

The relationship between incarceration and retention in opioid maintenance treatment

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Disclosure

I have no actual or potential conflict of interest in relation to this program/presentation.

Background – Cycle of incarceration:

Buprenorphine



Incarceration



Community

Background – Buprenorphine:

- Opioid derivative with mixed effects at opioid receptors
- Can be used to treat withdrawal, for titrated cessation, or for long-term maintenance (BMT).
- Advantages over methadone:
 - Can be self-administered at home
 - Low potential for abuse
 - Less stigmatized



Study Questions:

1. Do people reporting recent incarceration (vs. not) at baseline have lower retention rates in BMT?
2. Do people retained in BMT have lower rates of subsequent incarceration?

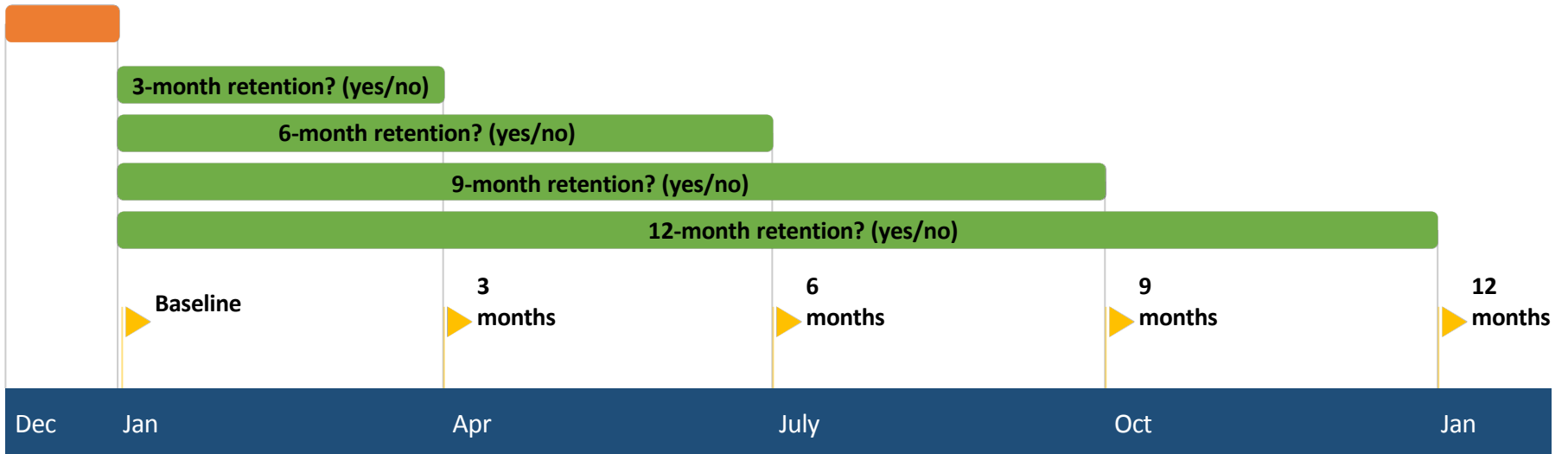
Methods:

- Design: Secondary analysis of longitudinal cohort study
- Setting: Buprenorphine, HIV Evaluation and Support Collaborative (BHIVES)
 - 10 community or hospital-based care centers
 - Office-based BMT care (monthly visits)
- Population: HIV+ primary care patients
 - Initiating BMT for opioid use disorder

Question 1 -- Variables:

