Strategies to Reduce Recidivism and Prevent MOUD Diversion in Jails and Prisons

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NIDA UG1DA050067 Massachusetts JCOIN Hub

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Need for MOUD in jails and prisons

- U.S. opioid overdose deaths at highest level yet in 2022[1]
- Risk of overdose death is **120x higher** for people with histories of incarceration compared to those without[2]
- Medications for opioid use disorder (MOUD) are FDA-approved, evidence-based treatments shown to reduce the deleterious effects of opioid use disorder and the risk of overdose.[3]

1. National Center for Health Statistics: Provisional Drug Overdose Death Counts. Centers for Disease Control and Prevention Updated August 16, 2023. Accessed August 18, 2023. https://www-cdc-gov.ezproxy.library.tufts.edu/nchs/nvss/vsrr/drug-overdose-data.htm#nature_sources_of_data
2. Massachusetts Department of Public Health. (2017). An Assessment of Fatal and Non-Fatal Opioid Overdoses in Massachusetts: 2011-2015. Accessed: Jan 15, 2022. Available at: http://www.mass.gov/eohhs/docs/dph/stop-addiction/legislative-report-chapter-55-aug-2017.
3. Larochelle MR, Bernson D, Land T, Stopka TJ, Wang N, Xuan Z, Bagley SM, Liebschutz JM, Walley AY. Medication for Opioid Use Disorder After Nonfatal Opioid Overdose and Association With Mortality: A Cohort Study. Ann Intern Med. 2018 Aug 7;169(3):137-145. doi: 10.7326/M17-3107. Epub 2018 Jun 19. PMID: 29913516; PMCID: PMC6387681.

Two topics for today

What is the impact on recidivism of offering MOUD in jails?

How does offering MOUD in jails impact medication diversion?

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Recidivism and mortality after in-jail buprenorphine treatment for opioid use disorder

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ARTICLE INFO

Keywords:
Recidivism
Mortality
Buprenorphine
Naltrexone
Medications for opioid use disorder (MOUD)
Criminal justice settings
Massachusetts Justice Community Opioid Innovation Network (MassJCOIN)

ABSTRACT

Background: Buprenorphine is an effective medication for opioid use disorder (MOUD) when offered in community-based settings, but evidence is limited for incarcerated populations, particularly in relation to recidivism. In Massachusetts, Franklin County jail (FCSO) was among the first to provide buprenorphine; adjacent Hampshire County jail (HCHC) offered it more recently. These jails present a natural experiment to determine whether outcomes are different between individuals who did and did not have the opportunity to receive buprenorphine in jail.

Methods: We examined outcomes of all incarcerated adults with opioid use disorder (n = 469) who did (FCSO n = 197) and did not (HCHC n = 272) have the opportunity to receive buprenorphine. The primary outcome was post-release recidivism, defined as time from jail exit to a recidivism event (incarceration, probation violation, arraignment). Using Cox proportional hazards models, we investigated site as a predictor, controlling for covariates. We also examined post-release deaths.

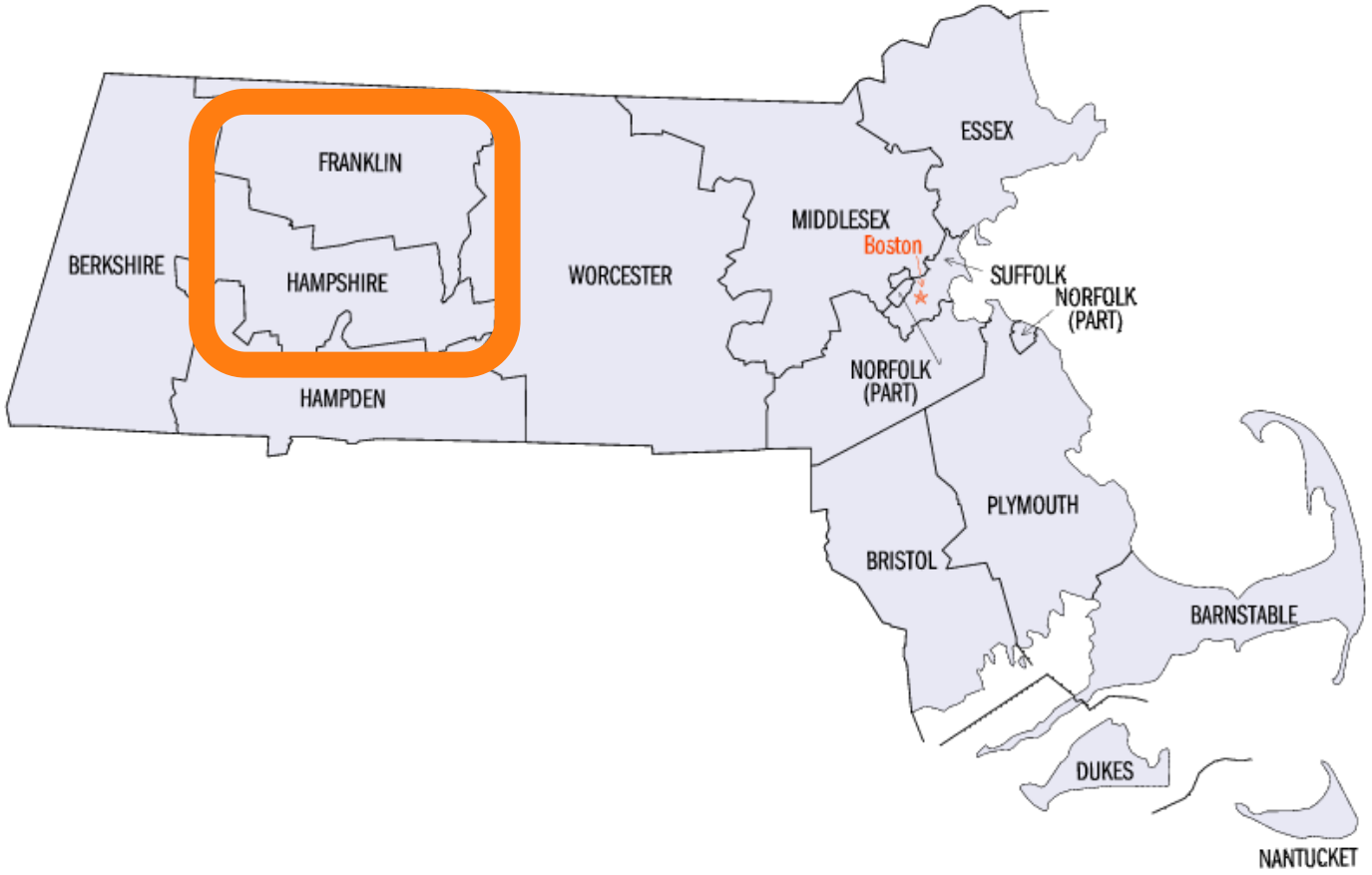
Results: Fewer FCSO than HCHC individuals recidivated (48.2% vs. 62.5%; p = 0.001); fewer FCSO individuals were re-arraigned (36.0% vs. 47.1%; p = 0.046) or re-incarcerated (21.3% vs. 39.0%; p < 0.0001). Recidivism risk was lower in the FCSO group (hazard ratio 0.71, 95% confidence interval 0.56, 0.89; p = 0.003), net of covariates (adjusted hazard ratio 0.68, 95% confidence interval 0.53, 0.86; p = 0.001). At each site, 3% of participants died.

Conclusions: Among incarcerated adults with opioid use disorder, risk of recidivism after jail exit is lower among those who were offered buprenorphine during incarceration. Findings support the growing movement in jails nationwide to offer buprenorphine and other agonist medications for opioid use disorder.

NIH HEAL INITIATIVE

Natural experiment

- Two Houses of Corrections in Western Massachusetts (HOC, jail), mostly rural.
- In 2015, Franklin County jail began providing buprenorphine, in addition to naltrexone.
  - Buprenorphine induction and continuation at jail entry.
  - Initially focused on sentenced individuals, later included pre-trial individuals.
- Hampshire jail was providing naltrexone, mostly at HOC exit, and no buprenorphine.



