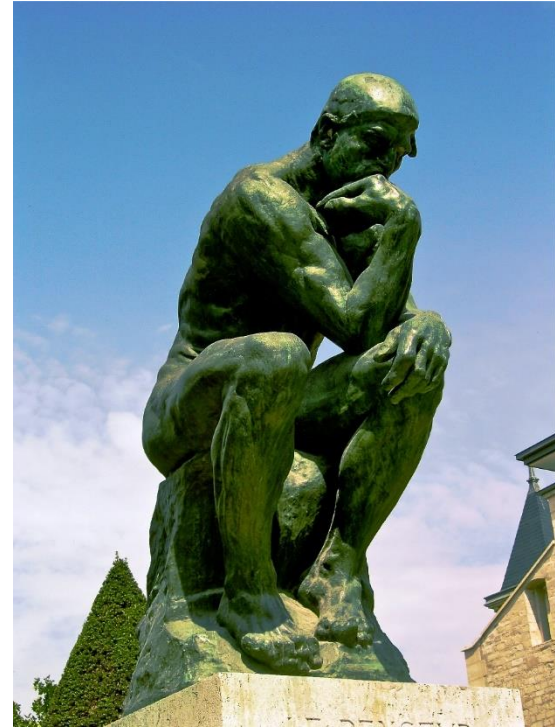

Engaging Individuals with an Opioid Use Disorder (OUD): The Impact of Medication- Assisted Treatment

David Loveland, PhD

Questions to Consider 1

- Male triplets enter D&A treatment on the same day, have had an SUD for the same 20 years, & started using on the same day. One has an AUD, one has a CUD, & one has an OUD
- *Who is likely to finish tx at your facility & achieve sustainable recovery?*



Questions to Consider 2

- A person is recovering from an overdose in an ED and has two options for addiction tx: 1. initiate buprenorphine in the ED & transfer to a MAT clinic upon discharge or 2. Initiate & complete detox in the hospital & transfer to an abstinence-based tx program upon discharge
- *Which version would have better engagement & retention?*



Questions to Consider 3

- Two individuals are identical in demographics & duration of their SUD. Both are about to complete a treatment episode that included the same duration of detox & short-term residential care: the only difference is that one has an AUD and the other has an OUD
- *Will these two individuals have the same outcomes after discharge or will they be different due to their SUD?*



Questions to Consider 4

- Everyone in the room has an opioid in their body that was produced by an internal organ; further, the brain & spinal cord has a specific receptor for this opioid
- *What is this opioid called, what is the receptor called, and can you identify experiences when you felt this opioid working in your body?*



Answers to Question 4

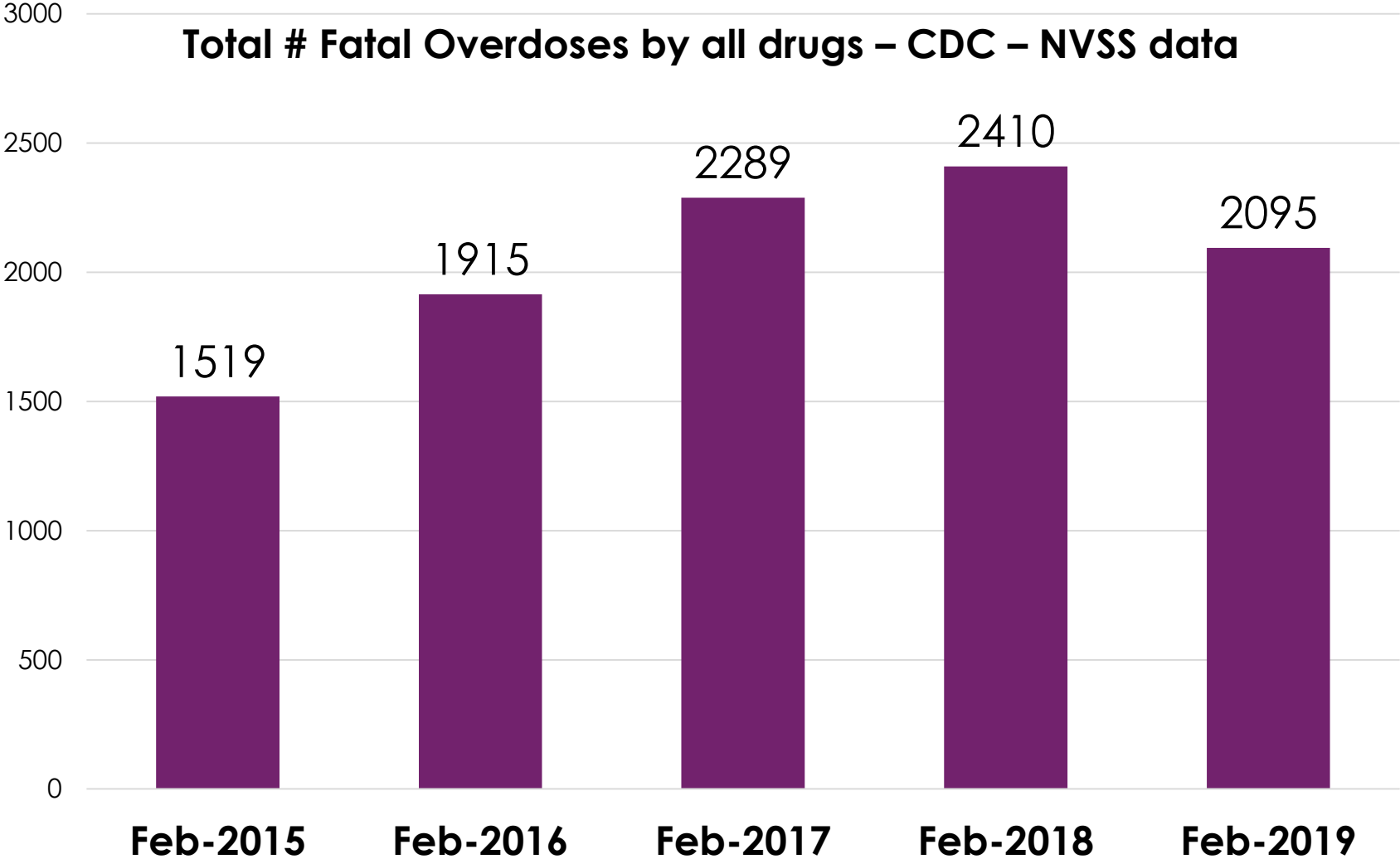
- Humans produce several endogenous (within the body) opioids, with the most common one known as beta-endorphin or simply “endorphins”
 - Beta-endorphins look & function like an exogenous (introduced from outside the body) opioids, such as morphine, heroin, or oxycodone
 - Beta endorphins bind with a receptor in the brain & spinal column known as the mu (μ) receptor, creating a sensation of analgesia (pain blocking) & releasing dopamine (pleasure & euphoria)



Opioid Use Disorder (OUD)

- OUD evolves over time, though faster than other SUDs, due to repeated exposure to exogenous opioids, such as prescription opioids or illicit heroin
 - As individuals take more opioids, their body's production of beta-endorphins decreases, creating an increased sensitivity to pain, both physical & emotional, when they stop using exogenous opioids
 - Tolerance to opioids increases about every 4 to 8 weeks while the habit of OUD develops over time as the person begins to use opioids to treat physical and emotional pain

Fatal Overdose Rates in NY 2015 to 2019



Recovery Rates by Type of SUD

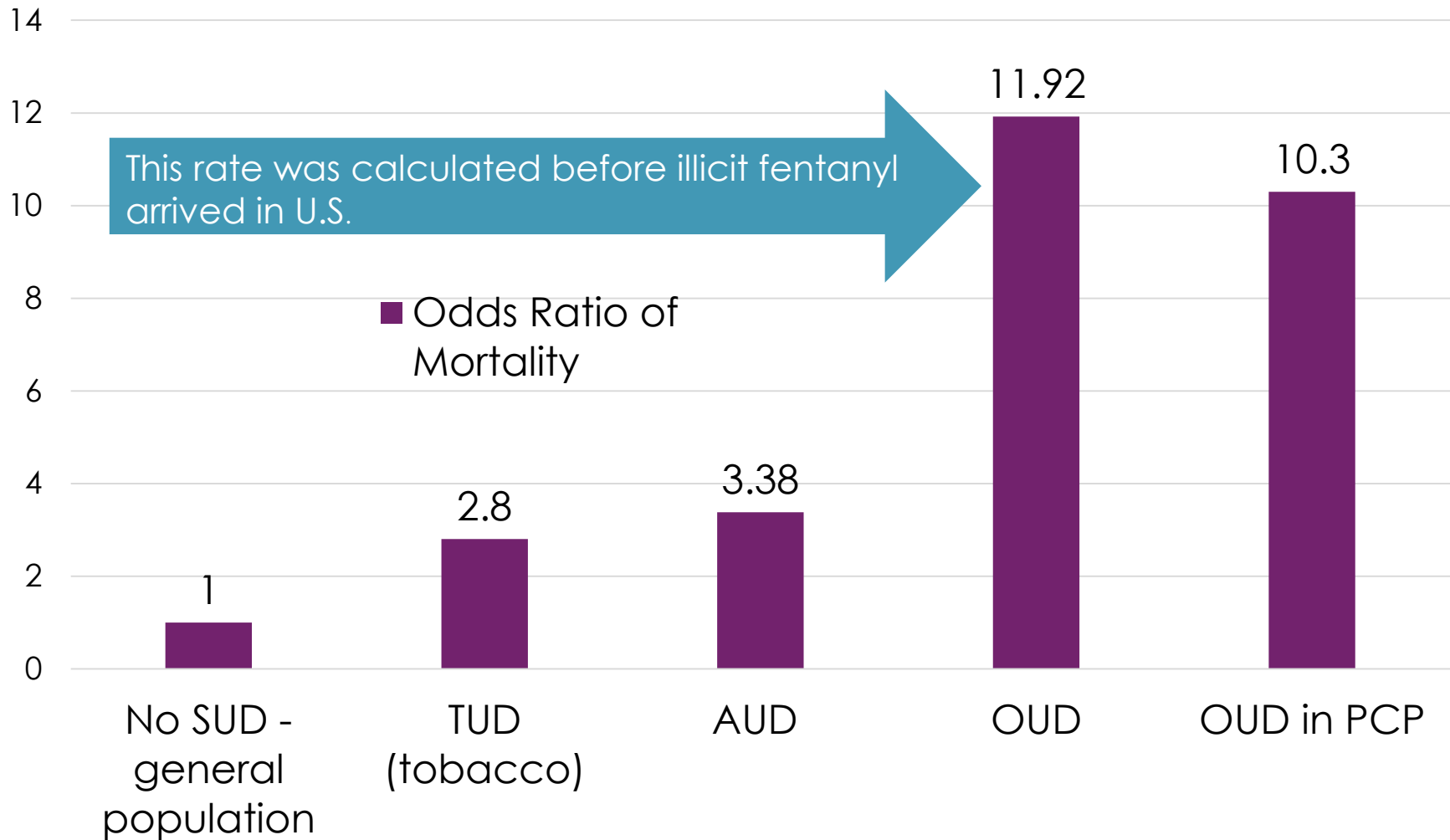
- Individuals with an OUD have a higher rate of mortality and a lower rate of recovery compared to individuals with other SUDs
 - Recovery rates for individuals with a alcohol use disorder (AUD) or cocaine use disorder (CUD) who require treatment are approximately **46% to 50%** in the U.S. (White, 2012)
 - Recovery rates for individuals with an OUD who require treatment are approximately **30%** (Hser et al., 2015)

