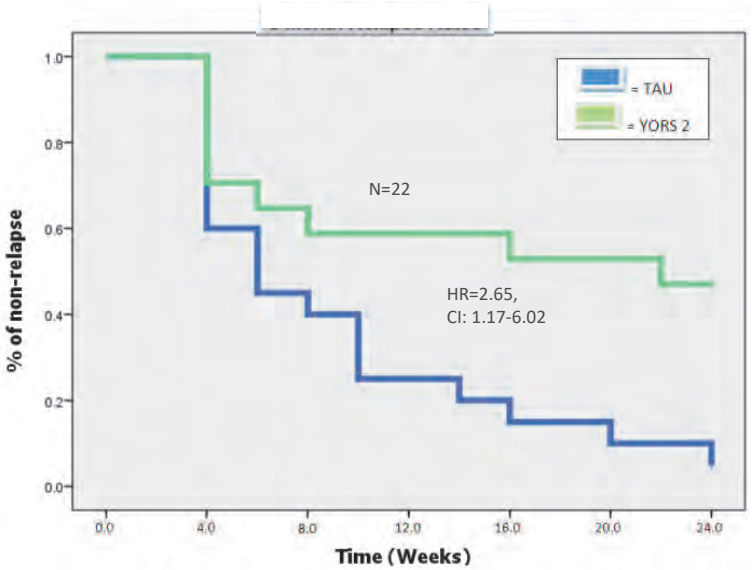
YORS Outcomes: Opioid Relapse-Free Survival

6-month non-relapse rates

Study 1
(XR-NTX only)



Study 2
(Patient choice XR-NTX or XR-Bup)



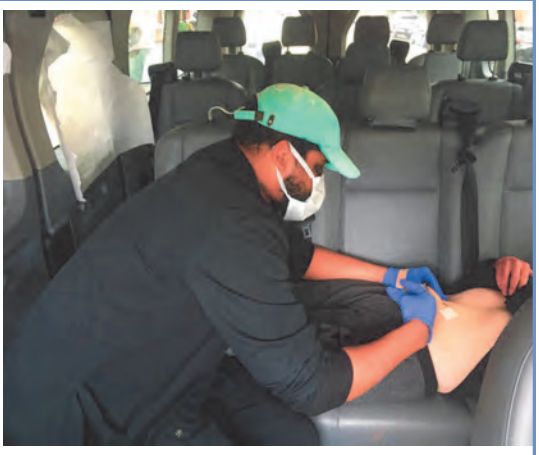
Fishman M, et al. *Addiction*. 2020.
Wenzel K, et al. *JSAT*. 2021.

YORS HEAL BRIM Project

- Yrs 1-2: intervention enhancement, test cycles
- Yrs 2-5: larger RCT of enhanced YORS

Enhancements: Focus groups, interviews, qualitative and quantitative results

- Medication choice – no brainer
- Mobile van – 2 thumbs up!
- Telehealth – 3 thumbs up!
- reSet m-health app – mixed reviews
- Parent peer tele-group – strong endorsement from sub-group
- Written feedback "report card" – lukewarm at best

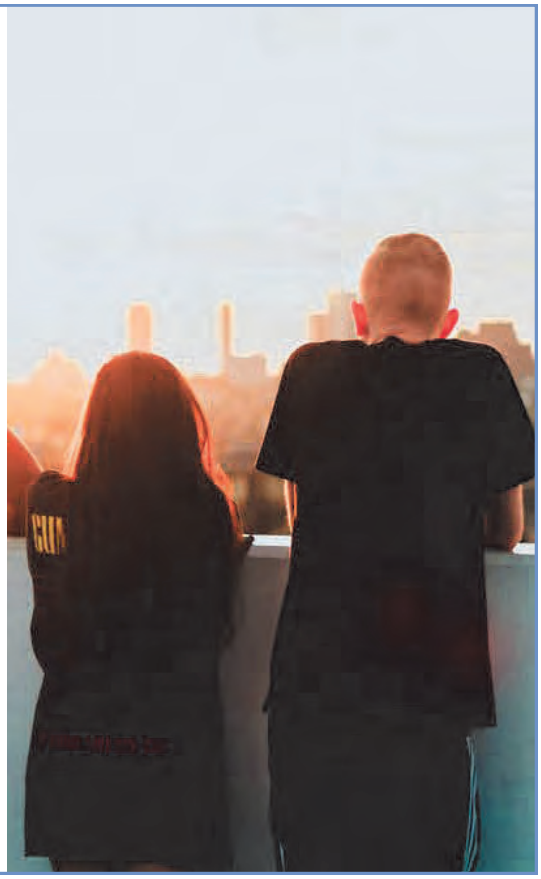


Wenzel and Fishman. Mobile van delivery of extended-release buprenorphine and extended-release naltrexone for youth with OUD: An adaptation to the COVID-19 emergency. *JSAT*. 2021

Example of Innovative Intervention
Primary Care Delivery, Hub and Spoke

- MOUD in youth serving primary care (**spokes**)
- Consultation and support from regional special center (**hub**)

Levy S, et al. A Novel Approach to Treating Adolescents with Opioid Use Disorder in Pediatric Primary Care. *Substance Abuse.* 2018



Example of innovative intervention
XR-Bup for adolescents

- Helps to address adherence problems
- Maryland medicaid approving on a case by case basis
- More research needed

Example of innovative intervention
Young adult OUD recovery housing

- Youth-specific
- OUD-specific
- Emphasis on MOUD, co-occurring disorder treatment, and accommodation to youth shenanigans
- Embedded in full continuum of care

Outcomes (N= 46)	
Avg. weeks in residence	14.4; Range = 0.4 - 50
Retention at 12-weeks	62%
Retention at 24-weeks	18%
Opioid Positive UDS at 12-wks	7.5%

BOND
Building opioid recovery support networks to engage and retain loved ones in medication for OUD

- Moving upstream to engage families in order to engage youth with OUD
- Coaching of families (and other concerned significant others) to get out-of-treatment youth into treatment
- Recruit concerned significant others

New adolescent inpatient treatment program

THE BALTIMORE SUN Health | Residential treatment program for youth with...