Predictor, collected from baseline interview

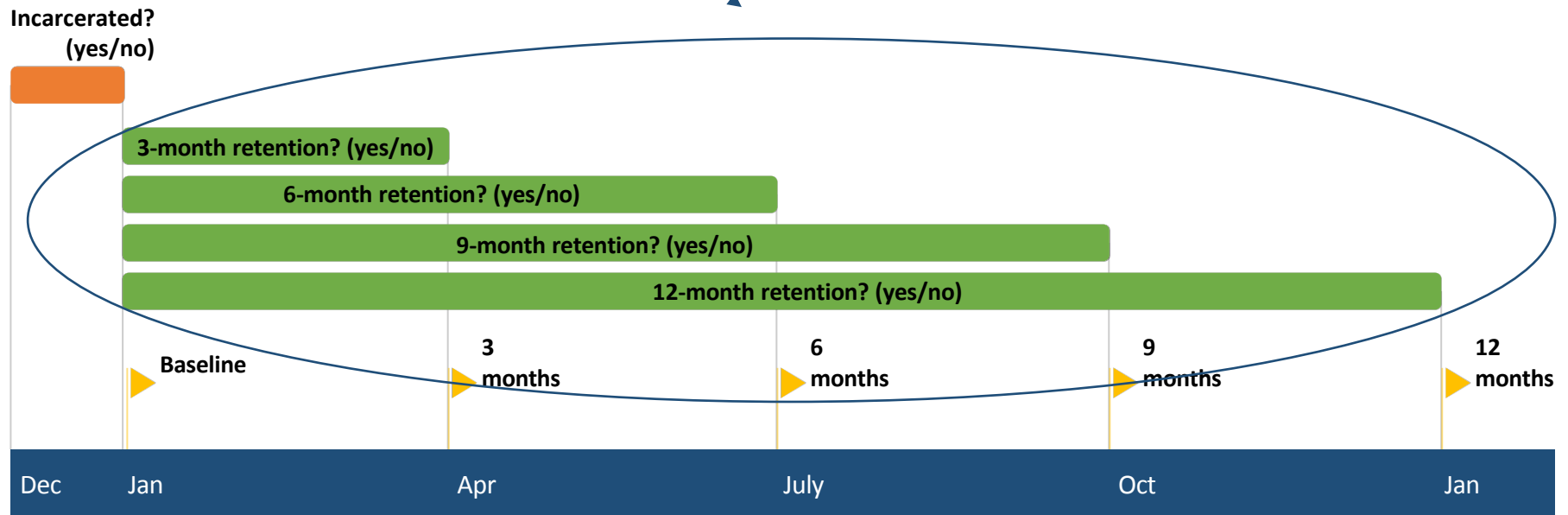
Incarcerated?
(yes/no)



(Do people reporting recent incarceration at baseline have lower retention rates in BMT?)

Question 1 -- Variables:

Outcomes, collected from chart review, evaluated using χ^2 -tests and a multivariable, logistic regression model (for the 12-month outcome)



(Do people reporting recent incarceration at baseline have lower retention rates in BMT?)