Outcomes for Individuals with OUD

- Hser and colleagues (2015) reviewed 28 longitudinal studies on individuals with an OUD who were mostly selected from treatment
 - 9 studies from the U.S. and
 - 9 from Europe (mostly U.K.),
 - 2 from Australia, & 2 from Asia
 - U.S. studies included cohorts from 1952 to 2013
 - All studies, except one, were completed before 2010
 - The overall mortality rate was 6 to 20 times higher than the general population
 - 25% to 50% were deceased at 20 years past the baseline, with the U.S. rate closer to 25%



U.S. Mortality Odds Ratio by SUD type



Factors Undermining Tx for OUD

- Individuals with an OUD diagnosis experience rapid returns to using opioids after tx
 - Nearly all individuals will use alcohol or other drugs after tx; however, those with an OUD experience a greater risk of overdose (OD) when they do return to using due to the lethality of illicit opioids, alone or mixed with other powerful medications, such as benzodiazepines
 - OD rates increase after tx because tolerance levels for opioids drops rapidly within 3 to 5 days of abstaining; so a single detoxification episode can lead to a significant reduction in tolerance for opioids



OUD & Mortality Rates

- Clients with an OUD who leave treatment have a 2- to 6-fold increase in mortality immediately after treatment compared to individuals who remain in treatment
 - The mortality rate is similar for people leaving residential or MAT programs & for those who graduate or leave AMA
- Incarcerated individuals with an OUD have a 3- to 10-fold increase in mortality within the first 4 weeks of being released compared to the individuals in the community



Odds Ratio of Mortality - OUD



Factors Undermining Tx for OUD

- Individuals with an OUD diagnosis are less likely to complete any level of abstinence-based treatment, compared to all other SUDs
 - The following slides highlight the low treatment completion rate for individuals with an OUD, even though it is now the most common diagnosis for a person with a SUD seeking treatment in PA as well as in the U.S.
 - Individuals with an OUD are more likely to leave abstinence-based treatment against medical advice (AMA) or be removed from the program due to behaviors associated with their OUD

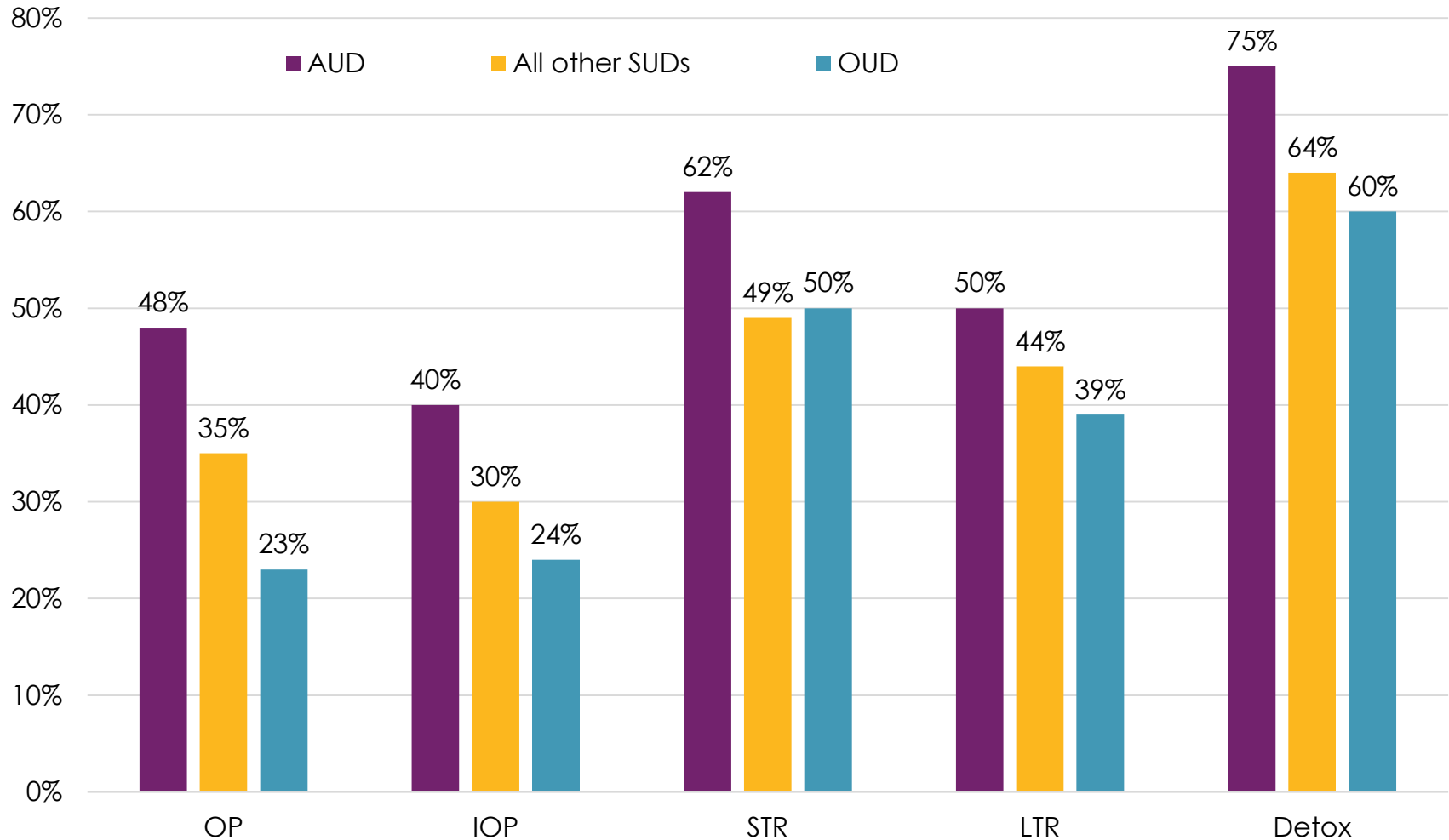


Tx Completion Rates – CY 2013 - 2017

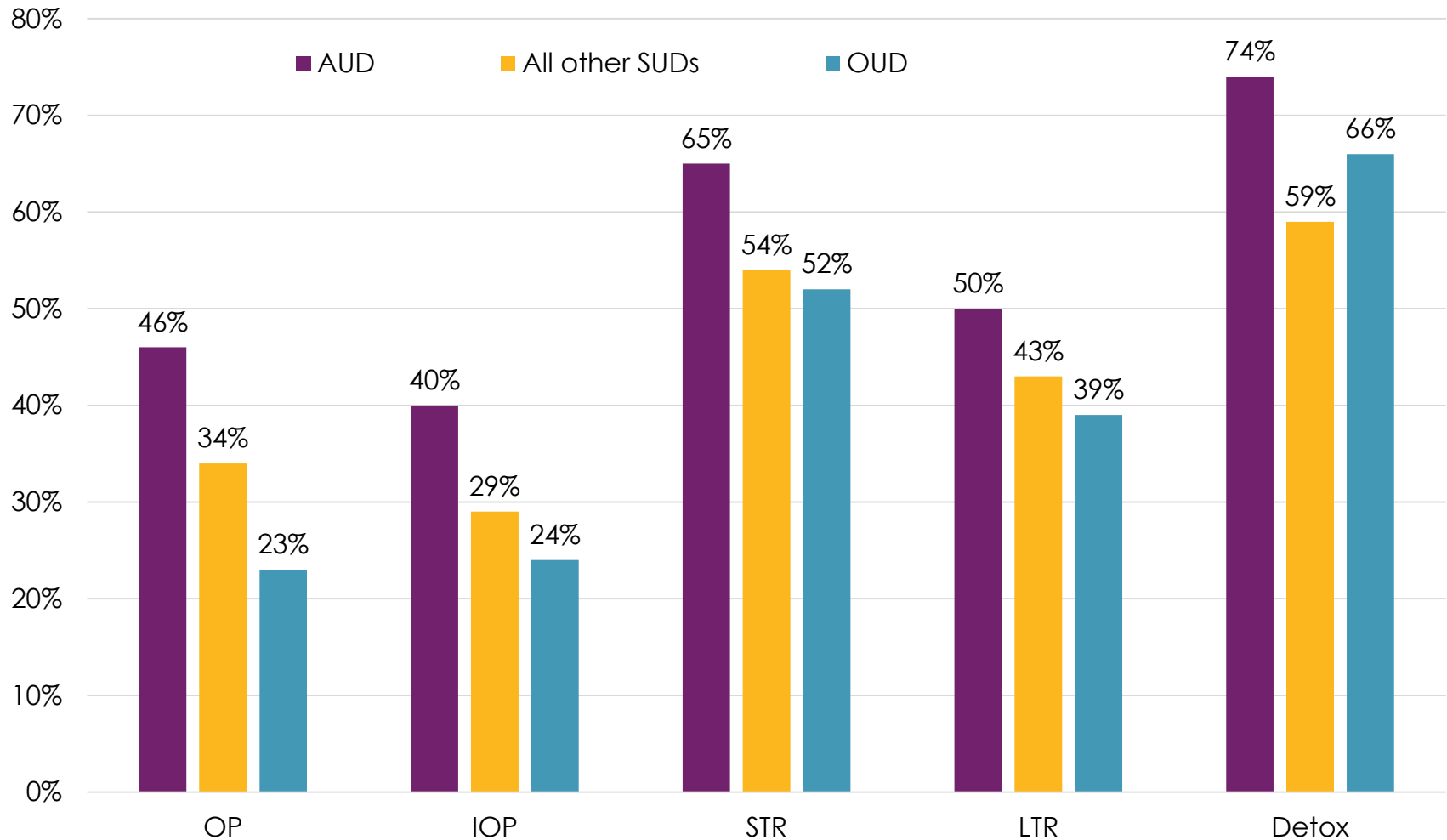
- SAMHSA's Treatment Episode Data Set (TEDS) provides an annual summary of tx admissions & discharges in the U.S.
 - Each year includes approximately 1.5 to 1.7 million individuals with approximately 85% above the age of 18
 - Individuals with an OUD (34%) or AUD (29%) accounted for approximately two thirds of all admissions
 - Individuals with an OUD were less likely to complete any level of care across all years (see the next five slides)
 - Data includes completion rates only – approximately 10% to 22% additional individuals transfer to another level of care