Franklin County, MA

- Population ~73,000
- Economically depressed area with extensive opiate use
- Federally designated **rural county**
- Jail average daily population: ~160
- County Sheriff & District Attorney are elected; Judges are appointed
- 2 District Courts and 1 Superior Court

Franklin County Sheriff's Office (FCSO) - Timeline

- **January 2011:** Sheriff Donelan took office in FCSO
- **January 2014:** implements co-occurring, trauma informed treatment model and post-release casework
- **Spring-Fall 2015:** offers naltrexone
- **Spring 2016:** offers buprenorphine maintenance
- **January 2018:** offers buprenorphine induction
- **August 2019:** becomes one of the first jails in the nation to become an Opioid Treatment Provider (OTP)
- **September 2019:** joins the Massachusetts JCOIN (Justice Community Opioid Innovation Network)

FCSO Medical Exam Room

FCSO Pharmacy and Methadone Safe

FCSO Dispensing Process: Buprenorphine

Study design

Research questions

- Post-release outcomes
- Characteristics and treatment factors that impact outcomes

1-4 year follow-up of 500 adults with OUD, exited jail Jan 2015-Apr 2019:

n=250 received MOUD while at Franklin HOC

n=250 did not receive MOUD while at Hampshire HOC

Master list & initial contact
Contracted jail staff will identify sample, locate (deceased, incarcerated, alive), conduct initial contact

Follow-up interview
Research staff will conduct interview by telephone

Biological samples
Research staff will collect saliva/blood from sub-sample (n=50) and test for substance use and infectious disease (HIV/HCV/syphilis)

Securing administrative data
If available and accessible, obtain electronic records on all prospective participants (n=500)

- National Death Index
  - Date & cause of death (ICD-10)
- Jail records
  - MOUD and other addiction treatment
  - Criminal justice system
  - Health records

Outcomes

Primary: opioid use trajectories 1-4 years post-release from jail

Secondary: mortality, MOUD access and utilization in the community, recidivism, infectious disease

Defining the sample

- Identified all **adults with OUD** who exited jail January 2015 – April 2019
  - Has OUD
  - Date of jail exit
  - Whether received MOUD while in jail or not
  - Other info

- Identified indicators of **recidivism** in Massachusetts using criminal justice records

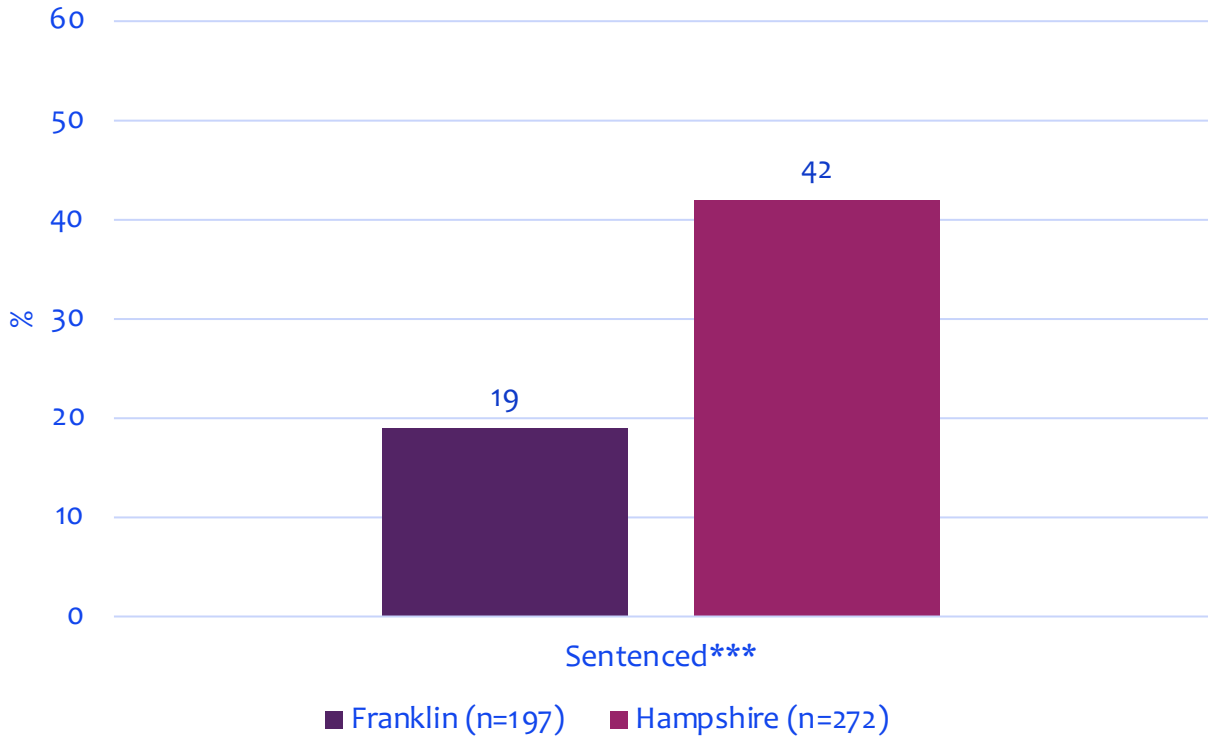
- Total n=469; all have at least ≥1 year of observation after jail exit.

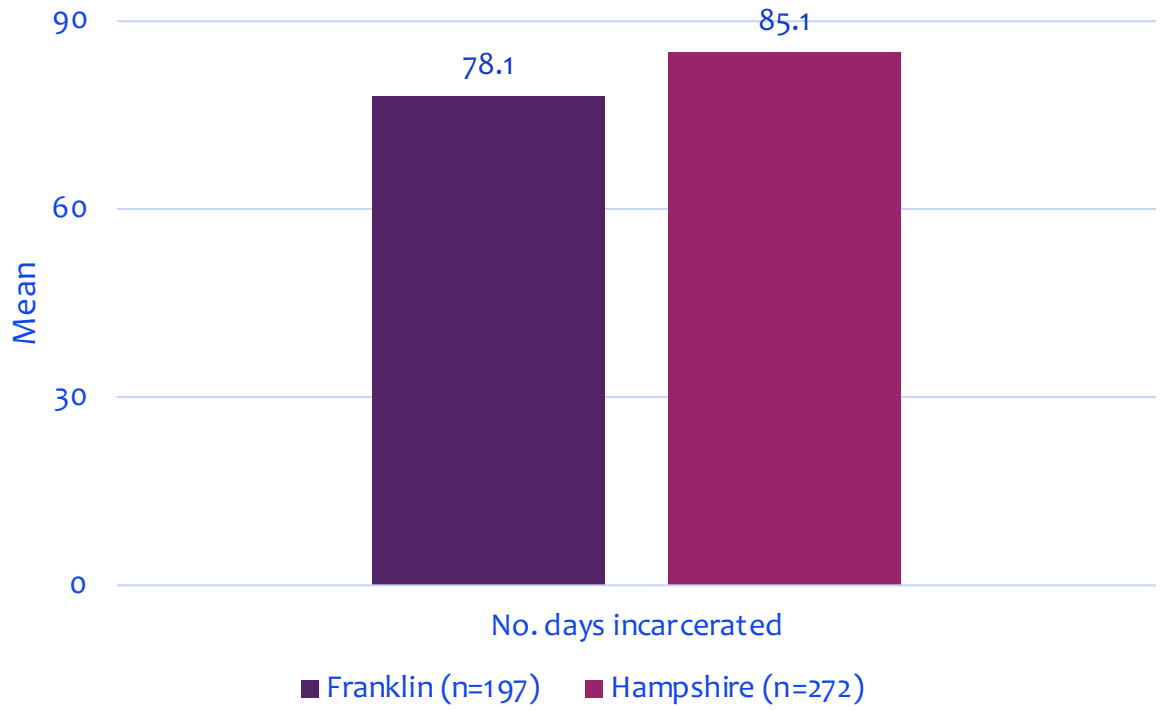
Demographics at baseline (jail exit)

	Total (n=469)	
	Franklin (n=197; 42%)	Hampshire (n=272, 58%)
Male, %***	91.9	100
Race/ethnicity, %		
White	96.0	96.0
Black	4.0	4.0
Other	<1	<1
Age, mean	34.5	35.1

* p<0.05, ** p<0.01, ***p<0.001; t-test for continuous variables and chi square for categorical variables.