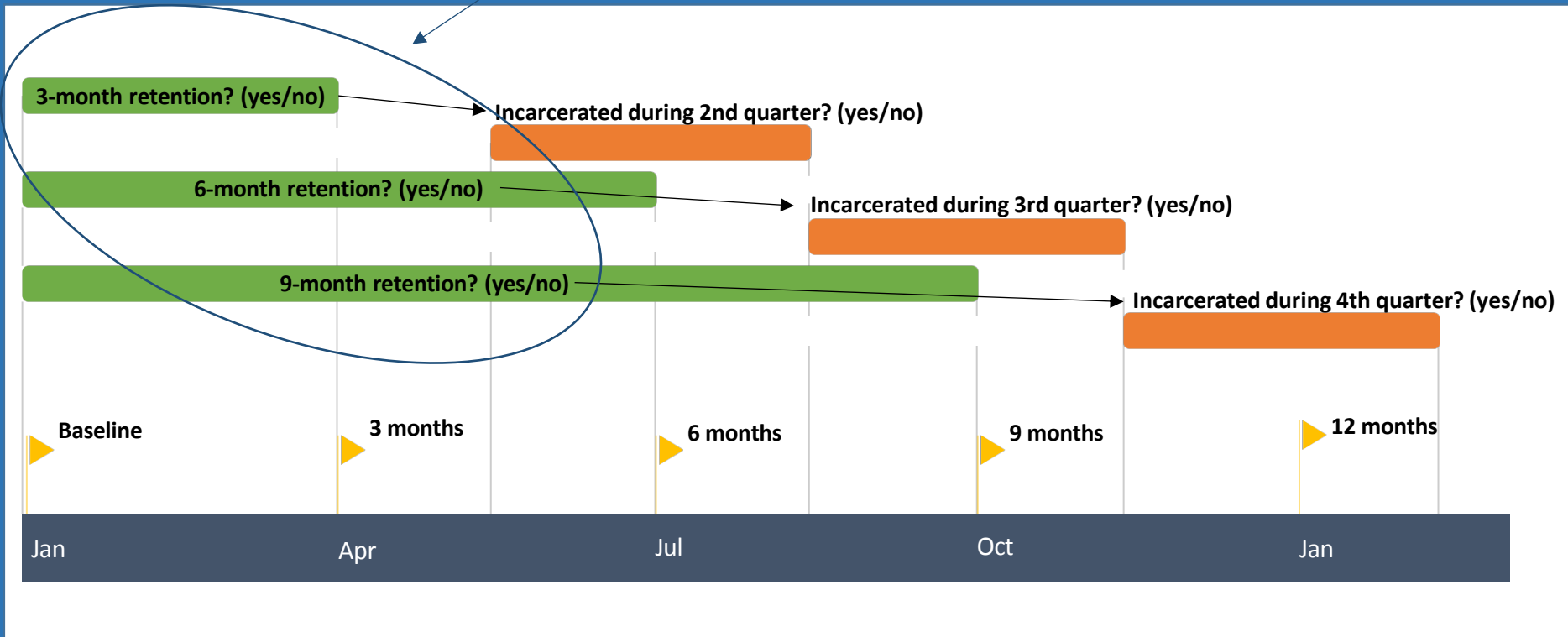
Question 1 – Logistic Regression Model:

- Outcome – 12-month retention in BMT
- Main independent variable – self-reported incarceration in 30 days before baseline
- Covariates:
 - Demographics – age, race, gender
 - Patient reported ever having used injection drugs

(Do people reporting recent incarceration at baseline have lower retention rates in BMT?)

Question 2 -- Variables:

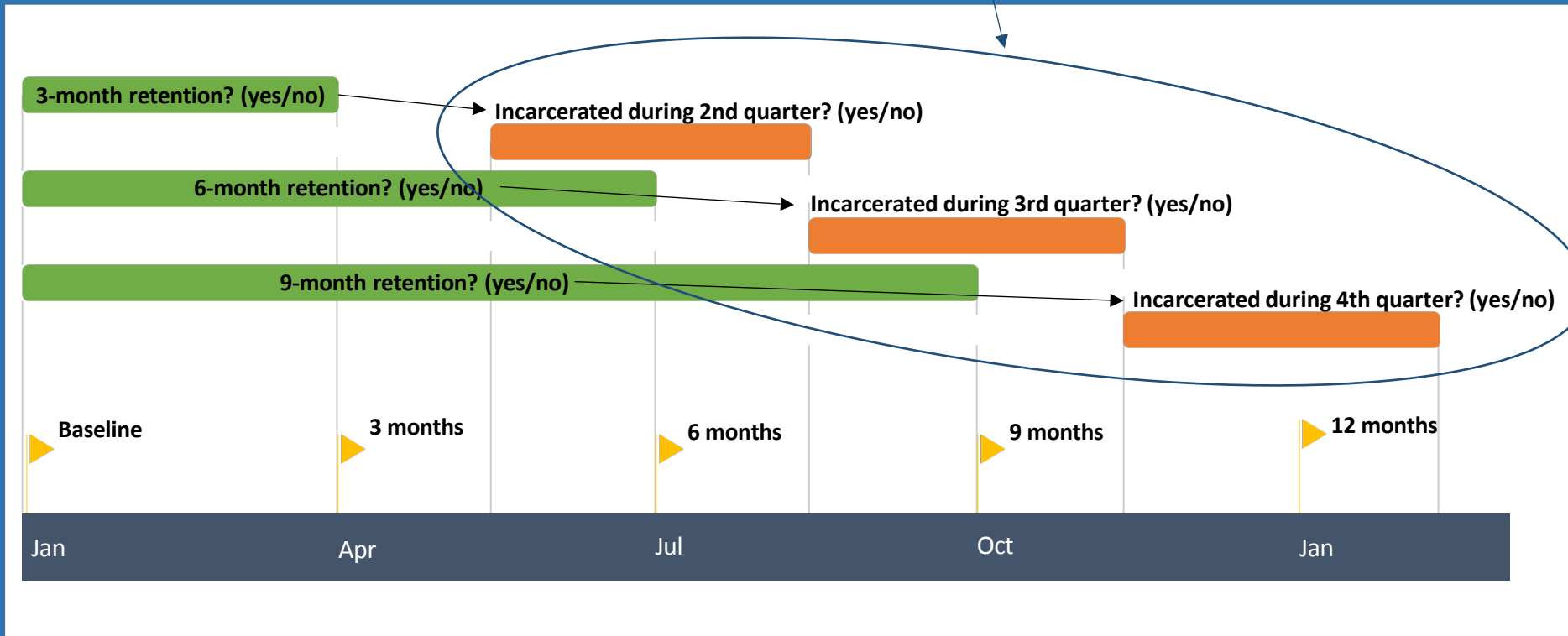
Predictors, collected from chart review



(Do people retained in BMT have lower rates of subsequent incarceration?)

Question 2 -- Variables:

Outcomes, collected from quarterly interviews and quarterly chart review, evaluated using χ^2 -tests



(Do people retained in BMT have lower rates of subsequent incarceration?)

Question 2 – Hierarchical Linear Model:

- Outcome – incarceration during each quarter
- Main independent variable – retention in BMT during same quarter
- Covariates:
 - Demographics – age, race, gender
 - Any incarceration before baseline
 - Drug use -- opioid use, cocaine use, addiction severity index score at baseline, problematic alcohol use
 - Other social factors – English as primary language, living alone at baseline

(Do people retained in BMT have lower rates of subsequent incarceration?)

Results – Baseline Population Characteristics:

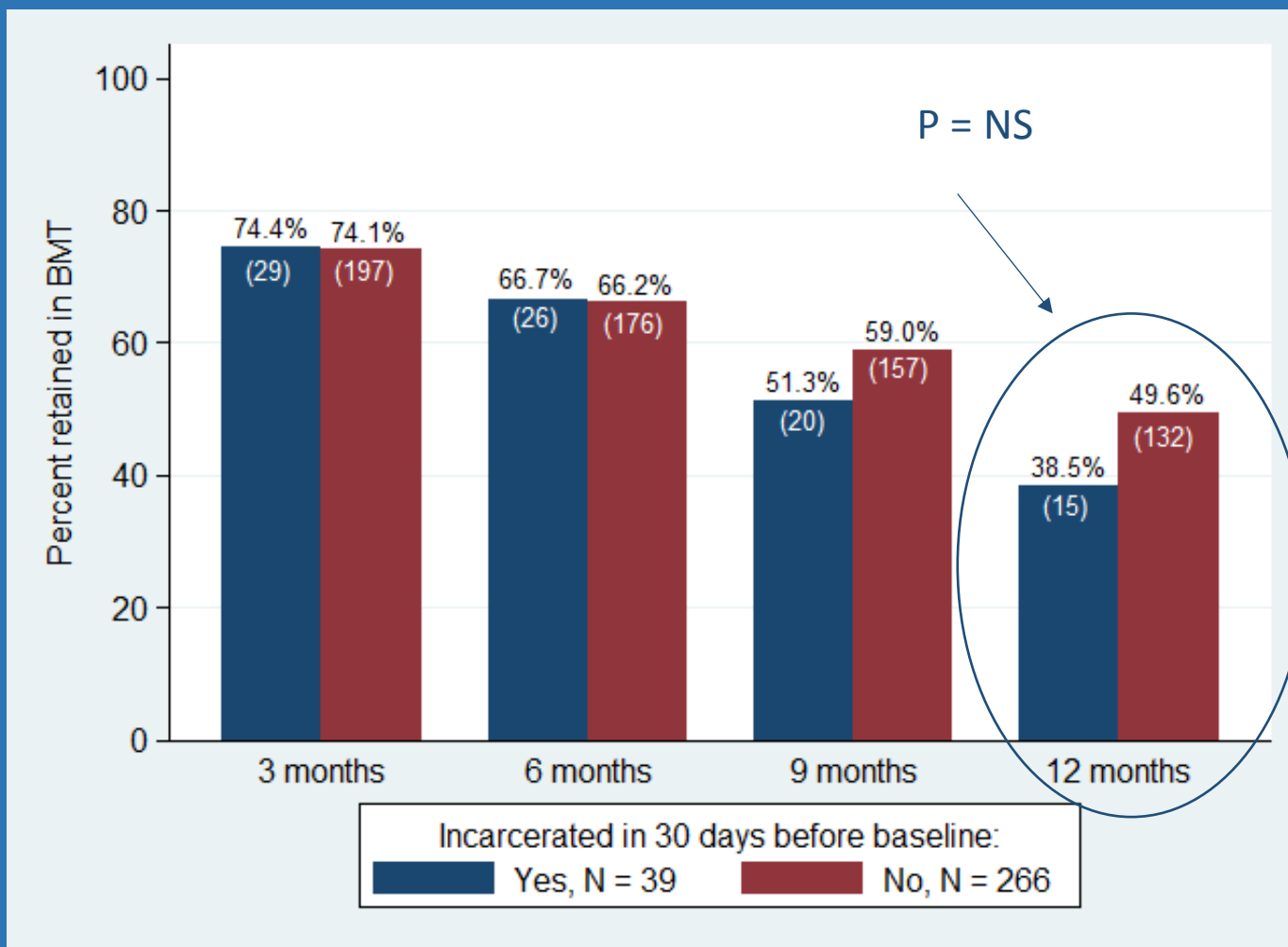
	All (N = 306)
Age, mean years +/- SD	44.6 +/- 8.5
Race/Ethnicity, n (%):	
Non-Hispanic Black	156 (51.0%)
Non-Hispanic White	69 (22.6%)
Hispanic	67 (21.9%)
Non-Hispanic Other	10 (3.3%)
Male, n (%)	206 (67.3%)

Results – Baseline Population Characteristics:

	All (N = 306)	Not recently incarcerated at baseline (N = 266)	Recently incarcerated at baseline (N = 39)	P-value
Homeless (yes/no), n (%)	76 (24.8%)	60 (22.6%)	16 (41.0%)	0.01
Unemployed (yes, no), n (%)	228 (74.5%)	192 (72.2%)	35 (89.7%)	0.02
Previously diagnosed with mental illness (yes/no), n (%)	168 (54.9%)	140 (53.2%)	27 (73.0%)	0.02

Results for Question 1 -- Do people reporting recent incarceration at baseline have lower retention rates in BMT?

Rates of retention in BMT stratified by baseline recent incarceration:



Results for Question 1 -- Do people reporting recent incarceration at baseline have lower retention rates in BMT?

Logistic model of 12-month treatment retention:

	Odds ratio	95% CI
Recent incarceration (yes/no)	0.57	0.27-1.18
Age	1.04	1.01-1.07
Male (yes/no)	0.56	0.34-0.94

Results for Question 2 -- Do people retained in BMT have lower rates of subsequent incarceration?