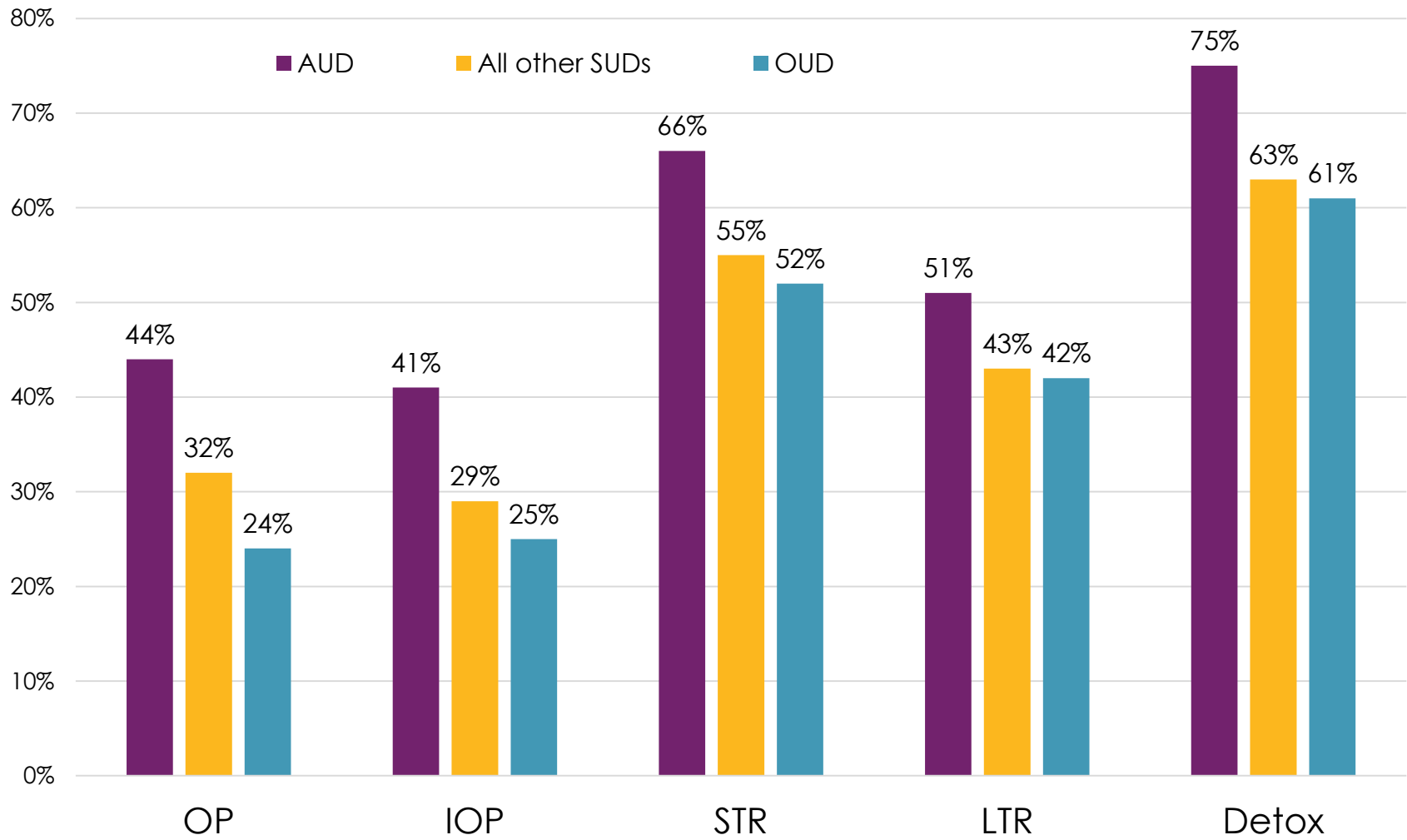
Tx Completion Rates – TEDS CY 2013



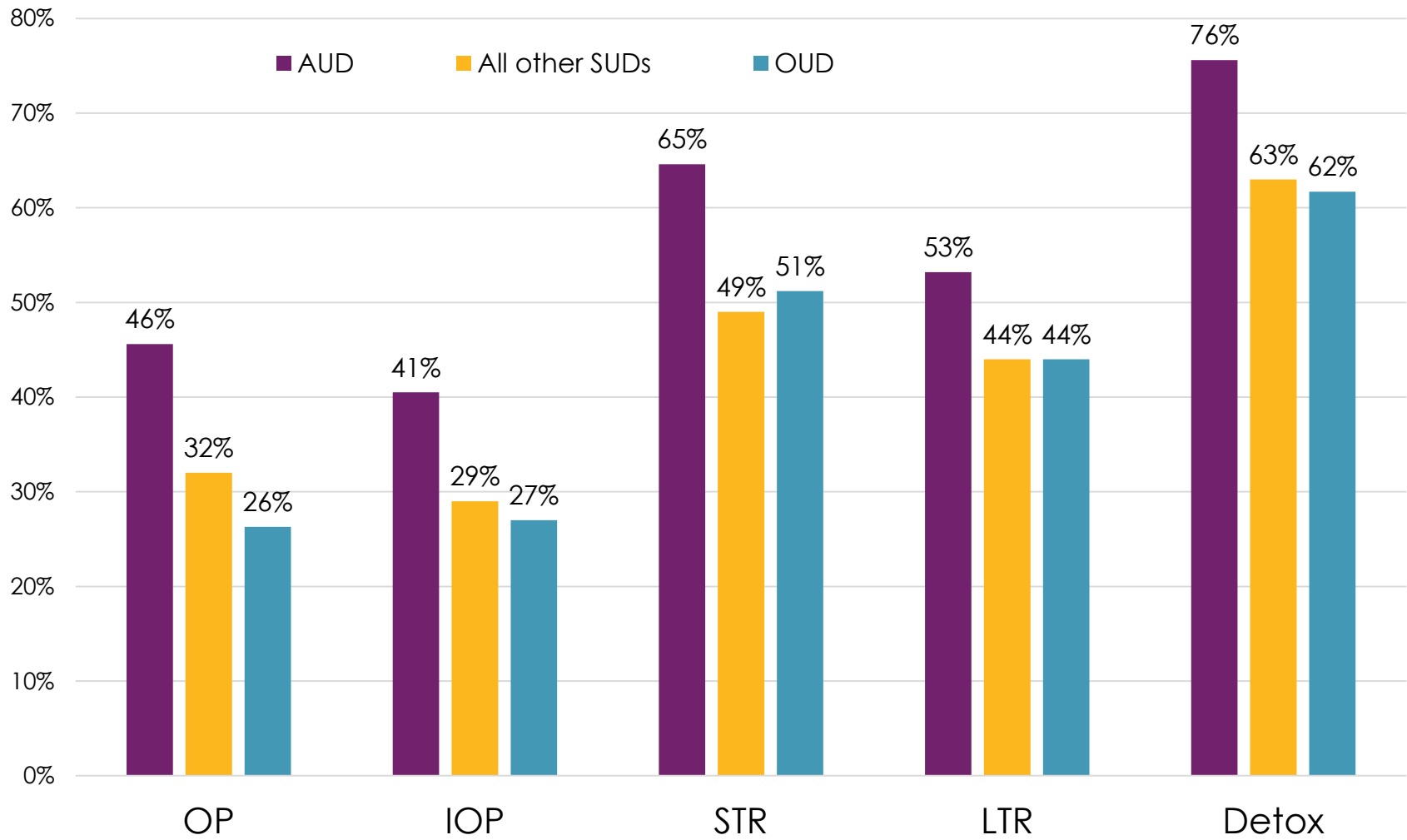
Tx Completion Rates – TEDS CY 2014



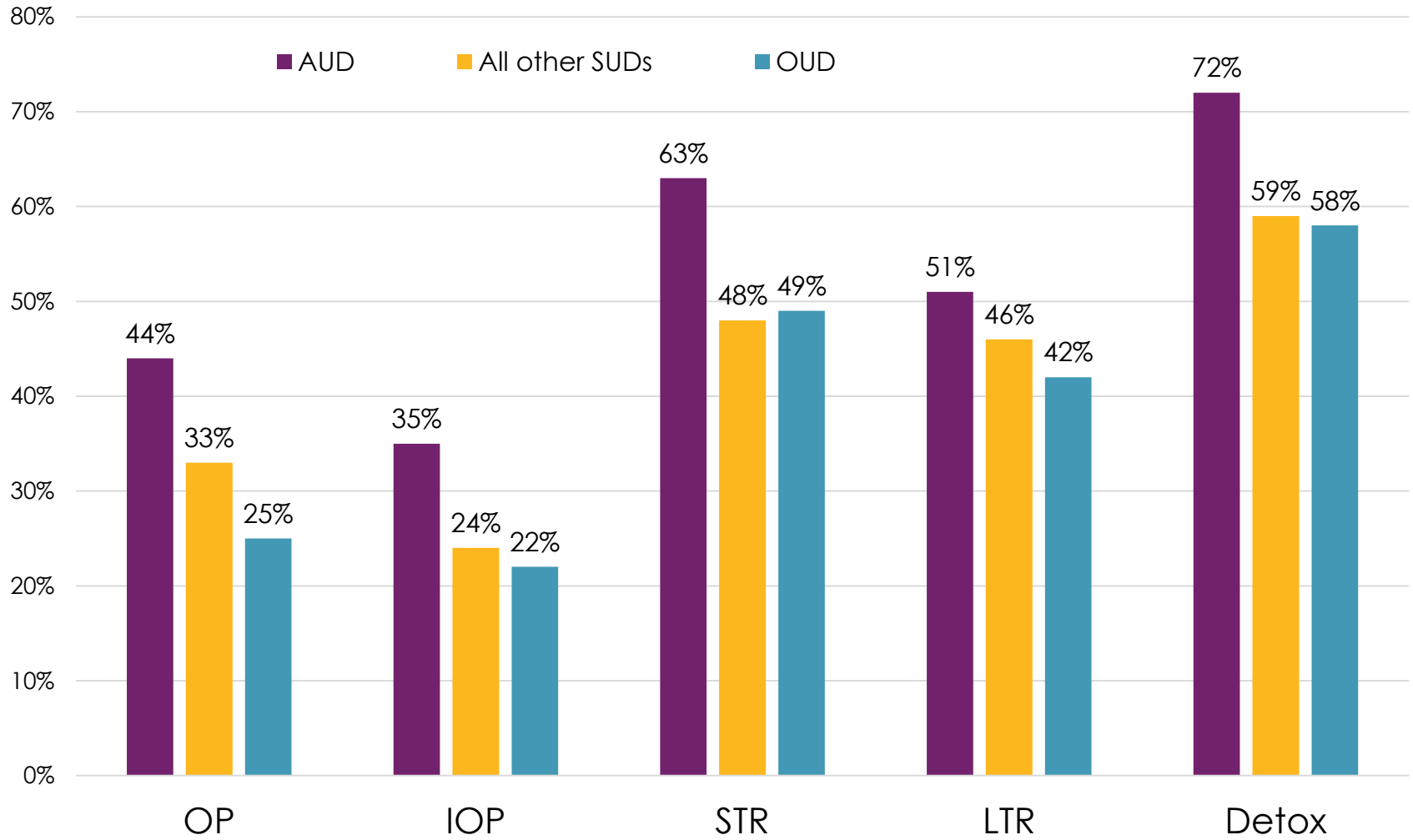
Tx Completion Rates – TEDS CY 2015



Tx Completion Rates – TEDS CY 2016



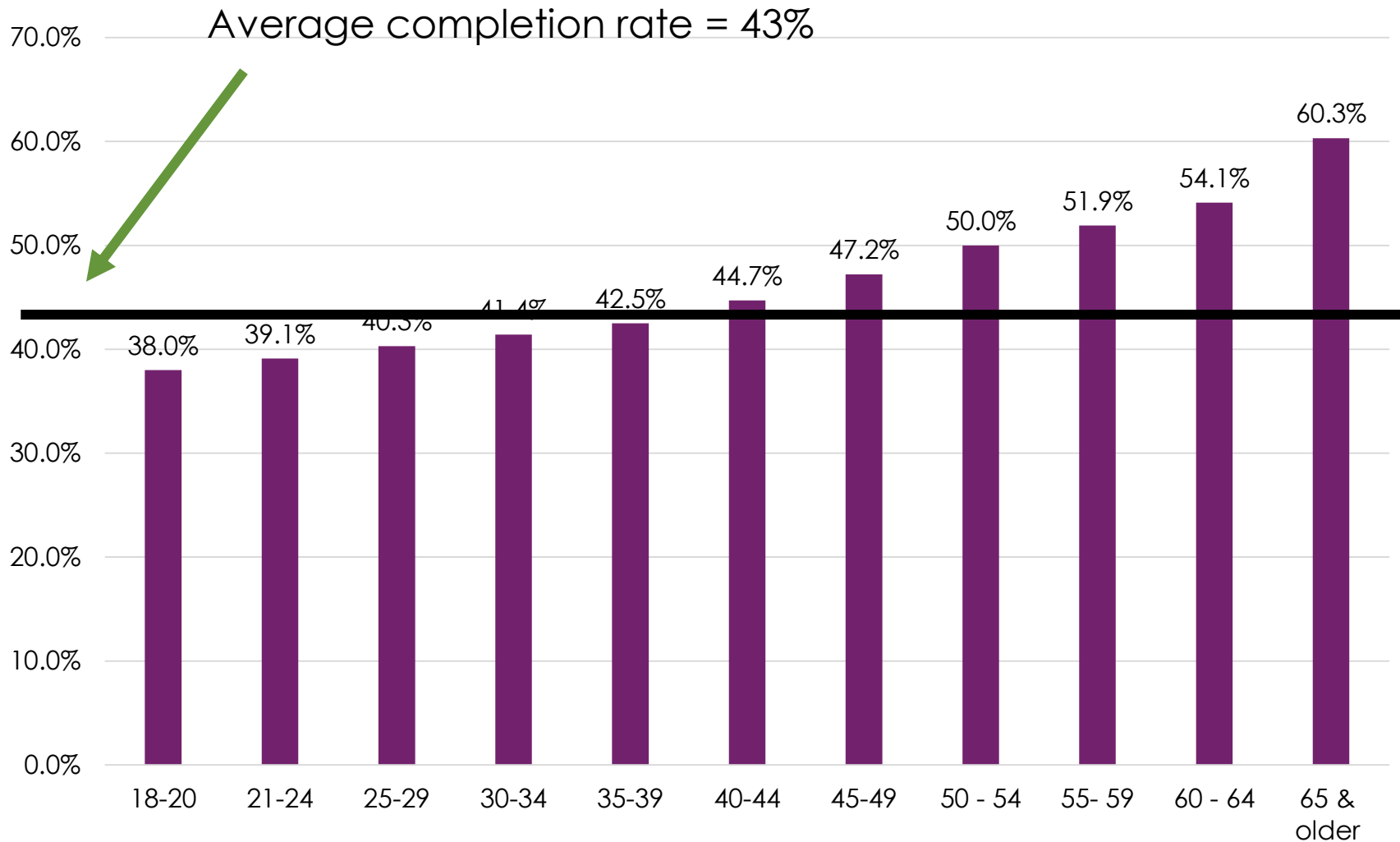
Tx Completion Rates – TEDS CY 2017



Tx Completion Rates by Age

- Younger individuals are less likely to complete treatment compared to those who are older and may need more harm reduction models to maintain engagement
 - Individuals with an OUD are likely to be younger than those with other SUDs when they enter treatment
- Data from SAMHSA TEDs dataset indicate a near perfect correlation between age and treatment completion rates across all SUDs in the U.S., in that completion rates increase incrementally with age or decrease incrementally with reduction in age

Age & Completing Addiction Tx



Changing Landscape of D&A Tx

- The addiction treatment system in NY as well as in the U.S. was designed initially for individuals with an AUD & adapted to individuals with other SUDs
 - Individuals with an AUD dominated all tx slots, both residential and outpatient, since the first 28-day rehab was introduced in the early 1960s