NEWS HEALTH

Residential treatment program for youth with substance use disorders coming to Baltimore

By ANGELA ROBERTS | aroberts@baltsun.com
UPDATED: September 11, 2024 at 8:14 p.m.

Maryland
DEPARTMENT OF HEALTH
Wes Moore, Governor · Aruna Miller, Lt. Governor · Laura Herrera Scott, M.D., M.P.H., Secretary

September 11, 2024

Media Contact:
Chase Cook, Director, Office of Communications, 410-767-6649

Maryland Department of Health announces new program for youth struggling with substance and opioid use disorders

New residential program provides high-intensity inpatient services including 15 new beds for Maryland youth

Baltimore, MD – The Maryland Department of Health, in partnership with the Montgomery County Department of Health and Human Services, today announced the launch of a Residential Substance Use Disorder Treatment for Minors program. The program is specifically designed to provide inpatient treatment for Marylanders under the age

Referrals -- Laura Grant
lgrant@marylandtreatment.org

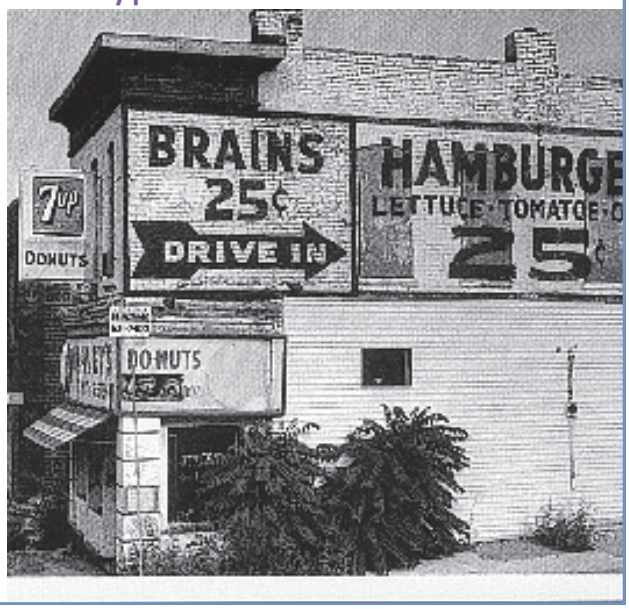
MARYLAND TREATMENT CENTERS
www.marylandtreatment.org

64

Conclusions
A Call to Action

- We are at a crossroads
- We have an existing and emerging toolbox but an **alarmingly low level** of adoption and utilization
- Adolescent substance use ***is* a big deal**
- Emerging research and clinical consensus support **aggressive treatment for OUD across the lifespan** with MOUD, including youth
- We are saving lives, but we need to do better
- **Developmentally-informed interventions** might help
- If not now, then when?

Hypothetical miracle cures?



Questions?
Discussion?

Therapeutic optimism remains one of our best tools!

Case

- 15F, parents describe social withdrawal, explosiveness, change in peer group, and academic decline; no knowledge of SU
- She acknowledges not feeling herself. Poor concentration, inattention, worries, irritable, sleep disturbance
- Volunteers she has experimented with marijuana and beer; denies recent use
- Further exploration reveals ongoing weekend marijuana use; she acknowledges depression but believes the substances are “no big deal.”

Case

- 16 F
- She's lost interest in activities, grades declining, mom concerned about depression
- Stormy, on/off relationship with boyfriend who is s[illegible] user; she is ambivalent about sex, wants to discuss contraception; reluctantly agrees she has been drinking with him and his friends, has tried some pills
- She has started going to parties, smoking marijuana, taking more pills; admits to using opioids and benzos "not that much."

Case

- 19M smoking "Percocet"
- Duration 5 months, now with daily use, full physiological dependence
- Presents for inpatient treatment

Alternative scenario

- Age 15

Alternative scenario

- Presents as outpatient

Alternative scenario

- Progressive troubles with irritability, anxiety, anger outbursts

Alternative scenario

- Several failed attempts at treatment engagement, non-adherence to SL buprenorphine

Alternative scenario

- Declines MOUD after withdrawal management
- Or, family skeptical about MOUD

Alternative scenario

- Opioid use 1-2x/wk, no physiologic dependence (yet)

Selected references

- Wenzel et al. Choice of extended release medication for OUD in young adults (buprenorphine or naltrexone): a pilot enhancement of the Youth Opioid Recovery Support (YORS) intervention. *JSAT*. 2021..
- Wenzel K and Fishman M. Mobile van delivery of extended-release buprenorphine and extended-release naltrexone for youth with OUD: An adaptation to the COVID-19 emergency. *JSAT*. 2020
- Hogue A, Becker S, Fishman M, Henderson C, Levy S. Youth OUD Treatment During and After COVID: Increasing Family Involvement across the Services Continuum. *JSAT*. 2020.
- Fishman M, Wenzel K, Scodes J, Pavlicova M, Lee J, Rotrosen J, Nunes E. Young adults have worse outcomes than older adults: Secondary analysis of a medication trial for opioid use disorder. *J Adol Health*. 2020.
- Fishman M, Wenzel K, Vo H, Wildberger J, Burgower R. A pilot randomized controlled trial of assertive treatment including family involvement and home delivery of medication for young adults with opioid use disorder. *Addiction*. 2020.
- Woody G, Fishman M. "Medication for Opioid-Addicted Youth – What are We Waiting For?" *J Adol Health*. 67: 9-10. July 2020.
- Monico L, Ludwig A, Lertch E, Dionne R, Fishman M, Schwartz R, Mitchell S. Opioid overdose experiences in a sample of US adolescents and young adults: a thematic analysis. *Addiction*. 2020.
- Vo H, Burgower R, Rozenberg I, Fishman M. Home-based Delivery of XR-NTX in Youth with Opioid Addiction. *J Subst Abuse Treat.* 85 (2018) 84–89. PMID: 28867062
- Levy S, et al. A Novel Approach to Treating Adolescents with Opioid Use Disorder in Pediatric Primary Care. *Substance Abuse.* 2018