Criminal justice system status on index jail episode





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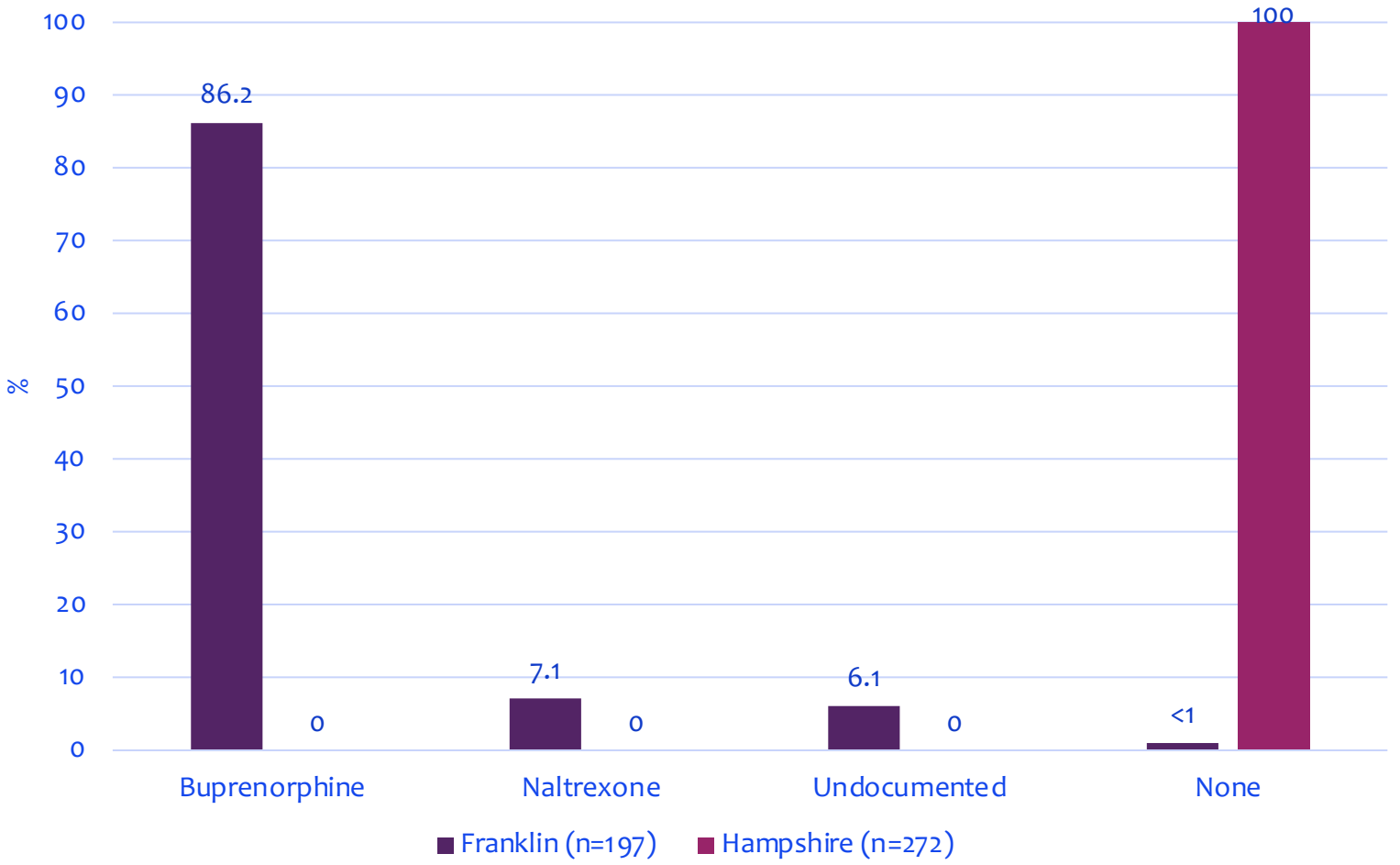
MOUD while in jail



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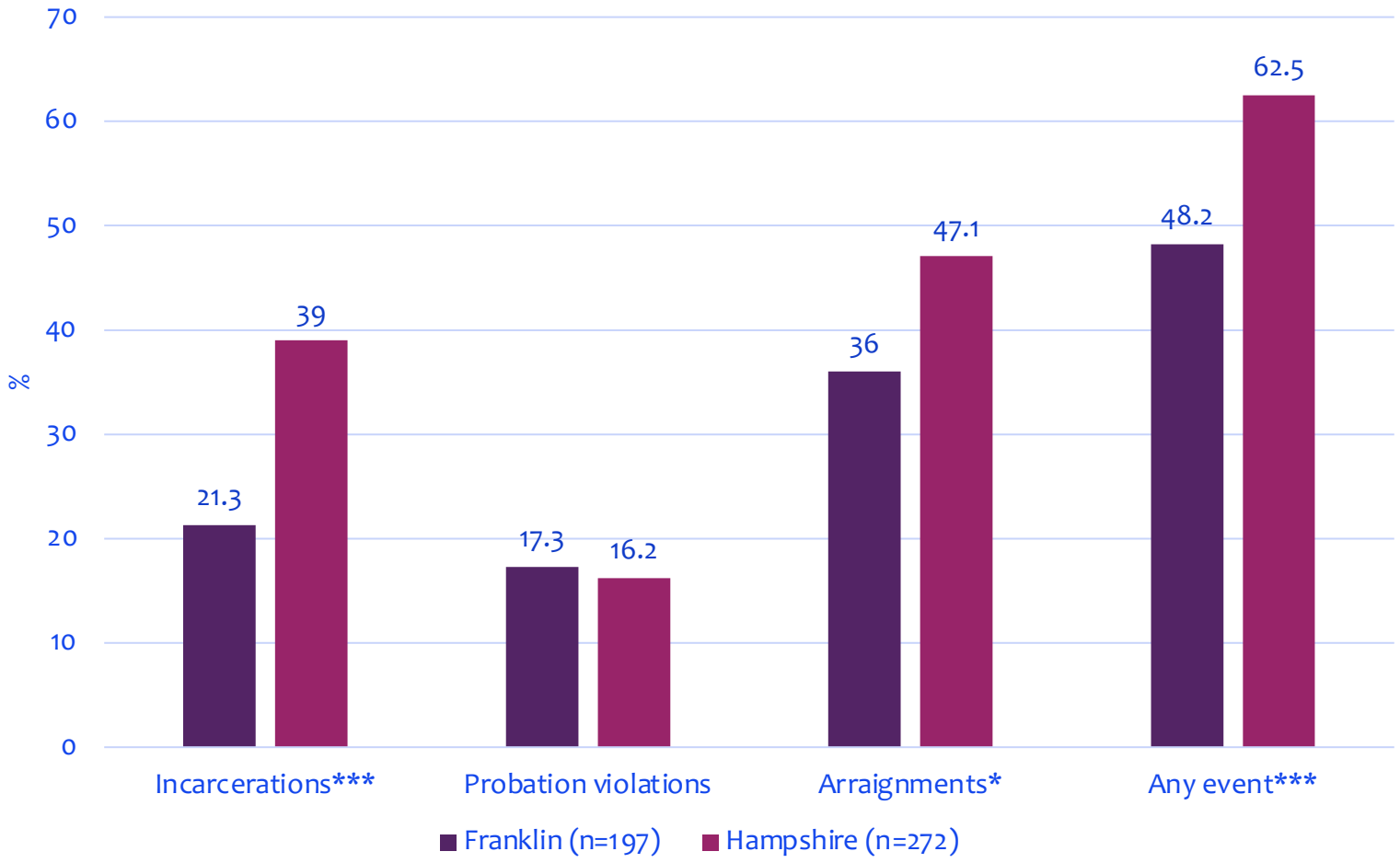
Recidivism after exit from index jail episode