 - The most common SUD in descending order are 1. tobacco use disorder (TUD), 2. AUD, 3. cannabis use disorder, and a tie between 4.5 opioids (heroin & opioid medications) & 4.5 stimulants (e.g., cocaine & methamphetamine)

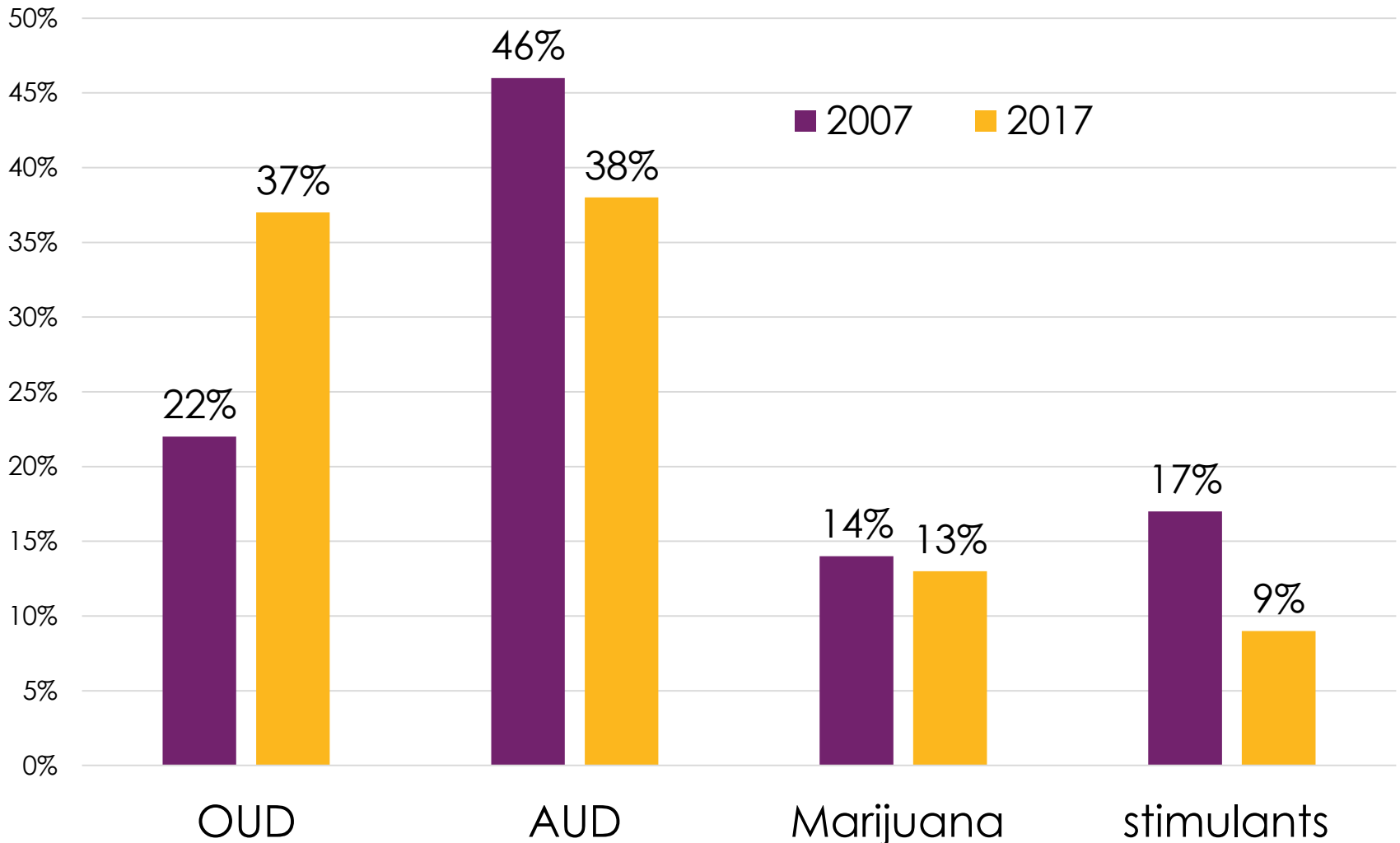


Changing Landscape of D&A Tx

- Individuals with an OUD are less common than those with an AUD or CUD & as common as those with a SUD for stimulants in the U.S., however, they are now the most common group entering any addiction treatment in the U.S. and account for nearly 37% of all tx slots in NY.
 - The present addiction treatment system has not evolved to treat this population and, instead, continues to use a treatment model built for those with an AUD



D&A Tx Admissions - NY 2007 & 2017

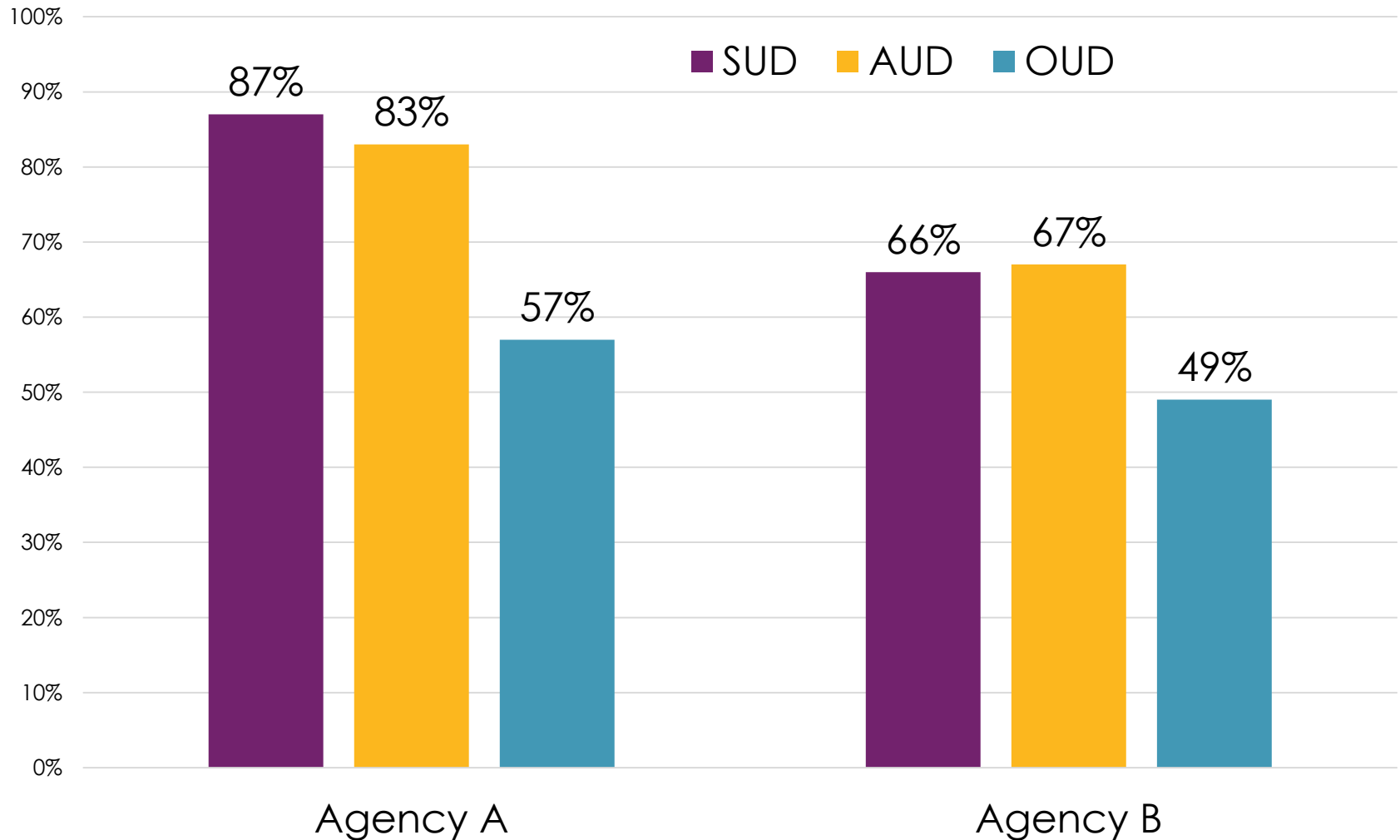


Short-Term Rehab Data in PA

- Individuals with an OUD entering short-term rehab (STR) programs in PA tend to disengage rapidly
 - Two STR programs provided Community Care with the discharge status of all adults with Medicaid treated in the programs – results are on the next slide
 - For both programs, individuals with an OUD accounted for 60% to 70% of all admissions (AUD was about 20% & all other SUDs accounted for 10%)
 - Program A includes nearly two years of data
 - Program B includes nearly one year of data