Breaking the Cycle: Substance Use Disorders and Support in Perinatal Care

Denis Antoine, II M.D.
Program Director
Center for Addiction and Pregnancy, Johns Hopkins Bayview Medical Center

Disclosures

- I have no disclosures of any financial or commercial interests relevant to this lecture to make

Objectives

- Identify the prevalence, risk factors, and societal impact of substance use disorder during pregnancy and postpartum in diverse populations.
- Gain knowledge on evidence-based interventions, including pharmacologic therapies (e.g., medication-assisted treatment) and behavioral approaches tailored to the perinatal population.
- Understand how to coordinate care among obstetrics, pediatrics, Behavioral Health specialists, and social services to optimize clinical and psychosocial outcomes for mothers and infants.

Outline

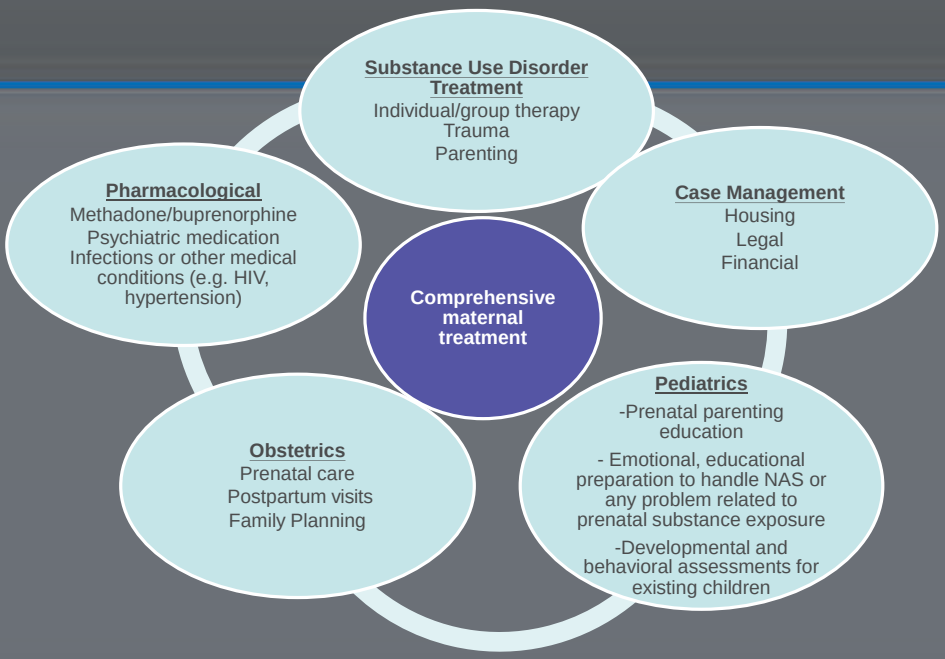
- Pharmacology
- SUD Treatment in Pregnancy
- Co-occurring Psychiatric Conditions
- Support

Background

- Psychiatrist / Addiction Medicine
- NIH T-32 Fellowship (Behavioral Pharmacology)
- Medical Director (Inpatient Dual Diagnosis)
- SUD Clinic Director
  - Unstably housed
  - Pregnant
  - Underserved populations

Center for Addiction and Pregnancy

- Established in 1991
  - Psychiatry: substance use disorder and comorbid disorders
- Adjunctive components through partnerships**
  - Housing
  - Transportation support
  - Pediatrics: neonatology and primary pediatric care
  - Obstetrics



CAP Mission Statement

To improve perinatal outcomes of women with substance use disorder and their children through a comprehensive care model, clinical research and education.

Center for Addiction and Pregnancy

- Intensive Outpatient Program
  - Comprehensive, coordinated, multidisciplinary approach through the following services: stepped-model substance use disorder treatment, psychiatric evaluations and mental health counseling, obstetric and pediatric health care.
  - Antepartum and post-partum (up to 1 year)

Adverse Perinatal Outcomes

- Psychosocial factors
  - Substance use
  - Mental Illness
  - Interpersonal violence
- 21.2% if no psychosocial factor
- 35.3% if all three
  - Black women were over 2.5 times as large as the odds for other racial groups.

McDonald, L. R., Antoine, D. G.*, Liao, C., Lee, A., Wahab, M., & Coleman, J. S. (2020). Syndemic of lifetime mental illness, substance use disorders, and trauma and their association with adverse perinatal outcomes. Journal of interpersonal violence, 35(1-2), 476-495.