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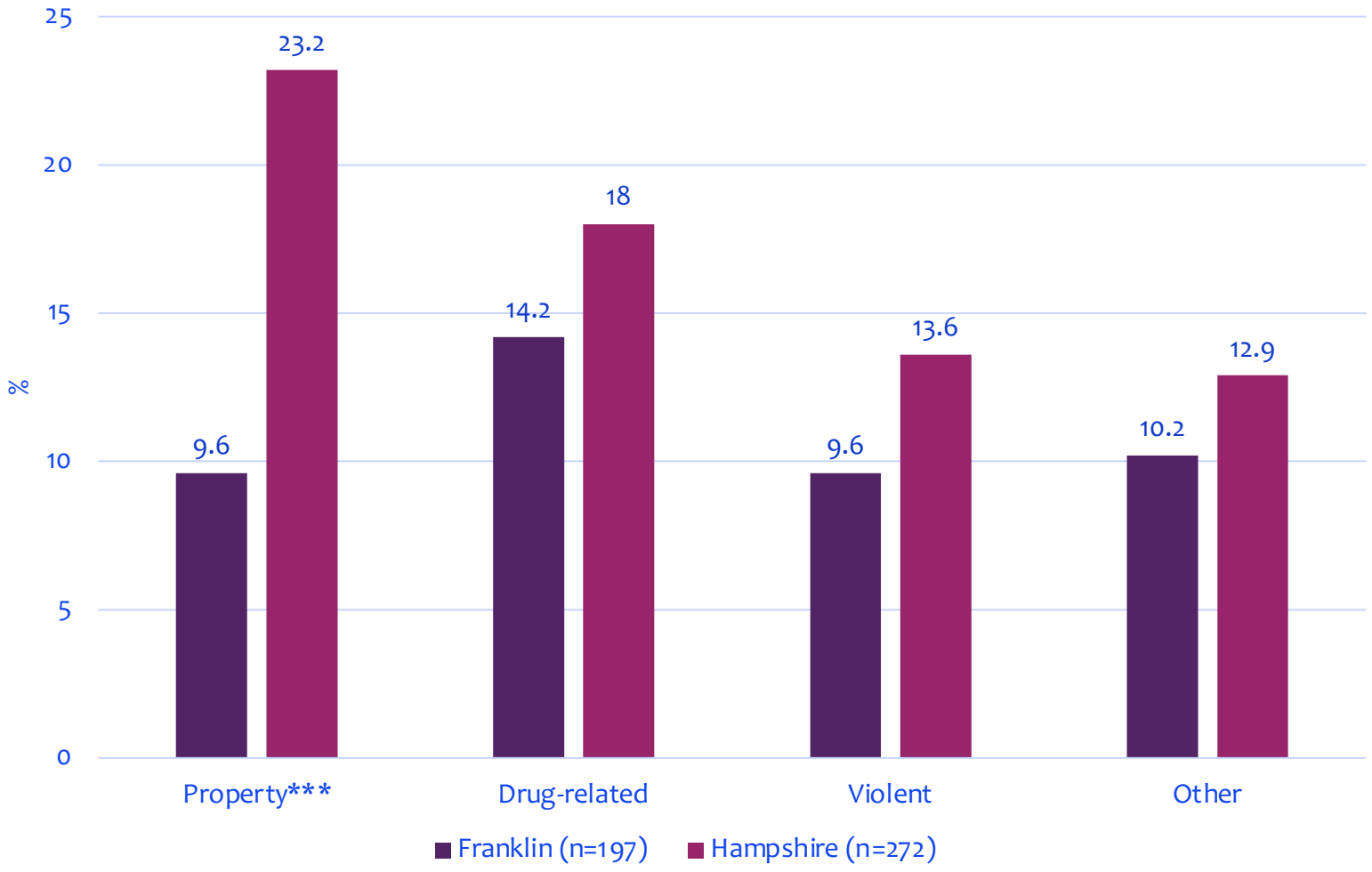
Charge on arraignment (first 3 events)



National Institutes of Health
HEAL Initiative

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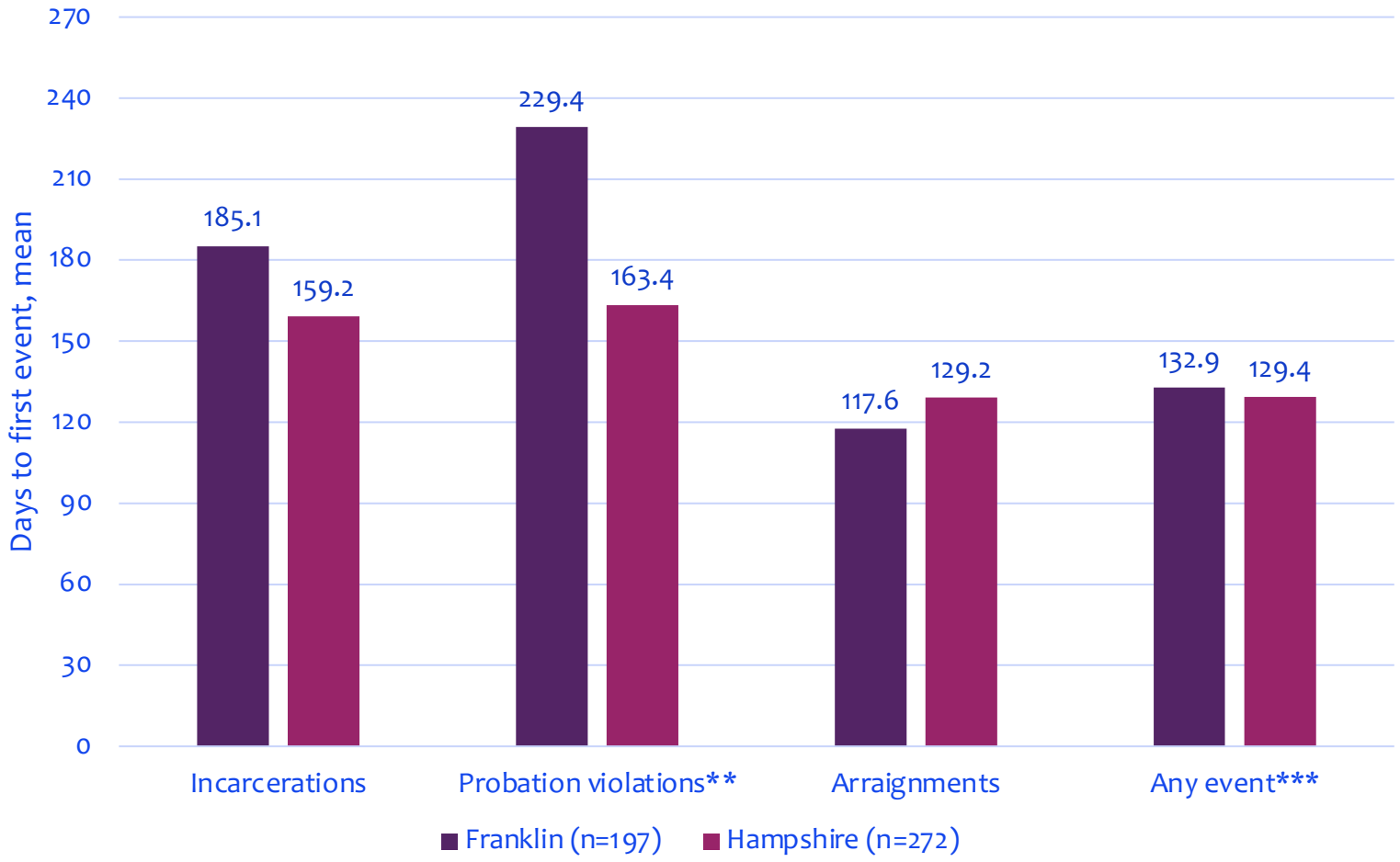
Days to recidivism event after exit from index jail episode