Tx Completion, STR by SUD Diagnosis



30-Day Follow-up from residential tx: CCBH Network

- Individuals with an OUD tend to have worse outcomes in residential or follow-up care compared to individuals with any other SUD
 - The following slide include data on discharges from residential programs in CCBH network between 1/1/18 and 3/31/19
 - On average, over the course of one or more years,
 - 60% to 88% of individuals with any SUD, except OUD, complete residential treatment (mostly in short term programs) & 58% will receive another level of care upon discharge within 30 days
 - 40% to 57% of individuals with an OUD will complete an residential & 51% will receive another level of care upon discharge



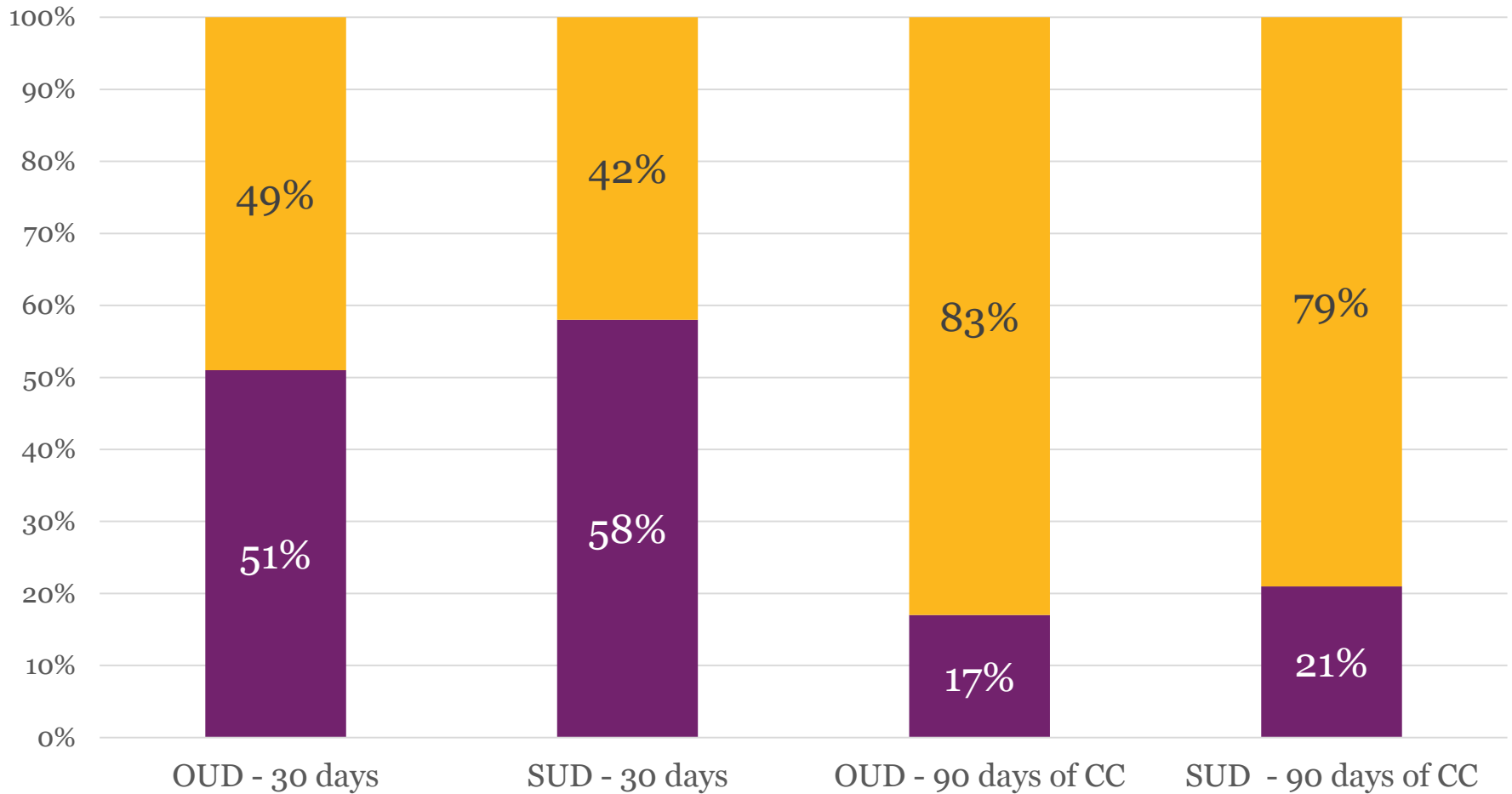
90-Day Follow-up from residential tx: CCBH Network

- A 90-day metric was recently included in analyses
 - The 30-day metric is a dichotomous outcome, in that a person either receives
 - ✓ a positive service within 30 days of discharge from a residential program (e.g., initiate OP or receives a case mgmt. contact) or
 - ✓ A negative outcome, which is either no service contact in 30-days or a crisis service (e.g., detox or psy hospitalization)
 - The 90-day metric is a measure of continuous tx; a person “hit” the 90-day mark if they received ongoing OP or residential services with no break in billing greater than 10-days
 - ✓ Transfers from residential to HWH or another residential program (e.g., 3B to 3C) were included in the 90-day count



30- & 90-Day Tx Enrollments after Discharge from Residential Tx: CCBH Network

■ Engaged in Tx ■ Disengaged

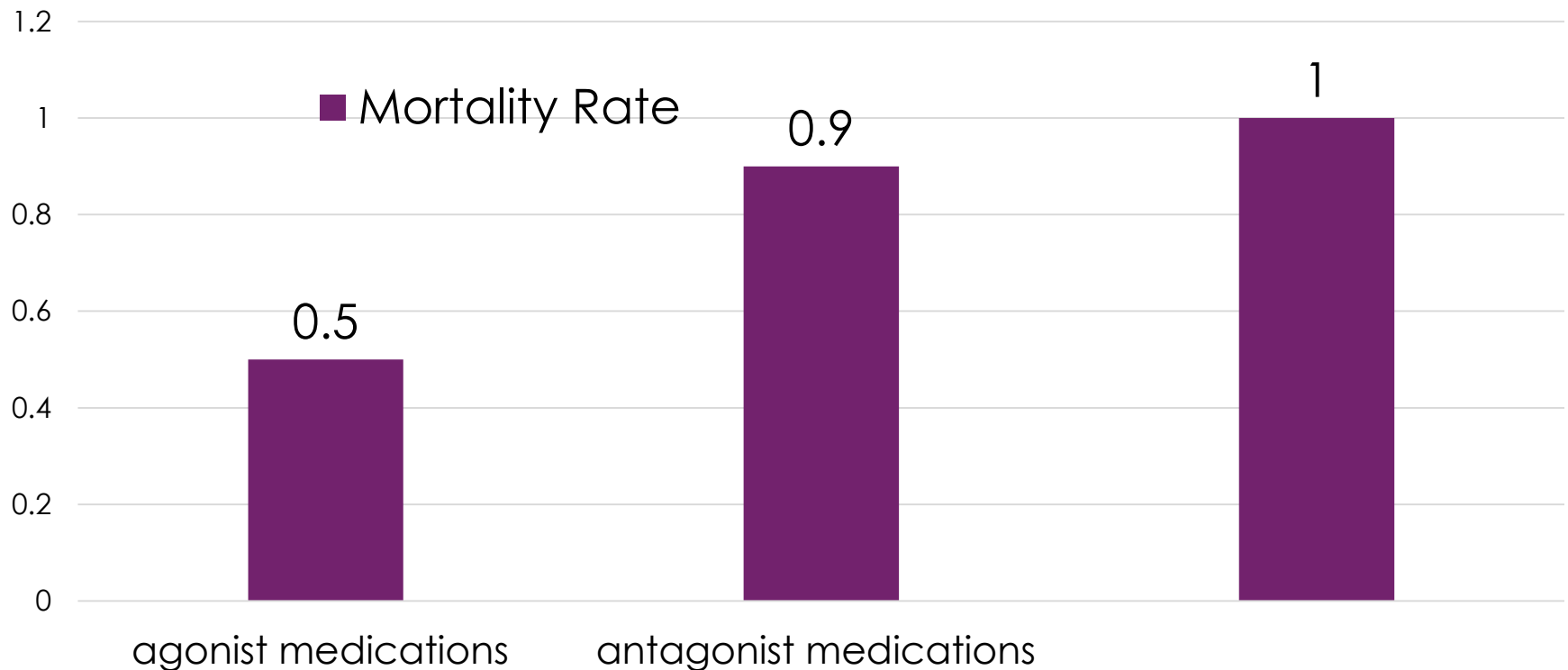


Challenges for Individuals with OUD

- Individuals with an OUD have a higher rate of relapse as well as a more rapid return to using opioids than individuals with other SUDs leaving treatment, residential or outpatient
 - All individuals with a SUD are difficult to retain in a continuum of care; however, those with an OUD tend to experience more negative events upon discharge, including a dramatic rise in overdose events
 - Medication-based treatment, as noted in the report by the National Academy Press (NAP) recommends agonist medications as the first line of tx for those with an OUD

NAP Report on MAT – 2019

Individuals with an OUD who receive agonist medications, methadone or buprenorphine, have a 50% lower mortality rate compared to individuals receiving abstinence-based treatment with no medications



Creating an Integrated System of Care

Individuals with an OUD need both psychosocial services & access to all three medications through all levels of care, starting at admission to any tx program - the primary goal of the *Centers Of Excellence*

ABT/
psycho-
social
services – all
levels of
care



All 3
Medications



Integrated
care, high
rate of
retention,
low rate of
ODs



Expanding Access to MAT

MAT for people with an opioid use disorder (OUD) leads to significant increases in treatment retention & reductions in opioid use compared to abstinence-based treatment

Despite the strong evidence supporting MAT for people with an OUD, less than 40% of those entering treatment are provided with any of the FDA approved medications for OUD

Two Systems of Care for One Individual?