Pharmacology

- Pharmacodynamic
- Pharmacokinetics
  - Volume of distribution
- Safety Categories

Pharmacokinetics

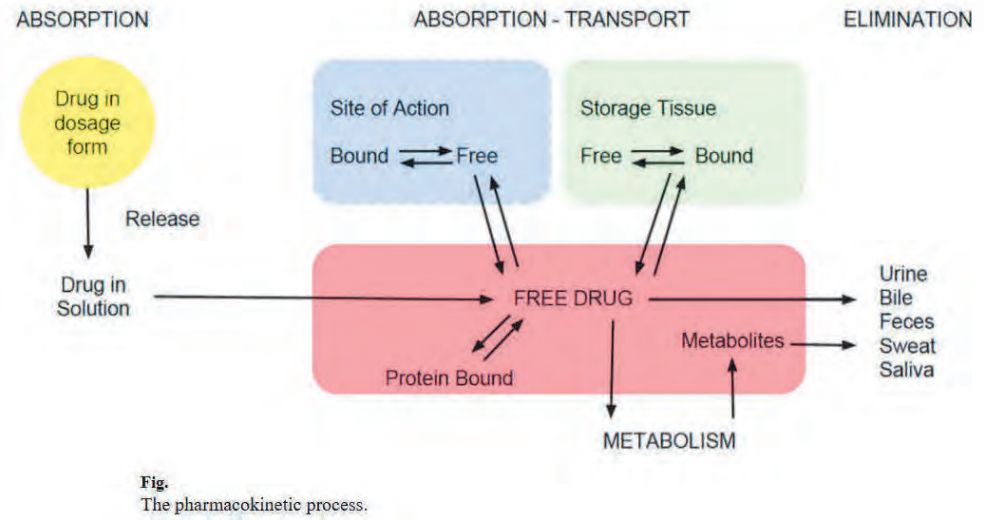


Fig.
The pharmacokinetic process.

Feghali M, Venkataramanan R, Caritis S. Pharmacokinetics of drugs in pregnancy. Semin Perinatol. 2015 Nov;39(7):512–519. PMCID: PMC4809631

Pharmacodynamics

Pregnancy-induced enzyme-specific changes.

Enzyme (references)	Pregnancy-induced change	Potential substrates in obstetrics
CYP3A4[19,20,77,78]	Increased	Glyburide, nifedipine, and indinavir
CYP2D6[77,79]	Increased	Metoprolol, dextromethorphan, paroxetine, duloxetine, fluoxetine, and citalopram
CYP2C9[18,80]	Increased	Glyburide, NSAIDs, phenytoin, and fluoxetine
CYP2C19[18,80]	Decreased	Glyburide, citalopram, diazepam, omeprazole, pantoprazole, and propranolol
CYP1A2[17,23,77,81]	Decreased	Theophylline, clozapine, olanzapine, ondansetron, and cyclobenzaprine
UGT1A4[82–84]	Increased	Lamotrigine
UGT1A1/9[25]	Increased	Acetaminophen
NAT2[17,24,85]	Decreased	Caffeine

Feghali M, Venkataramanan R, Caritis S. Pharmacokinetics of drugs in pregnancy. Semin Perinatol. 2015 Nov;39(7):512–519. PMCID: PMC4809631

Volume of distribution

Pregnancy-induced physiologic changes during near term.

System (reference)	Parameter	Non-pregnant	Pregnant
Cardiovascular[64,71,72]	Cardiac output [L/min]	4.0	6.0
	Heart rate [beats per min]	70	90
	Stroke volume [mL]	65	85
	Plasma volume [L]	2.6	3.5
Respiratory[73,74]	Total lung capacity [mL]	4225	4080
	Residual volume [mL]	965	770
	Tidal volume [mL]	485	680
Liver[75]	Portal vein blood flow [L/min]	1.25	1.92
	Hepatic artery blood flow [L/min]	0.57	1.06[a]
Renal[76]	Glomerular filtration rate [mL/min]	97	144
	Serum creatinine [mg/dL]	0.7	0.5

[a]Not statistically significant.

Feghali M, Venkataramanan R, Caritis S. Pharmacokinetics of drugs in pregnancy. Semin Perinatol. 2015 Nov;39(7):512–519. PMCID: PMC4809631

Pregnancy Risk

A = controlled studies show no risk;

B = no evidence of risk in humans

C = risk cannot be ruled out; D = positive evidence of risk

X = contraindicated in pregnancy.

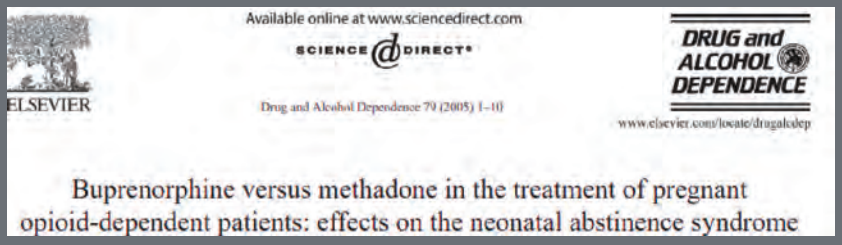
Lactation risk

- L1 = safest
- L2 = safer
- L3 = moderately safe
- L4 = possibly hazardous
- L5 = contraindicated

MOUD

- Methadone
- Buprenorphine
- Naltrexone

Methadone vs. Buprenorphine



- Medication administered to treat NAS in methadone-exposed neonates three times greater than for buprenorphine-exposed neonates
- Length of hospitalization was shorter for buprenorphine-exposed than for methadone-exposed neonates

Jones HE, Johnson RE, Jasinski DR, O'Grady KE, Chisholm CA, Choo RE, Crocetti M, Dudas R, Harrow C, Huestis MA, Jansson LM, Lantz M, Lester BM, Milio L. Buprenorphine versus methadone in the treatment of pregnant opioid-dependent patients: effects on the neonatal abstinence syndrome. Drug and Alcohol Dependence. 2005 Jul 1;79(1):1–10.

Naltrexone

- 230 non-randomized patients
- Retrospective analysis of prospectively collected data
- “Use of naltrexone MAT might be a viable option for the treatment of OUD in pregnancy in some patients”
  - HC, NAS, Length of Hospitalization improved

Planning

- Preconception planning is key
- Counseling must be individualized
- Refer to the appropriate team
- Maximize non-pharmacological interventions
- Discuss risks pragmatically
- Use a collaborative, multidisciplinary approach
- Breastfeeding should almost always be encouraged

Petrosellini C, McAlpine L, Protti O, Siassakos D. The use of psychotropic medication in the perinatal period. The Obstetrician & Gynaecologist. 2024;26(3):127–138.