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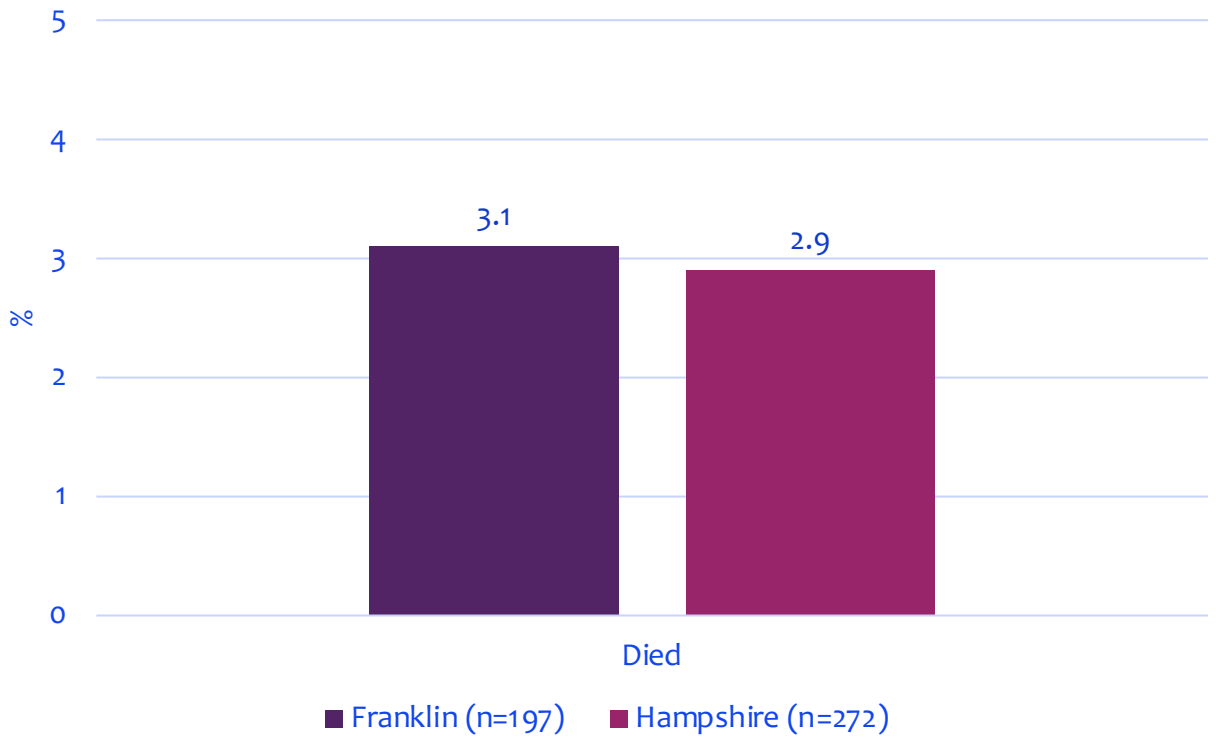
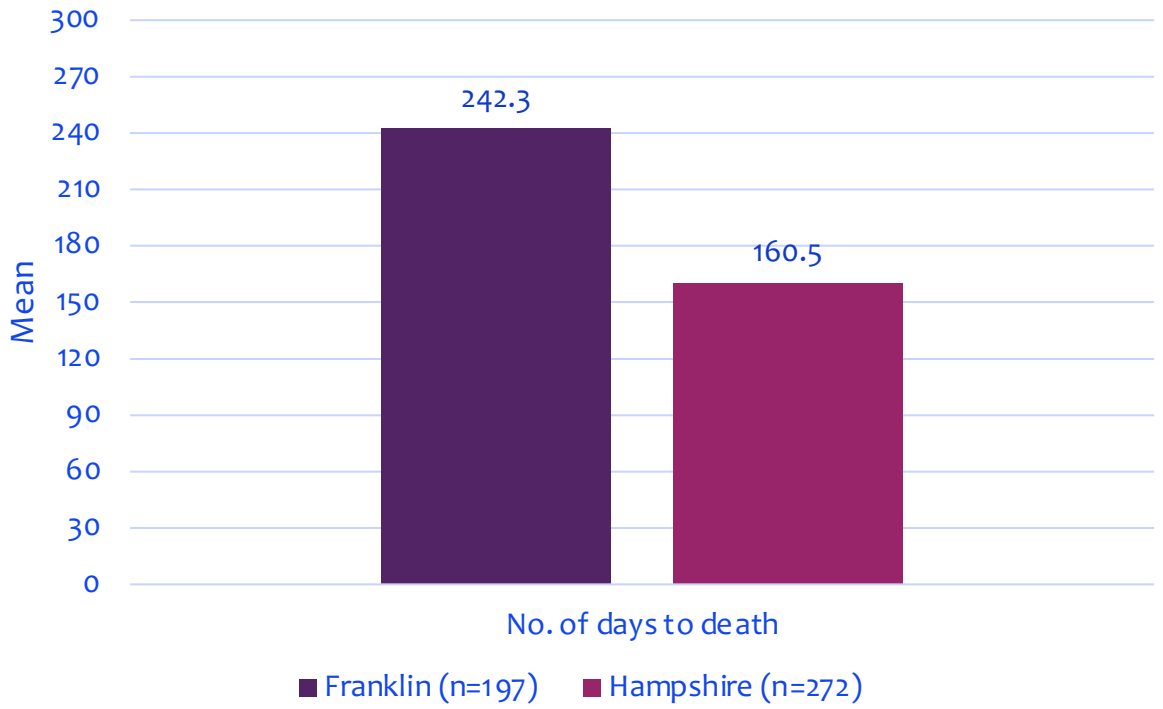
Mortality after exit from index jail episode





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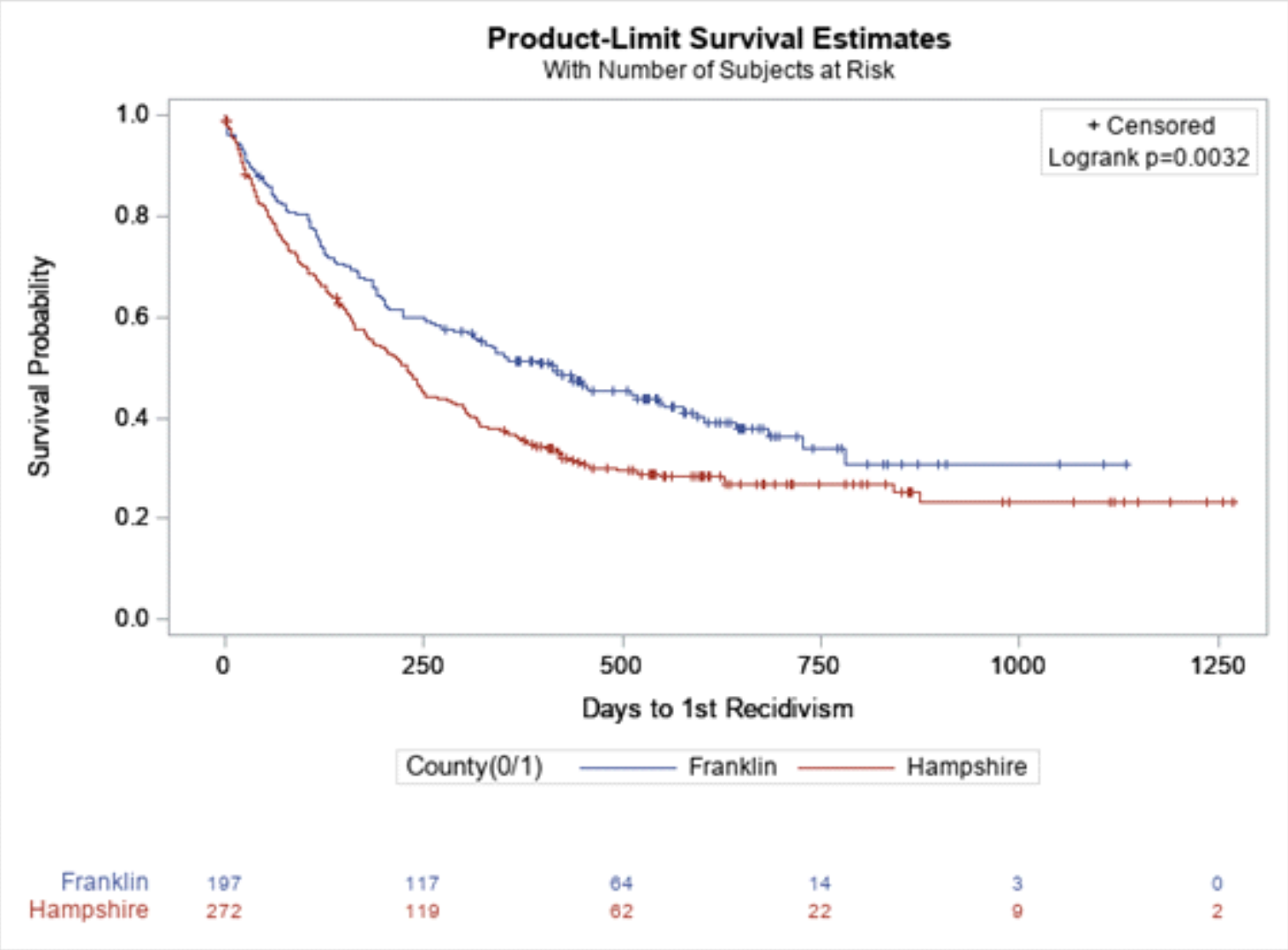
Predictors of recidivism: adjusted logistic regression results

Predictor	Outcome Odds Ratio (95% Confidence Interval)							
	Recidivism (any)	Incarceration	Probation violation	Arraignment (any)	Arraigned: Drug	Arraigned: Property	Arraigned: Violent	Arraigned: Other
County: Franklin (ref = Hampshire)	0.51 (0.35, 0.76)	0.37 (0.24, 0.58)	0.91 (0.55, 1.52)	0.67 (0.45, 0.99)	0.76 (0.45, 1.28)	0.39 (0.22, 0.69)	0.70 (0.38, 1.28)	0.79 (0.43, 1.44)
# of prior incarcerations	1.06 (1.02, 1.10)	1.03 (0.99, 1.07)	0.99 (0.95, 1.04)	1.06 (1.02, 1.10)	1.05 (1.00, 1.09)	1.05 (1.01, 1.09)	1.04 (0.99, 1.09)	1.02 (0.97, 1.07)
Jail status: pre-trial (index, ref = sentenced)	2.05 (1.35, 3.12)	2.24 (1.41, 3.56)	2.27 (1.23, 4.21)	1.26 (0.83, 1.90)	1.52 (0.87, 2.67)	0.96 (0.58, 1.62)	1.27 (0.68, 2.38)	1.06 (0.57, 1.97)

Recidivism is defined as any incarceration, probation violation, or arraignment that occurred after exit from jail on index episode.