Rates of incarceration stratified by retention in BMT at previous visit:

	Patient was retained in BMT at previous visit	Patient was not retained in BMT at previous visit	χ^2 P-values
6 month visit	19 (8.4%)	22 (27.9%)	< 0.01
9 month visit	10 (4.9%)	21 (20.4%)	< 0.01
12 month visit	11 (6.2%)	32 (24.8%)	< 0.01

Results for Question 2 -- Do people retained in BMT have lower rates of subsequent incarceration?

Hierarchical linear model of incarceration during BMT:

	Odds ratio	95% CI
Retention in BMT (yes/no)	0.31	0.16 – 0.57
Previous injection drug use before baseline (yes/no)	0.36	0.16 – 0.79
Male (yes/no)	2.11	1.01 – 4.42
Recent cocaine use at baseline (yes/no)	2.55	1.07 – 6.05

Conclusions:

- Recent incarceration at baseline is associated with homelessness, unemployment, mental illness
- Over time, those with recent incarceration seem to have lower retention in BMT but there is not a statistically significant difference
- Those retained in BMT have lower rates of subsequent incarceration

Implications:

- Our findings suggest that patients who seek treatment for opioid use disorder can achieve good outcomes with BMT in spite of stressors from recent incarceration.
- BMT may help decrease incarceration rates for individuals with opioid use disorder

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- Aaron Fox for providing mentorship and allowing me to shadow at the Transitions Clinic
- Ellie Schoenbaum for coordinating student research at Einstein

If we have time...

	Self-reported opioid use	
	Odds ratio	95% CI
Recent incarceration	0.93	0.47-1.81
Age	0.98	0.95-1.01
White	0.82	0.48-1.41
Male	1.01	0.64-1.58
Inject drugs	1.23	0.71-2.15
Addiction severity index	1.02	1.00-1.04
Homelessness	0.57	0.34-0.96

What is the profile of people with each criminal justice status?

Those who have recently been incarcerated are more likely to:

- Live alone
- Be homeless
- Be unemployed
- Have a diagnosed mental illness
- Have a lower composite score for addiction severity
- Have ever injected drugs
- Have ever used heroin
- Been treated for drug abuse more frequently

Results – Population Characteristics:

	All (N = 306)	Not recently incarcerated (N = 266)	Recently incarcerated (N = 39)	P-value
Age, mean years +/- SD	44.6 +/- 8.5	44.6 +/- 8.4	44.4 +/- 9.3	0.93
Race/Ethnicity, n (%):				
Non-Hispanic White	69 (22.6%)	61 (22.9%)	7 (18.0%)	0.49
Non-Hispanic Black	156 (51.0%)	133 (50.0%)	23 (57.5%)	0.38
Hispanic	67 (21.9%)	59 (22.2%)	8 (20.5%)	0.81
Non-Hispanic Other	10 (3.3%)	9 (3.4%)	1 (2.5%)	1.00
Male, n (%)	206 (67.3%)	179 (67.3%)	26 (66.7%)	0.94

Results – Population Characteristics:

	All (N = 306)	Not recently incarcerated at baseline (N = 266)	Recently incarcerated at baseline (N = 39)	P-value
Times prev treated for drug abuse, median (IQR)	3 (2-6)	3 (2-6)	5 (3-7)	0.03
Homelessness, n (%)	76 (24.8%)	60 (22.6%)	16 (41.0%)	0.01
Employed, n (%)	78 (25.5%)	74 (27.8%)	4 (10.3%)	0.02
Diagnosed with mental illness, n (%)	168 (54.9%)	140 (53.2%)	27 (73.0%)	0.02

Objective 1 -- Do people reporting recent incarceration at baseline have lower retention rates in BMT?

Logistic model of 12-month treatment retention:

	Odds ratio	95% CI
Recent incarceration	0.57	0.27-1.18
Age	1.04	1.01-1.07
White	0.57	0.31-1.04
Male	0.56	0.34-0.94
Inject drugs	0.80	0.43-1.48

Main independent variable