Screening

- SUD
  - Nicotine
  - THC
- Depression
- Bipolar Disorder**
- Trauma

Interpretation

Antiepileptics and mood stabilizers	
Carbamazepine (Tegretol)	D
Lamotrigine (Lamictal)	C
Lithium	D
Valproic acid (Depakene)	D

Biomedical Ethical Principles

Medical Principles and Practice

Review

Med Princ Pract 2021;30:17–28
DOI: 10.1159/000509119

Received: November 24, 2019
Accepted: June 3, 2020
Published online: June 4, 2020

Principles of Clinical Ethics and Their Application to Practice

Basil Varkey

Biomedical Ethical Principles

- Non-malfeasance
- Beneficence
- Autonomy
- Justice

Perinatal Outcomes

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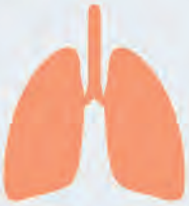
Health Outcomes

Opioid use disorder during pregnancy has been linked to:

Preterm Birth

Low Birthweight



Breathing Problems

Feeding Problems

Maternal / Fetal Complications

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Obstetrical complications resulting directly from substance use disorder

- Poor fetal growth
- Premature delivery
- Uterine infection
- Hypertension
- Spontaneous Abortion
- *In utero* Fetal Death

Biomedical Ethical Principles

- Principles
  - Non-malfeasance
  - Beneficence
  - Autonomy
- Addressable at the individual practitioner level

Justice

- People receive that which they deserve
- Distributive justice
  - Resources equitable distributed
  - Health equity issue

Health Equity

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JOHNS HOPKINS CENTER for HEALTH EQUITY

"envision a community, a nation, and a world in which every person can achieve his or her best health. "

Maternal Mortality

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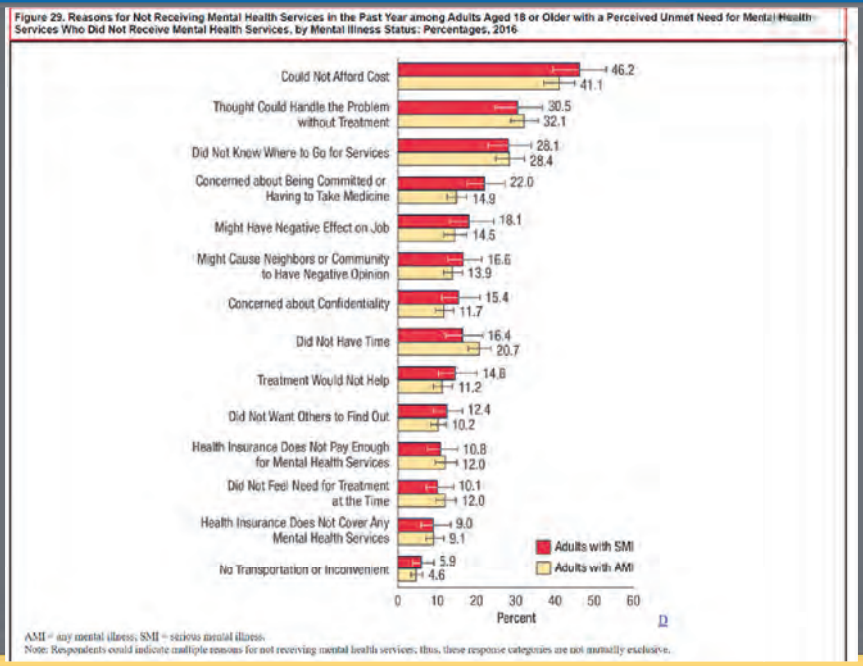
	Overall	
	Black	White
Life expectancy at birth	78.8	81.3
Proportion of population in childbearing years[a]	0.486	0.416
Women in childbearing years [b]	53,832,039	212,184,462
Female deaths during childbearing years[a]	81,513	246,879
Proportion of deaths during childbearing years due to maternal mortality[a]	0.030	0.018
Infant mortality rate (per 1000)	10.09	4.21
Proportion of women with diabetes and/or chronic hypertension during pregnancy	0.095	0.079
Proportion of live births delivered via cesarean section	0.357	0.308
Maternal mortality rate (per 100,000)	84.0	44.5
Proportion of childbearing population in each states-group by race	1.00	1.00

Patterson, Becker, Baluran, 2022

Health Equity

- Solution
  - Access
  - More providers?



April 15, 2025

SAMHSA ADVISORY

ADDRESSING THE SPECIFIC NEEDS OF WOMEN FOR TREATMENT OF SUBSTANCE USE DISORDERS

Substance Abuse and Mental Health Services Administration. (2021). Addressing the Specific Needs of Women for Treatment of Substance Use Disorders. *Advisory*.

Structural Competency

…includes the ability to recognize and respond to the larger social context with self reflexive humility and community engagement

Metzl, J. M., & Hansen, H. (2014). Structural competency: theorizing a new medical engagement with stigma and inequality. Social science & medicine, 103, 126-133.