Individuals seeking help for an OUD as well as counselors providing helpful services are usually required to select either MAT or ABT for an OUD

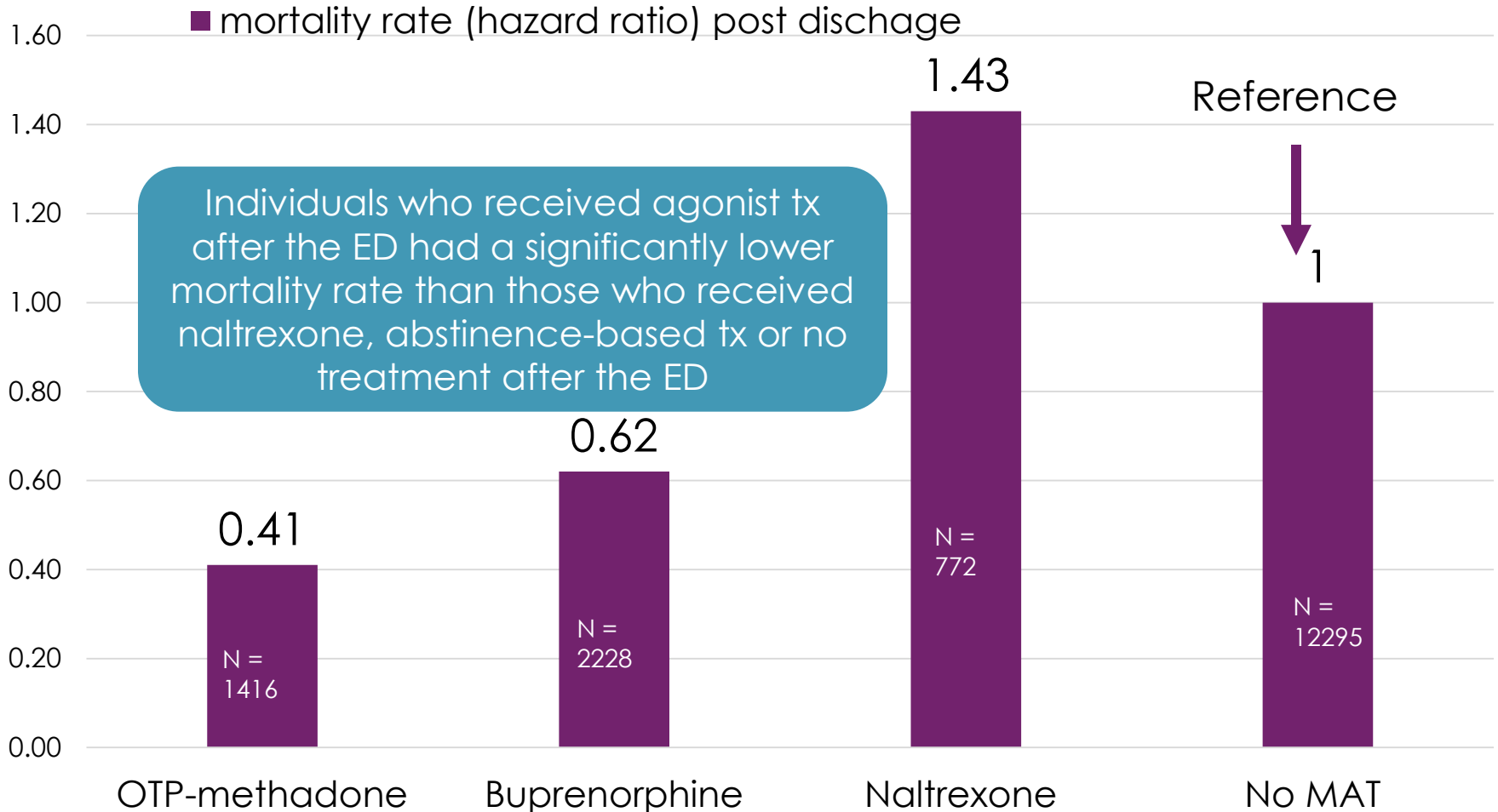
MAT (Agonist medications)

Abstinence Based Tx (antagonist medication)

Odds Ratio - Mortality in MA after OD

- Researchers in Massachusetts tracked 17,568 individuals who had an opioid-related overdose for 12 months after the event
- After the OD event:
 - 30% received some type of MAT and a mix of other traditional services, such as detox or residential care,
 - 9% received detoxification services within the first month,
 - 4% received short-term residential services and 3% received long-term residential services, and
 - Approximately 58% received no behavioral health services
- Mortality rate after the OD event:
 - The 12-month all-cause mortality rate was 4.7/100 person years after discharge or approximately 235 times the rate for the State

Odds Ratio - Mortality in MA after OD

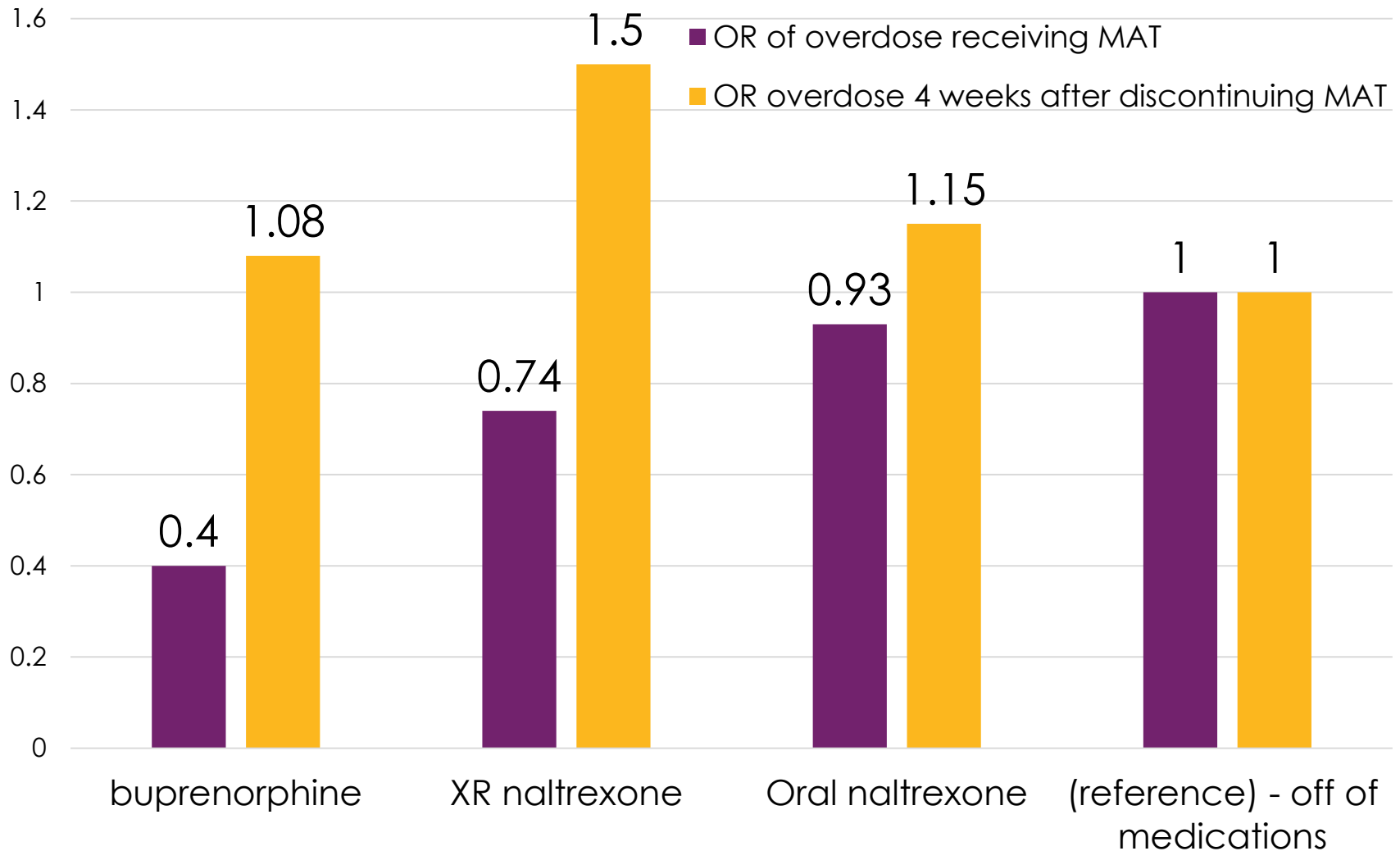


OR of OD in Commercial Ins. Plans

- Researchers calculated the odds ratio (OR) of an overdose for 46,846 individuals with an OUD in commercial insurance plans who received either buprenorphine (40,441) or naltrexone
 - 1805 (3.9%) individuals had 2755 overdoses recorded during the approximately 18 month review period
 - 2020 overdoses (73%) occurred when individuals were no longer taking medications for their OUD



Odds Ratio of OD in Commercial Insurance



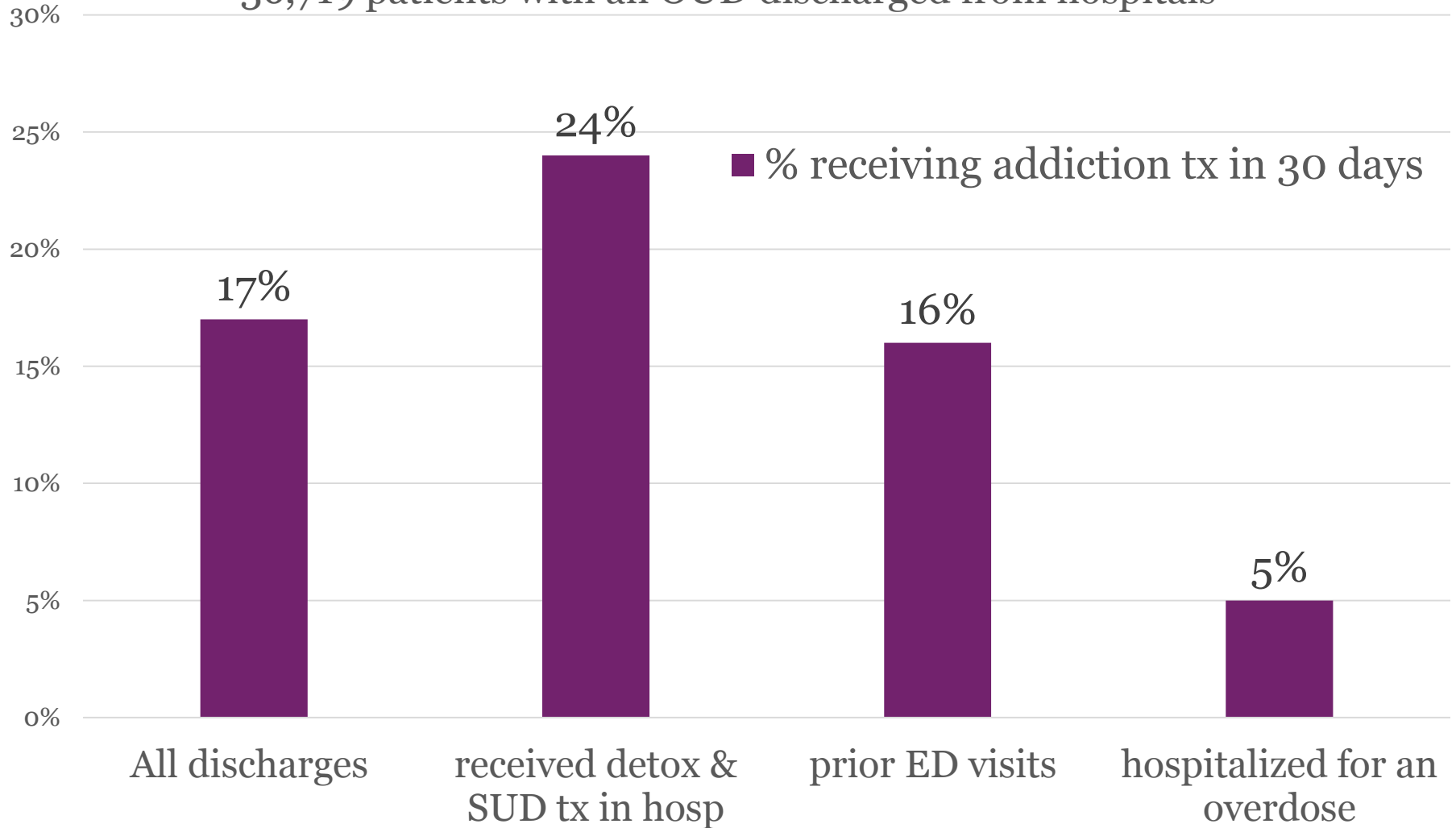
Challenges of Engaging People in ED

People with an OUD leaving an ED, have a powerful habit to use opioids, regardless of how close they were to death

The habit to use illicit opioids can be muted by providing individuals with a low dosage, long acting opioid, such as buprenorphine or methadone

% Engaged in Tx after Hospitalization for OUD Related Condition in U.S. 2010 to 2014

36,719 patients with an OUD discharged from hospitals



Naeger et al., 2016, ,



The Cycle of Hospitalizations and ED Contacts for Individuals with an OUD

8% increase in Hospitalization rates for OUD related events every year since 2003