Time from jail exit to first recidivism event



Recidivated , % (example)				
	Franklin		Hampshire	
	No	Yes	No	Yes
Day 0	100	0	100	0
Day 33	91.1	8.8	88.7	11.3
Day 104	79.4	20.6	68.5	31.5
Day ~207	61.8	38.2	50.7	49.3
Day 365	51.8	48.2	37.5	62.5

Cox proportional hazards model unadjusted hazard ratio (95% CI) 0.71 (0.56, 0.89), p = 0.003

Adjusted for number of prior incarcerations, index jail status is pre-trial vs. sentence HR 0.68 (0.53, 0.86), p = 0.001

Interpretation: We found a 29% reduction in risk of recidivism, which reduced further to 32% after adjusting for baseline history of interactions with the criminal justice system and index jail status.

Summary and current status

- Among incarcerated adults with opioid use disorder, the expected **risk of recidivism** one year after jail exit is **lower among those who were offered MOUD** during incarceration (Franklin) compared to those who were not (Hampshire).
- Associations remain after adjusting for prior incarcerations, current status (pre-trial vs. sentenced), and age.
- Today, all jails in Massachusetts offer FDA-approved types of MOUD.

Limitations and strengths

- Observational study, not a randomized clinical trial.
- Measures are based on administrative data.
  - Limited set of measures.
  - Recidivism indicator does not encompass events outside of MA, or crime.
- Two sites located in a mostly rural setting in one state.
- Did not examine potential differences by site.
  - Provision of non-MOUD services.
  - Policing practices, court processes, other contextual factors.
- Capitalized on natural experiment.
- Measured outcomes on all individuals with OUD who exited jail during our time period.
- Examined recidivism post-exit from jail in relation to provision of MOUD in jail.

Two topics for today

What is the impact on recidivism of offering MOUD in jails?

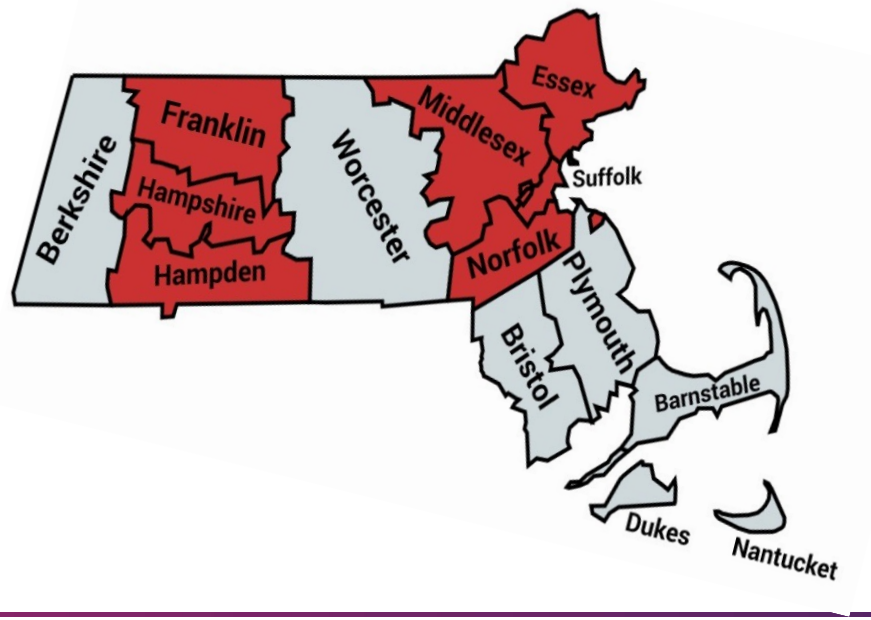
How does offering MOUD in jails impact medication diversion?

Massachusetts JCOIN – Context

- Legislative mandate (CARE Act) created Massachusetts Chapter 208
- Required jails* to implement a pilot program for all FDA-approved types of MOUD no later than 09/01/2019
- The pilot required medication maintenance & induction w/in 30 days of release
- MassJCOIN is funded to conduct a type 1 hybrid effectiveness-implementation study

Includes jails and Houses of Correction

JCOIN
JUSTICE COMMUNITY OPIOID INNOVATION NETWORK



Massachusetts JCOIN - Aims

Aim 1. *Longitudinal treatment outcome study*

- Incarcerated w/ OUD who receive XR-NTX, BUP-NX, methadone, or no MOUD
- Primary outcomes: post-release MOUD initiation, engagement, retention
- Secondary outcomes: fatal and non-fatal overdose; ED & hospital utilization; recidivism

Aim 2. *Implementation study*

- Contextual **factors that facilitate and impede delivery of MOUD in jail**
- Community care coordination
- Best practice strategies

Aim 3. *Economic evaluation*

- Cost **to the correctional system of implementing** MOUD in jail
- From **state-policymaker and societal perspectives, compare the value of MOUD prior to release from jail to no MOUD among matched controls**

What about MOUD diversion?

- Offering MOUD in carceral settings has resulted in **heightened concerns about medication diversion**[1]

- Correctional officials often cite **potential diversion as a reason for *not* offering MOUD** treatment[2,3]

1. Bandara, S., et al. (2021). Methadone and buprenorphine treatment in United States jails and prisons: lessons from early adopters. Addiction. https://doi.org/10.1111/add.15565
2. Doernberg, M., et al. (2019). Demystifying buprenorphine misuse: Has fear of diversion gotten in the way of addressing the opioid crisis? *Substance abuse*. https://doi.org/10.1080/08897077.2019.1572052
3. Gryczynski, J., et al. (2021). Use of non-prescribed buprenorphine in the criminal justice system: Perspectives of individuals recently released from incarceration. *Journal of substance abuse treatment*. https://doi.org/10.1016/j.jsat.2021.108349

Journal of Substance Abuse Treatment

journal homepage: www.elsevier.com/locate/jsat

Uncommon and preventable: Perceptions of diversion of medication for opioid use disorder in jail

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ARTICLE INFO

Keywords:
Medication diversion
Buprenorphine
Medications for opioid use disorder (MOUD) treatment
Criminal justice settings
Qualitative design
Massachusetts Justice Community Opioid Innovation Network (MassJCOIN)

ABSTRACT

Introduction: Correctional officials often cite diversion of medication for opioid use disorder (MOUD) treatment (e.g., buprenorphine) as a reason for not offering MOUD treatment in jails and prisons, but it is poorly understood whether these fears are justified. We aimed to understand staff perceptions of medication diversion from jail-based MOUD programs and the factors that contribute to and prevent diversion.

Methods: We conducted qualitative analyses of semi-structured in-depth interviews and focus groups performed in 2019–20 with 61 administrative, security, behavioral health, and clinical staff who implement MOUD programming in seven Massachusetts jails.

Results: Contrary to staff expectations, buprenorphine diversion was perceived to occur infrequently during MOUD program implementation. The MOUD program changed staff views of buprenorphine, i.e., as legitimate treatment instead of as illicit contraband. Also, the program was perceived to have disrupted the illicit buprenorphine market in jail and reduced related coercion. Proactive strategies were essential to prevent and respond to buprenorphine diversion. Key components of diversion prevention strategies included: staff who distinguished among different reasons for diversion; comprehensive and routinized but flexible dosing protocols; communication, education, and monitoring; patient involvement in assessing reasons for diversion; and written policies to adjudicate diversion consequences.

Conclusion: With appropriate protocols, buprenorphine diversion within correctional programs designed to provide MOUD treatment is perceived to be uncommon and preventable. Promising practices in program design help limit medication diversion and inform correctional officials and lawmakers as they consider whether and how to provide MOUD treatment in correctional settings.

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Research Paper

Diversion of medications to treat opioid use disorder: Qualitative findings from formerly incarcerated adults in Massachusetts

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Keywords:
Medication diversion
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Qualitative design
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ABSTRACT

Background: Carceral officials often cite diversion of medication for opioid use disorder (MOUD) (e.g., buprenorphine) as a reason for not offering MOUD treatment in jails and prisons with little understanding of patient perspectives. We aimed to understand patient perceptions of medication diversion from jail-based MOUD programs and the factors that contribute to and reduce diversion.

Methods: We conducted thematic analyses of semi-structured interviews held in 2021-22 with 38 adults who received MOUD treatment and were released from eight Massachusetts jails that had implemented a MOUD program on or after September 2019.