Community Collaborations

- CPS
  - Substance Exposed Newborn (SEN) Collaborative
  - Inconsistency in implementation across the state
  - Safety planning
  - Unfunded collaboration
- Better advocacy needed

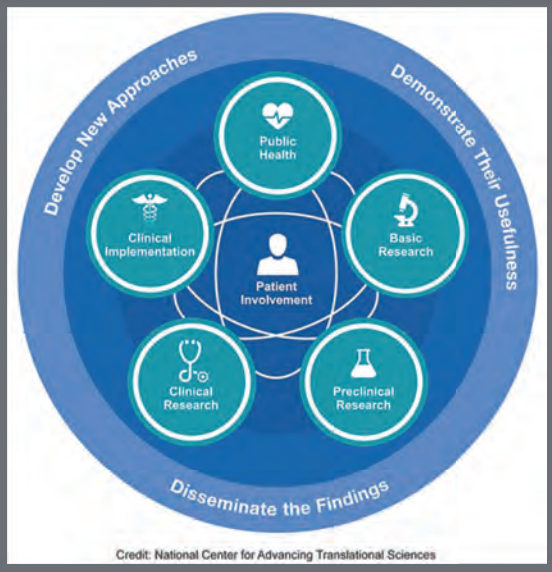
Child Protective Services

- Preservation of the newborn and family
  - Break the cycle of addiction and community disruption
- Legislative needs
  - Facilitate treatment before/treatment delivery
  - Ongoing recovery support women and families
  - Consistency of treatment quality across the state of Maryland

Importance of Postpartum Care

- Most vulnerable time for relapse
- Majority of maternal deaths related to substance use disorder occur postpartum
- Most deaths occurring in the first 60 days post-partum
- Expansion of Maryland Medicaid

Translation Research



Credit: National Center for Advancing Translational Sciences

Social Support

Perinatal women in substance use disorder treatment: Interest in partnering with family and friends to support recovery needs

Alexis Hammond MD, Denis Antoine MD, Michael Sklar MA and Michael Kidorf PhD

Department of Psychiatry and Behavioral Sciences, Addiction Treatment Services – BBRC, Johns Hopkins Bayview Medical Center, Johns Hopkins University School of Medicine, Baltimore, MD, USA

- Mean 4.4 drug free adults
- 80% willing to activate them in treatment

Hammond A, Antoine D, Sklar M, Kidorf M. Perinatal women in substance use disorder treatment: Interest in partnering with family and friends to support recovery needs. Journal of Addictive Diseases. 2024 May 7;1–7.

Structural Competency

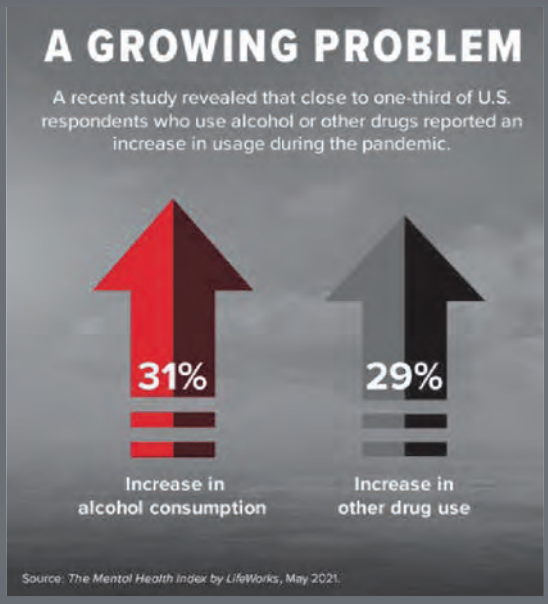
"…includes the [organization's] ability to recognize and respond to the larger social context with self reflexive humility and community engagement"

Metzl, J. M., & Hansen, H. (2014). Structural competency: theorizing a new medical engagement with stigma and inequality. Social science & medicine, 103, 126-133.

Stigma

- Structural competency
  - Recognizing the structures that shape clinical interactions
  - Rearticulating "cultural" presentations in structural terms
  - Observing and imagining structural intervention
  - Developing structural humility

Perspective



Era of Fentanyl

- Fentanyl and fentanyl analogues are driving the opioid epidemic
- Fentanyl use is associated with increased risk of precipitated withdrawal when using traditional dosing strategies for buprenorphine

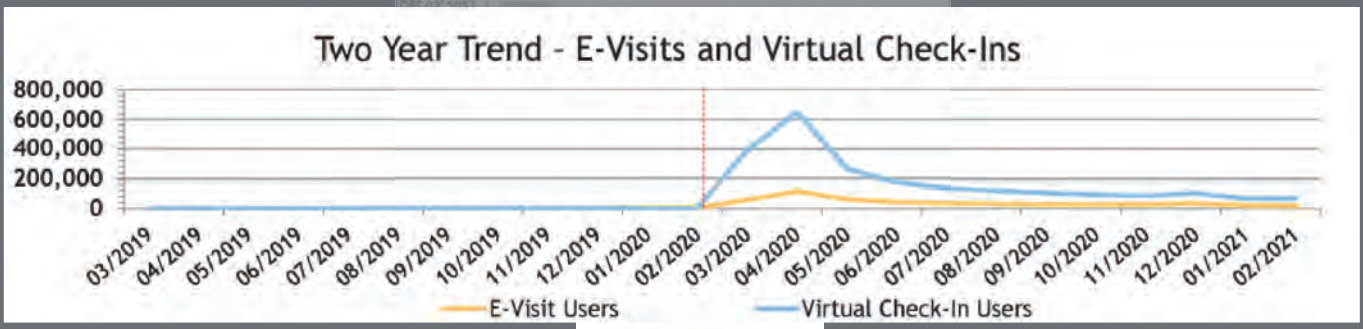
CDC, SUDORS, 2023
Varshneya et al. J Addict Med. 2021

COVID

Press release

New HHS Study Shows 63-Fold Increase in Medicare Telehealth Utilization During the Pandemic

Dec 03, 2021 | Telehealth



Neonatal Abstinence Syndrome

- 250 Southern Appalachia Counties (WV, VA, KY, MD, NC, OH, and TN)
- NAS (NOWS) rates rose by 335% from 2010-2018
- # of buprenorphine prescriptions rose by 413%.
  - (r = 0.977, R^2 = 95.53%, P < 0.001)

Shore S, Lewis N, Olsen M. Rise in Neonatal Abstinence Syndrome Rate Is Associated with Increase in Buprenorphine Prescription Numbers. South Med J. 2023 Dec;116(12):930-937. doi: 10.14423/SMJ.0000000000001634. PMID: 38051165.