24% of patients hospitalized for an OUD event are re-hospitalized in 90 days

20% or fewer of discharges engage in addiction treatment

50% of patients with an OUD who encounter an ED will have another ED event within 12 months

20% of individuals with an OUD receive addiction tx in the U.S. & **8%** receive medications

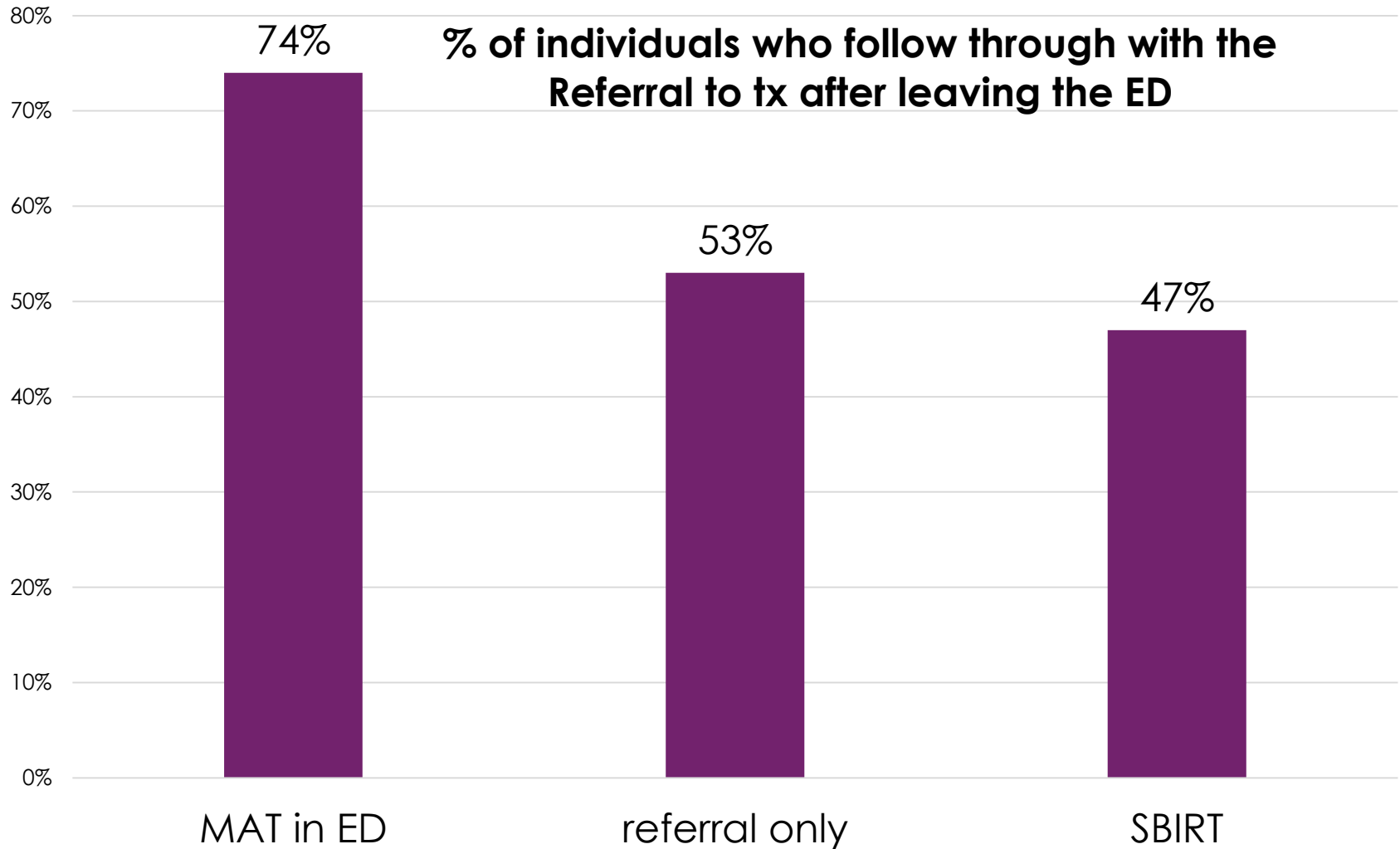


Immediate MAT Reduces OD Rates

- Researchers at Yale tested a rapid tx model for people entering an ED who were identified as having an OUD
 - Individuals were randomized to one of three methods for referring them to addiction treatment after they left the ED, including:
 1. Immediate initiation of buprenorphine in the ED with a warm handoff to an OBOT for ongoing tx,
 2. A Screening, Brief-Intervention and Referral to Tx (SBIRT) protocol – an evidenced-based engagement protocol based on motivation interviewing, or
 3. A referral only group – individuals were provided with a referral to an addiction treatment program upon discharge



Initiating Buprenorphine in the ED



Initiating Buprenorphine in the ED

- The Yale study demonstrated that initiating buprenorphine in the ED can lead to significantly high engagement rates
 - At two months post ED, individuals who received buprenorphine in the ED, had lower substance use & higher tx retention than the two groups who were referred to tx, without initiating buprenorphine in the ED
 - However, the Yale study included only 10 weeks of buprenorphine followed by a taper;
 - at 6 and 12 months, all three groups had higher substance use patterns & lower tx retention, including the exp group (D’Onofrio et al., 2017)

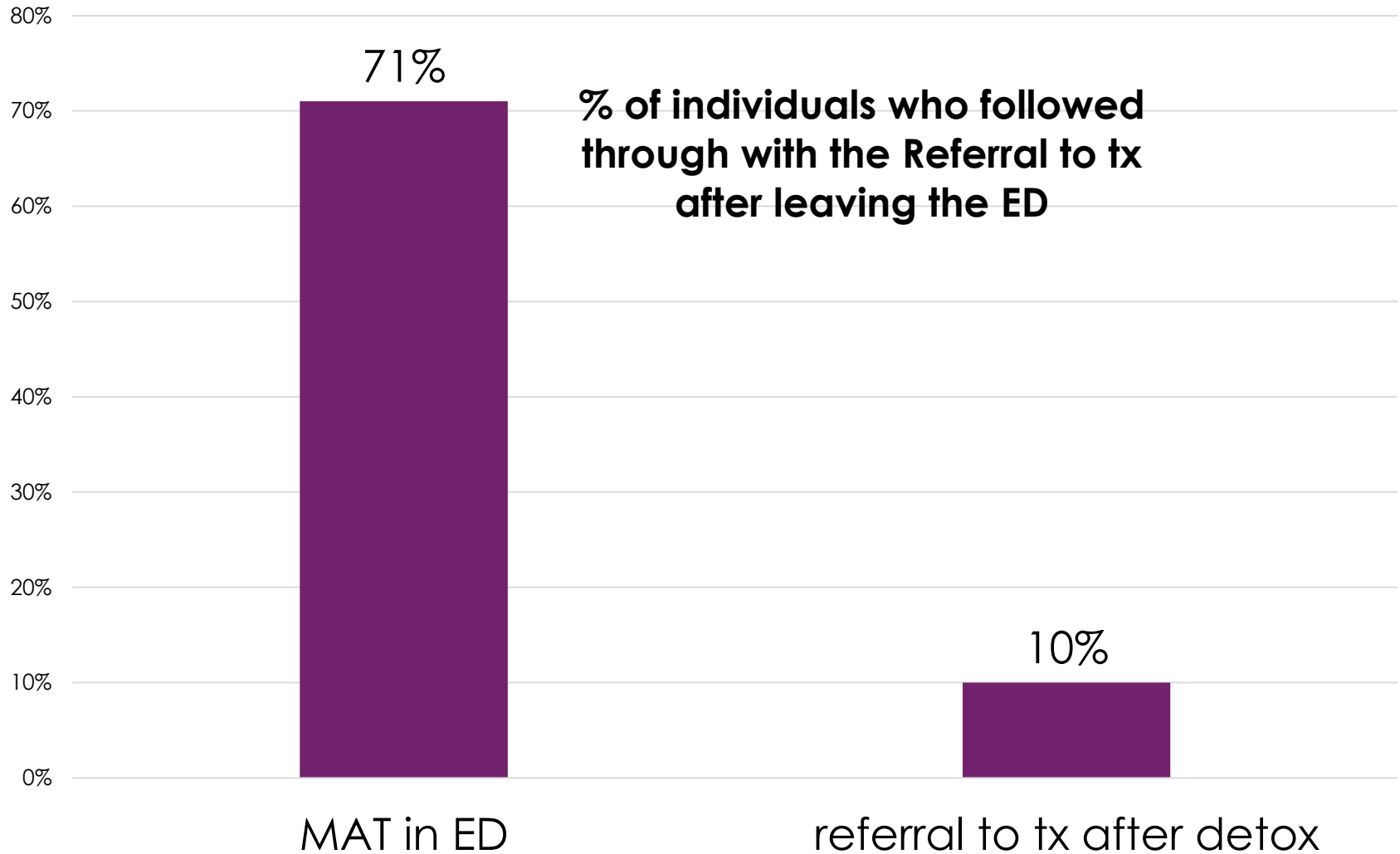
The takeaway message is to keep people on the buprenorphine



Immediate MAT Reduces OD Rates

- Researchers in Boston tested a similar rapid tx model for people entering an ED who were identified as having an OUD
 - 113 Individuals were randomized to receive either buprenorphine induction in the ED or a 5-day detoxification with buprenorphine in the hospital
 - Both groups were referred to treatment after discharge and those assigned to the ED induction group received daily dosage of buprenorphine until they enrolled in an OBOT