Results: Consistent with prior reports from carceral staff, patients perceived MOUD diversion to happen less frequently than expected, which they attributed to dosing protocols that have effectively reduced it. Patients reported that MOUD availability reduced the contraband buprenorphine market, although other contraband substances have entered jails (fentanyl, oxycodone, K2). Patients perceived Subutex to have greater misuse potential and added diversion risks. Patients valued graduated consequences and other efforts to reduce MOUD diversion and contraband for making jails safer and for enabling patients to receive treatment. Nearly all participants reported having heard about, witnessed, or been involved in actual or attempted diversion, with variation in reports by jail. Patients suggested that dispensing MOUD to all who need it immediately upon intake would be the most effective way to reduce MOUD diversion and contraband.

Conclusion: Formerly incarcerated patients perceived MOUD diversion within jail medication programs as occurring less often than expected and that it can be reduced with appropriate protocols. To help limit medication diversion, patients recommended provision of MOUD upon intake to all individuals with opioid use disorder who need it. Findings have implications for MOUD program adaptation, successful routinization, and diffusion in carceral settings.

NIH HEAL INITIATIVE

Two qualitative studies about MOUD diversion

- Jails were located in urban, suburban, and rural communities across Massachusetts

Staff, n=61

- Jail staff involved in the MOUD program implementation or decision making
- Recruited from 7 participating jails
- Data collected in 2019-2020

Patients, n=38

- Adults who received MOUD treatment in jail and were released
- Recruited from 8 participating jails
- Data collected in 2021-2022

Qualitative data analysis

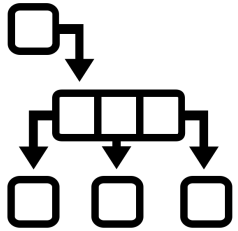
Conduct interviews and focus groups

Created by Prashanth Rapolu from Noun Project

Transcribe data

Created by Slamlabs from Noun Project

Code data in teams



Created by Kirby Wu from Noun Project

Identify themes

Created by Eko Purnomo from Noun Project

Summarize findings and share

Created by lastspark from Noun Project

Reasons for MOUD diversion

- Self treatment
- Helping others
- Split dosing
- Bullying, coercion, intimidation, "strong-arming"
- Making money

Staff: "One individual… was stating that his dose was too low, and he was on a higher dose in the community… **he was saving it for later in the day when he was starting to feel a little achy.**"

Patient: "**You're waiting for that guy to come in on the unit that's on it. Put them on a chokehold, so you can get it.** And then, a guy will see a guy that comes in and… [he] doesn't make commissary, has no sneakers on his feet. Put a pair of sneakers on them, **give him some food for the night, and then now he owes you.**"

Patient: "**…there was people in my unit that were coming in sick**… so, me as a solid White guy would sometimes deviate my medication however way possible and **bring it back to a couple people that needed it.**"

Strategies to prevent MOUD diversion are essential

- Some clients felt that MOUD diversion was *"not frequent," "not common," "very rare," "impossible."*

- Others felt that *"There's always diversion. You're never going to get rid of it. It's always going to happen. It doesn't matter where you are, it's always going to be a problem."*

- Staff and patients identified many strategies to reduce MOUD diversion.

Recommendation: Use effective buprenorphine dosing protocols

15 Key Buprenorphine Dosing Recommendations for Jail-Based Treatment Programs

Corrections staff cite diversion of medication for opioid use disorder (MOUD) (e.g., buprenorphine) as a reason for not offering treatment with these medications in jails and prisons. In a 2023 study, researchers from the University of Massachusetts outline key steps MOUD program staff can implement to prevent diversion. The study also provides guidance to corrections and lawmakers as they consider establishing and expanding MOUD treatment in correctional settings.

Dispensing Preparation

The staff should ensure:

- Patients are seen in small groups of 10-15 at a time in the dosing room.
- A correctional officer informs patients of the rules, which are also posted in the room.
- Patients remove their shirts and dentures and then sit down in a single line on their hands. Shirt pockets and dentures have shown to pose potential diversion risks.
- An officer checks each patient's ID and verifies their identity with the nurse.

Dispensing Process

While dispensing buprenorphine the nurse:

- Checks the electronic medical record for each patient's dosage amount, dispenses the correct number of tablets into a cup, and prepares each dose by crushing it into a powder and returning it to the cup.
- Walks to each patient and has them drink some water and then places their medication under the tongue.

Supervision Following Medication Initiation

Immediately after dispensing buprenorphine:

- The patient continues to sit still on their hands (or with their hands in their lap) for 15 minutes while the medication dissolves under their tongue and is absorbed, during which time the patient cannot talk or swallow.
- A correctional officer watches the patients for the entire time to detect indications of potential diversion such as spitting, talking, moving of their hands or face, fidgeting/restlessness/squirming, or putting things in their mouth.

Ensuring Proper Consumption

With the aim of ensuring incarcerated individuals do not divert the buprenorphine:

- The nurse escorts each patient to a nearby bathroom or trash can.
- The patient spits into a sink or trash can and the nurse checks the saliva for an orange tinge. If there is nothing to spit out or there is no orange tinge then the patient has swallowed the medication (and it will be less effective) or may have tried to divert it.
- The patient rinses their mouth with water, chews and swallows a cracker, and rinses with water again.
- The nurse inspects the patient's hands and does a full mouth check with a flashlight (inspects upper and lower lips, under the tongue, back of tongue and throat).
- The officer does a second mouth check.
- Afterwards, the nurse cleans up the cups and sink and removes all trash that may have had contact with the medication. The trash is never touched by patients and it is immediately disposed of.

Suspected Incidents of Diversion

- Any actual or suspected incidents of diversion are reported and investigated.

Source: Evans, E. A., Pivovarova, E., Stopka, T. J., Santelices, C., Ferguson, W. J., & Friedmann, P. D. (2022). Uncommon and preventable: Perceptions of diversion of medication for opioid use disorder in jail. Journal of substance abuse treatment, 138, 108746. Add a little bit of body text

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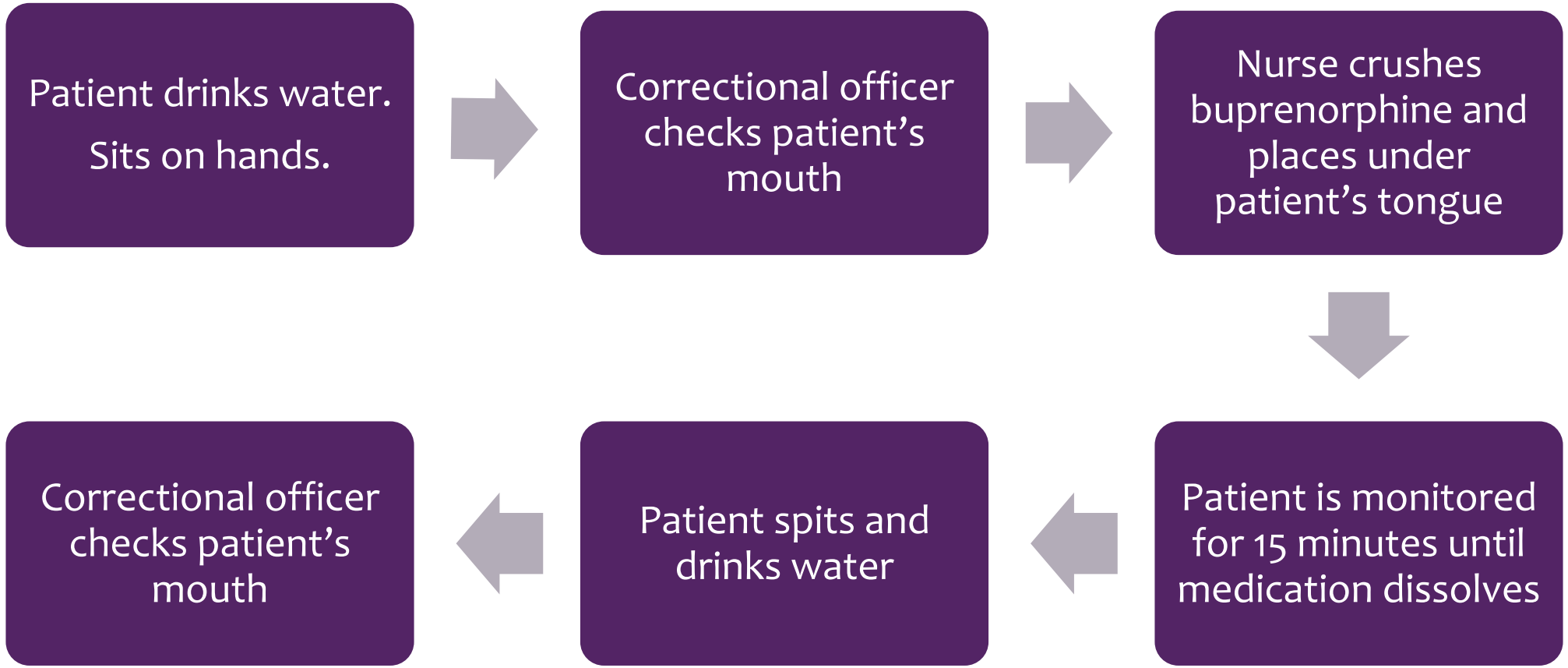
Source: Addiction Policy Forum