BECKER'S
Hospital CFO Report

JOHNS HOPKINS MEDICINE

42 hospitals closing departments or ending services

Andrew Cass - Updated Friday, June 30th, 2023

A number of healthcare organizations have recently closed medical departments or ended services at facilities to shore up finances, focus on more in-demand services or address staffing shortages.

Complexity of care

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- OTP Access treatment to ancillary professionals
  - Nurses
  - Psychiatrists
  - Counseling (requirement of 42 CFR § 8.12)
  - Training Requirements for Medical Director Leadership
  - Often no perinatal expertise

Overdose potential

- Methadone (full-agonist)
  - Review of co-morbid Medications
  - Awareness of emerging medications
    - Fentanyl
    - Isotonitazine (Schedule I as of 2020)
    - Xylazine
  - Close monitoring of dose titration

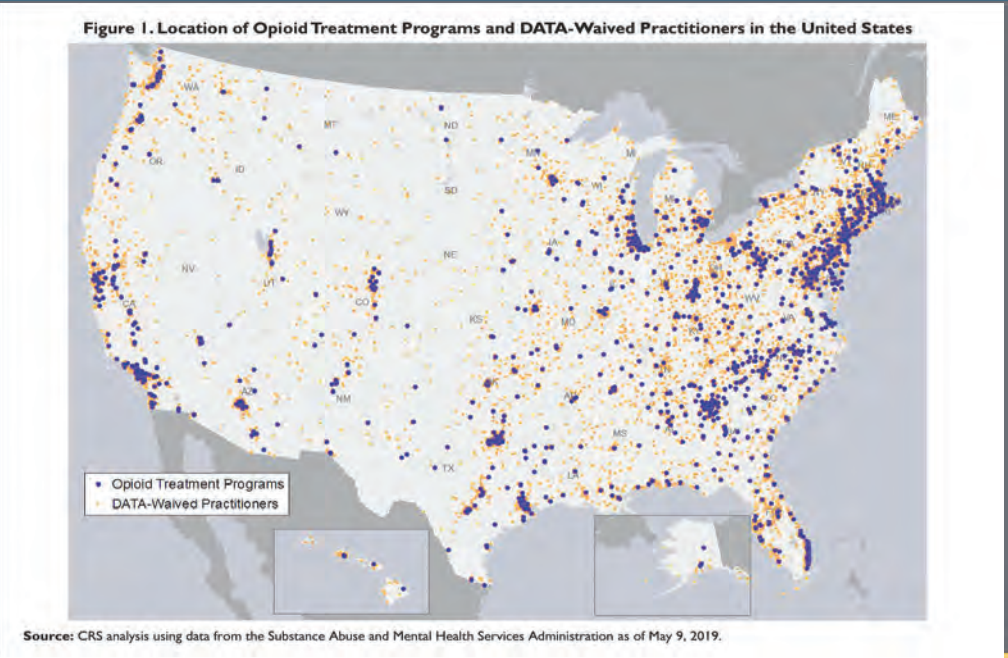
Increased Takehome flexibilities

- During the first 14 days of treatment, the take home supply is limited to 7 days
- From 15 days of treatment, the take home supply is limited to 14 days.
- From 31 days of treatment, the take home supply provided to a patient is not to exceed 28 days.

Standardization of treatment

- Justice (Ethical principles)
  - Distributive justice--Resources equitable distributed
    - Continuous quality improvement
    - Pregnant patients

Access



Duff, J., Carter J. (2019). Location of Medication-Assisted Treatment for Opioid Addiction: In Brief (CRS Report No. R45782). Congressional Research Service. www.crs.gov

Privacy

JOHNS HOPKINS MEDICINE

The Perceived Impact of 42 CFR Part 2 on Coordination and Integration of Care: A Qualitative Analysis

Dennis McCarty, Ph.D., Traci Rieckmann, Ph.D., Robin L. Baker, M.P.H., K. John McConnell, Ph.D.

- **A Barrier to Communication and Information Sharing**
- **A Need for Updated Regulations**
- **More patient input needed**

McCarty D, Rieckmann T, Baker RL, McConnell KJ. The Perceived Impact of 42 CFR Part 2 on Coordination and Integration of Care: A Qualitative Analysis. Psychiatr Serv. 2017 Mar;68(3):245–249. PMID: 27799017

Privacy

JOHNS HOPKINS MEDICINE

ORIGINAL RESEARCH

Privacy, Care-seeking, and Stigma: A Qualitative Investigation of Patient Perspectives on Sharing Substance Use Disorder Treatment Records

James Aluri, MD, MA, Evelyn Gurule, MD, PhD, Tulha Dobler Siddiqi, MD, Camryn R. Upson, Adam D'Sa, MD, Eric C. Strain, MD, and Denis G. Antoine, MD

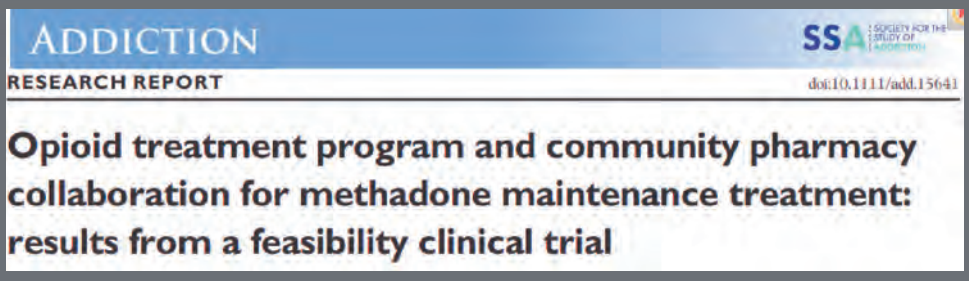
- Women reported that health care professionals, particularly in emergency or perinatal care contexts, treated them differently or negatively after learning about their substance use history.
- Most participants were unaware of how their substance use treatment records were protected or who had access to their records.

Aluri J, Gurule E, Siddiqi TD, Upson CR, D'Sa A, Strain EC, Antoine DG. Privacy, Care-seeking, and Stigma: A Qualitative Investigation of Patient Perspectives on Sharing Substance Use Disorder Treatment Records. Journal of Addiction Medicine. 2024 Nov 8;10.1097/ADM.0000000000001460.

The Modernizing Opioid Treatment Access Act (MOTAA) – H.R. 1359

- Bipartisan bill introduced in March 2023 (did not pass)
- Would have allowed:
  - Board-certified physicians in addiction medicine or addiction psychiatry to prescribe methadone for OUD outside an OTP
  - Community pharmacies to dispense methadone for OUD

Innovation


ADDICTION

SSA

RESEARCH REPORT

doi:10.1111/add.15641

Opioid treatment program and community pharmacy collaboration for methadone maintenance treatment: results from a feasibility clinical trial

"Pharmacy administration and dispensing of physician-prescribed methadone for methadone maintenance treatment to be feasible and acceptable"

Wu, L. T., John, W. S., Morse, E. D., Adkins, S., Pippin, J., Brooner, R. K., & Schwartz, R. P. (2022). Opioid treatment program and community pharmacy collaboration for methadone maintenance treatment: results from a feasibility clinical trial. *Addiction*, *117*(2), 444-456.

Homelessness and SUD

- Unstable Housing complicates recovery trajectory
- Two main approaches historically
  - Linear (retention issues)
  - Housing First

Polcin DL. Co-occurring substance abuse and mental health problems among homeless persons: Suggestions for research and practice. Journal of Social Distress and Homelessness. Taylor & Francis; 2016 Jan 2;25(1):1–10. PMID: 27092027

Housing First (HF)

- Areas of concern
  - Adequacy of supportive services
  - Adequacy in deployment of a modern recovery philosophy

"Large-scale implementation of HF is likely to require significant additional investment in client service supports to assure that results are concordant with those found in research studies."

Kertesz SG, Austin EL, Holmes SK, DeRussy AJ, Van Deusen Lukas C, Pollio DE. Housing first on a large scale: Fidelity strengths and challenges in the VA's HUD-VASH program. Psychol Serv. 2017 May;14(2):118-128. doi: 10.1037/ser0000123. PMID: 28481597.

Integrated Care

THE LANCET

- 34 studies (Systematic Review)
  - USA (25), Canada (7), France (1), and Spain (1)
- Housing services with SUD and MH support effectively reduced substance use
  - Short follow-up periods and high attrition
  - Limited cost-effectiveness data
  - High income countries

John DA, McGowan LJ, Kenny RPW, Joyes EC, Adams EA, Shabaninejad H, Richmond C, Beyer F, Landes D, Watt RG, Sniehotta FF, Paisi M, Bambra C, Craig D, Kaner E, Ramsay SE. Interventions to improve oral health and related health behaviours of substance use, smoking, and diet in people with severe and multiple disadvantage: a systematic review of effectiveness and cost-effectiveness. The Lancet. **2023** Nov 1;402:S58.

Reinforcement-based Treatment (RBT)

- CBT, MI, Positive environment
- Drug abstinence
  - 50% for Recovery Housing (RH) + RBT
  - 37% for RH and 13% for Usual Care ($P < 0.001$).
  - At 6 months, RH + RBT more likely abstinent
  - Length of stay in recovery housing mediated abstinence outcomes and was longer in RH + RBT (49.5 days) than in RH (32.2 days; $P < 0.002$).

UHI's Pathways to Health Equity in Baltimore

1. Build partnerships to enhance community health capacity.
2. Allocate resources for impactful health strategies
3. Incorporate community input to foster trust and justice.

Guiding Principles and Best Practices for Community Engagement

JOHNS HOPKINS URBAN HEALTH INSTITUTE

Helping Up Mission (HUM)

JOHNS HOPKINS MEDICINE

- Houses up to 400 men
- Multiple residential programs
- Overnight guest services
- 15-20 admissions per week

4/15/2025 60

HUM

- Year-long comprehensive program
- Spiritual life classes
- Life enrichment activities

HUM

- Therapeutic community
- Access to health care services
- Innovative learning center
- Workforce development
- Peer recovery specialists

Cornerstone Clinic at HUM

- Opened in 2012
  - Substance use disorder counseling
  - Mental health treatment
  - Solely treats residents of HUM

Engagement

- Cornerstone clinic IOP program
  - Minimum of 9 hours
  - FY14: 30%
  - FY17: 78%
  - FY18: 80%
  - FY21: 76%
  - FY22: 81%
- Extends treatment by 55 days ($p<0.0001$)

Helping Up Mission 2023

- Women and Children's center
- 250 beds
  - 200 Women
  - 50 Children
  - Johns Hopkins Bayview Center for Addiction And Pregnancy
  - Community Academic Partnership

CAP Referrals

INTAKE CRITERIA:

- AGE 18 AND OVER
- **CALL 410-550-0051**

SUMMARY

- Complexity of presentation
- Treatment is dynamic
- Multifactorial influences
- Dyad is important
- Potential for broader support

Thank You

- Denis Antoine
- Antoine@jhmi.edu

Maryland
DEPARTMENT OF HEALTH

MARYLAND DEPARTMENT OF HEALTH
OFFICE OF PHARMACY SERVICES

201 W. Preston Street, Baltimore MD 21201

Toll Free: 1-800-492-5231 / TTY: 1-800-735-2258

https://health.maryland.gov/mmcp/pap