Overview of buprenorphine dosing protocols

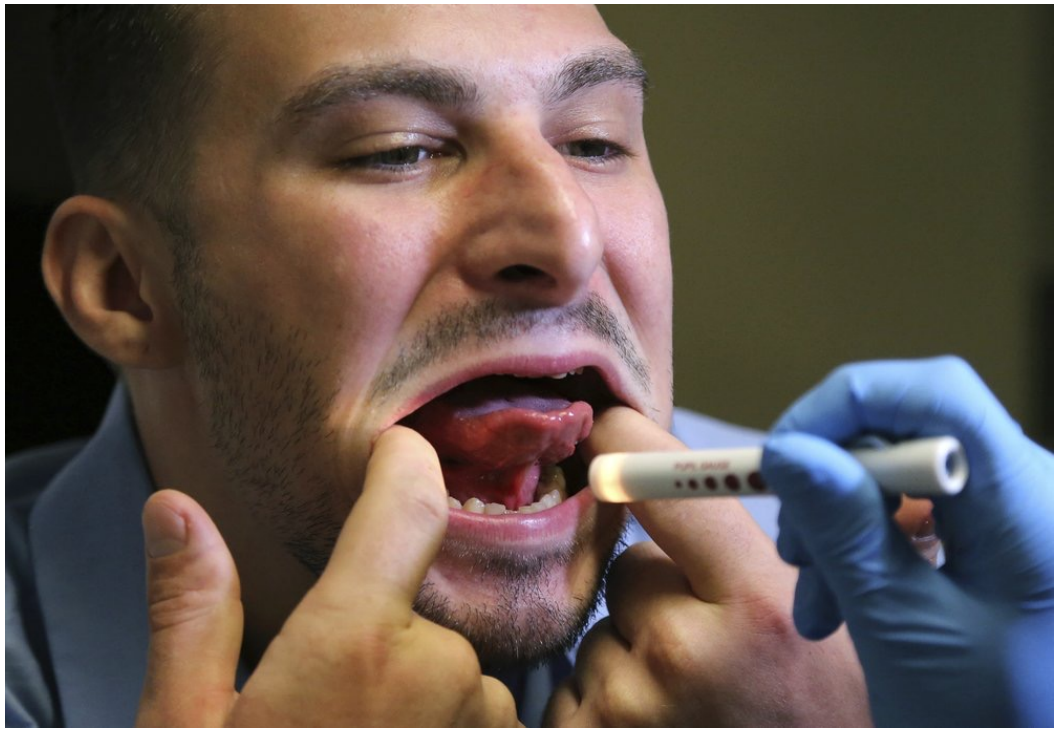
Patient enters MOUD med line



Patient exits

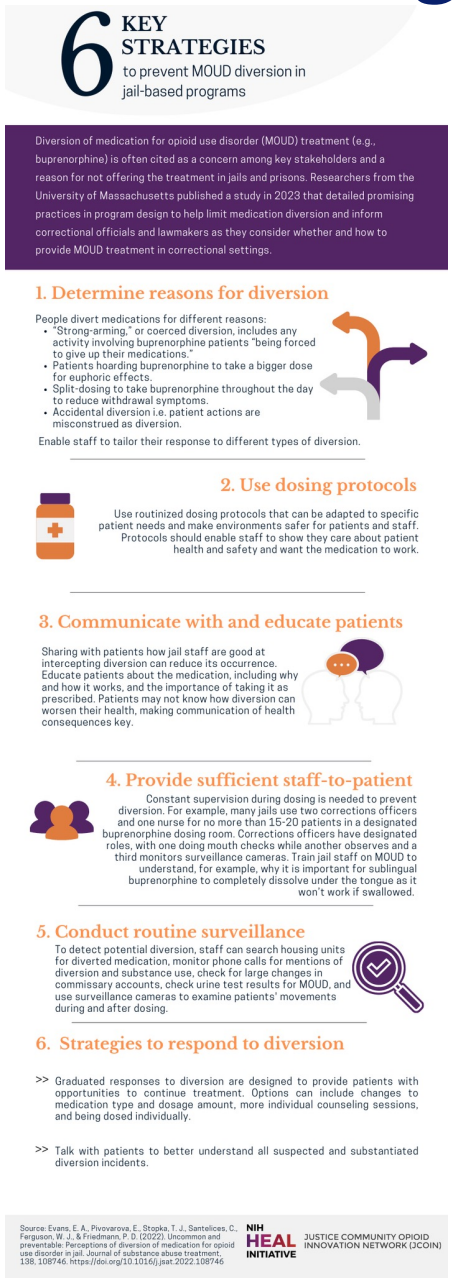
Evans et al. (2022). Uncommon and preventable: Perceptions of diversion of medication for opioid use disorder in jail. *Journal of Substance Abuse Treatment*. 138:108746.

Dispensing Process - Buprenorphine



Franklin County Sheriff's Office in Greenfield, MA; Photo credit Elise Amendola, Associated Press 2018

Other recommendations for reducing MOUD diversion



Source: Addiction Policy Forum

Other recommendations for reducing MOUD diversion

- Training and education
  - Educate **patients** about why it should be taken as prescribed. Use treatment contracts with patients.
  - Train and educate **staff** about MOUD, reasons for diversion, and diversion prevention protocols.
- Provide sufficient staff-to-patient ratio
- Address the different reasons for diversion
- Focus on creating therapeutic treatment environments

Recommendation: Plan for consequences of MOUD diversion

Graduated consequences

- Warnings
- Increased surveillance during dosing
- Dose reduction
- Segregation/isolation/the 'hole' (patient still receives medication)
- Switch to methadone or injectable buprenorphine

Patient: "They give you 1 chance, and you go to the hole and come back, but **you'll still be on your medication**. But they would **drop it** in half... And then if you got caught again, they would shut you off and give you the **Sublocade** shot. Unless the person didn't want it, and then they would just **wean them down**, and just cut them off."

Staff: "…we as a security department wouldn't stop anybody's meds. The best we can do is gather that intel and present it to the clinical team to make a decision on whether or not to stop the medicine."

Recommendation: Dispense MOUD soon after jail entry & offer MOUD to all who need it

Rationale for MOUD induction

"...if they let everybody who wanted to be on it on it, **then there would never be a problem** with people cheeking it and selling it... the only reason people cheek their meds is to sell it to people who want it. But there wouldn't be people wanting it if everybody was allowed to get it." –Patient quote

Perceived benefits of preventing MOUD diversion

- Reduces risky behaviors in jail (drug smuggling)
- Reduces conflict among jail residents and staff
- Improves well-being while incarcerated
- MOUD program saves lives (esp. for those being released)

Another benefit: MOUD disrupts the contraband market

Staff interviews

- *"…our only experience with that medication is that it's getting smuggled in… [and] sold…so…for people that have dealt with it [as contraband]…* ***it's hard…to change that mentality****."*
- ***"If there's access to medication, why would somebody go to the lengths or pay those prices****…it was like, 'it's actually…a smart idea,' 'cause if you cut down on the illicits you can cut down on the violence, you can cut down on all sorts of negative behavior, and I thought it was…'two birds with one stone.'"*

Patient interviews

- Contraband price changes
- *"I know for certain that* ***there's a few people who…went from…sneaking it in, to no longer doing it*** *because they could receive it on their own…right in custody…."*
- *"It's not even worth it trying to bring suboxone into the jail, because they get them prescribed."*

Limitations

- Single time period
- Sample from one US state
- Patients
  - Most on MOUD post-incarceration
  - Few directly involved with diversion
  - Self-report of undesirable activities
- Staff
  - Early stage of program implementation

Strengths

- Few studies on MOUD diversion inside jails
- Patient and staff voices
- Hard-to-reach population
- Novel data in the US
- High impact topic
- Findings can help to inform, optimize, and disseminate promising practices

Summary: MOUD diversion in jails

- Less often than expected
- Prevention protocols help
- MOUD benefits patients and staff
- Suggestion: Reduce treatment gaps

Take aways

- Offering MOUD in jails is a paradigm shift
- Jail-based MOUD programs are associated with reduced recidivism
- MOUD diversion can be reduced by how the MOUD program is designed and operated

More information

MassJCOIN publications library

‘Bonus’ papers

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Thank you!