Initiating Buprenorphine in the ED



Initiating Buprenorphine in the ED

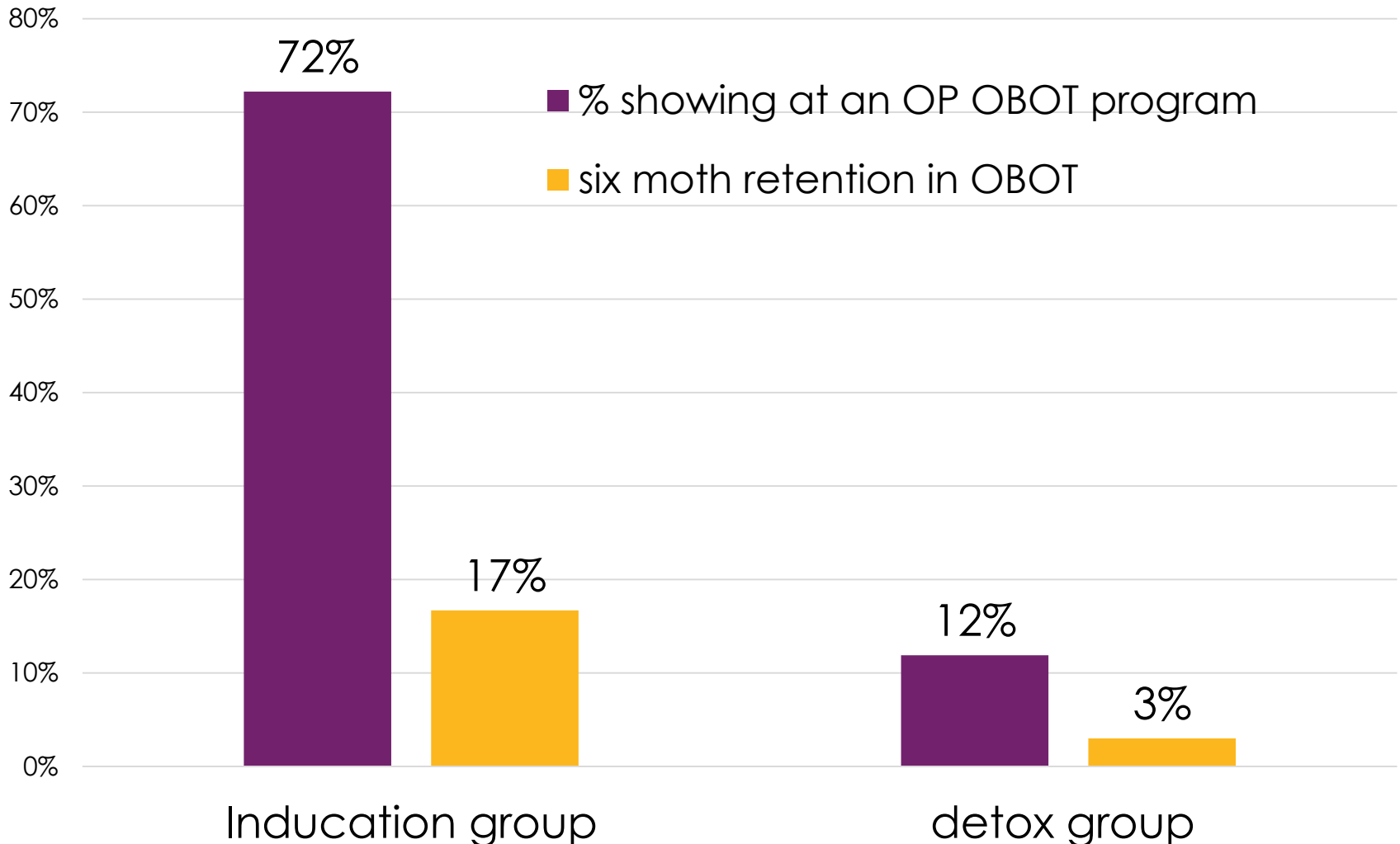
- The Boston study found the same positive results in that initiating buprenorphine in the ED can lead to significantly high engagement rates
 - However, the study also found that many of the individuals who effectively engaged in the OBOT after the ED withdrew soon after engaging in treatment
 - At 1 & 6 months post discharge, the experimental group had the same high IV heroin use patterns as those who were in the detox condition
 - The group had high rates of IV heroin use & needed more than an OBOT, such as OTP methadone



Initiating BUP in Hospital Setting

- Researchers at an urban medical hospital initiated a protocol for patients with an OUD who were hospitalized, but not seeking treatment for their OUD (Liebschutz et al., 2014)
 - Individuals needing detoxification for their OUD were randomized to one of two tx protocols in the hospital
 - Standard detoxification protocol using buprenorphine and referral to an OBOT upon discharge (or other D&A program)
 - Induction to buprenorphine maintenance in the hospital and referral to an OBOT upon discharge

Initiating BUP in Hospital Setting

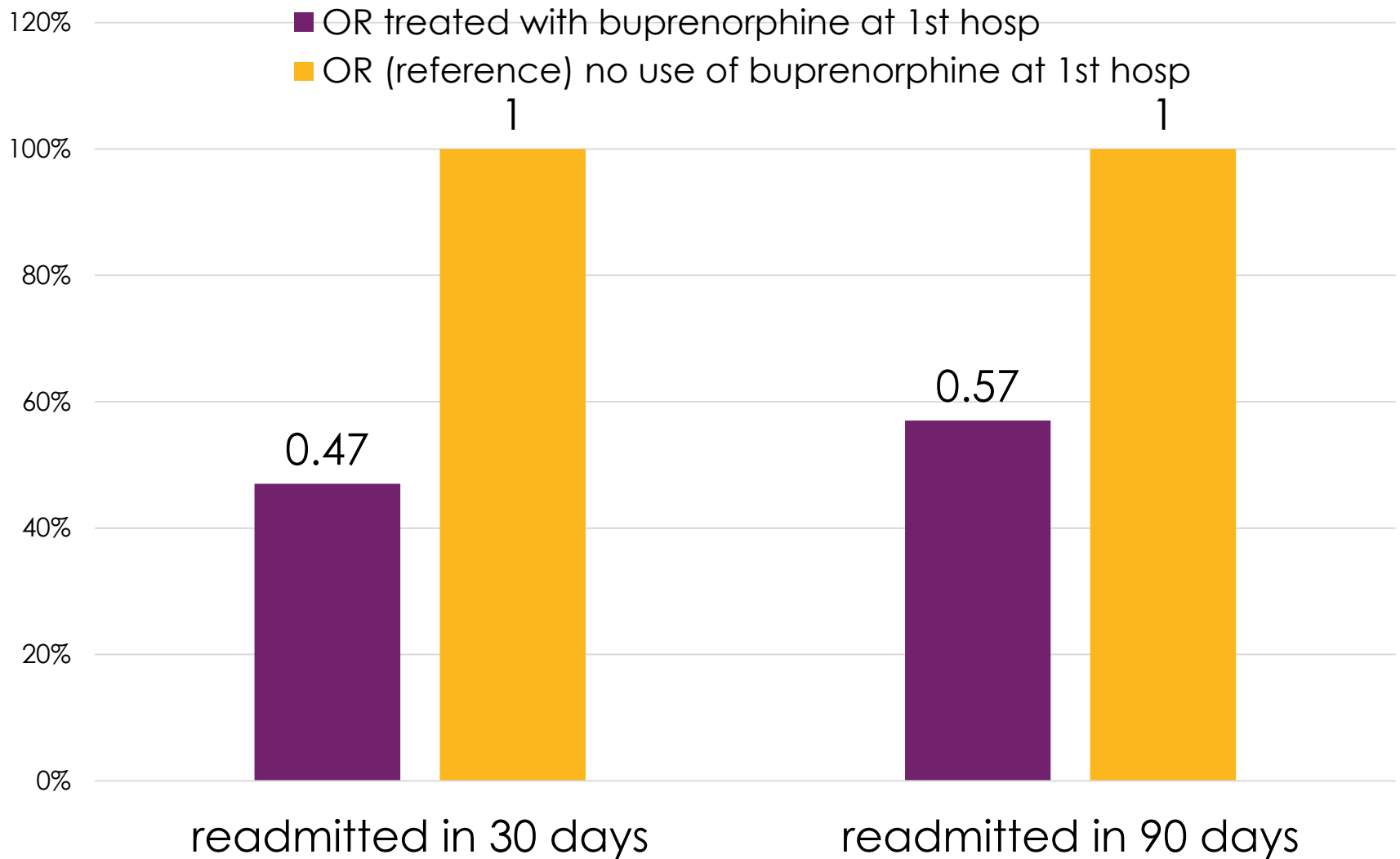


Initiating BUP in Hospital Setting

- Researchers tracked the hospital readmission rates of 470 adults with an OUD who were hospitalized for a medical reason (e.g., bacterial or viral infections, overdose, physical trauma)
 - 18% were re-hospitalized to the same hospital in 30 days of discharge &
 - 32% had returned to the same hospital in 90 days
 - Those who were treated with buprenorphine during the first hospitalization were half as likely to be re-admitted



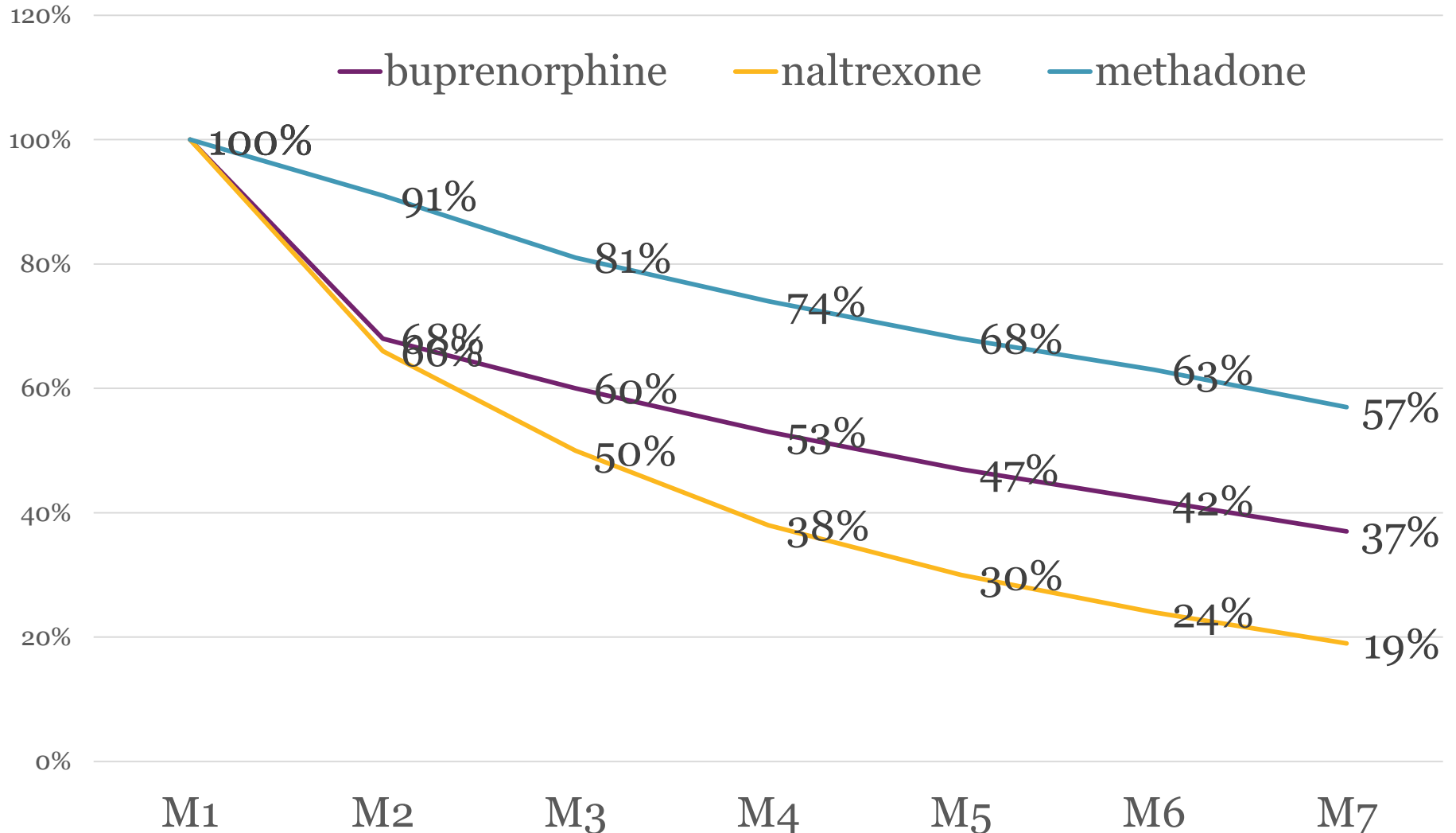
Initiating BUP in Hospital Setting



Six Month Attrition Rates by Medication for OUD

- Attrition rates were produced for CCBH members who received one of the three medications used in the treatment for an OUD, including:
 - Methadone within an OTP – 12,831 members enrolled in a OTP between 1/1/13 to 6/30/18 and tracked to 12/31/18
 - Buprenorphine within a D&A OBOT – retention is based on BU codes billed – 4925 members enrolled in the OBOT between 1/1/17 to 12/31/18 and tracked to 6/30/19
 - Naltrexone (Vivitrol only) – 9446 members who received a prescription for naltrexone between 1/1/15 to 12/31/18 and tracked to 6/30/19
 - A caveat to the naltrexone data is that 20% of the members received naltrexone for an alcohol used disorder (AUD), not an OUD

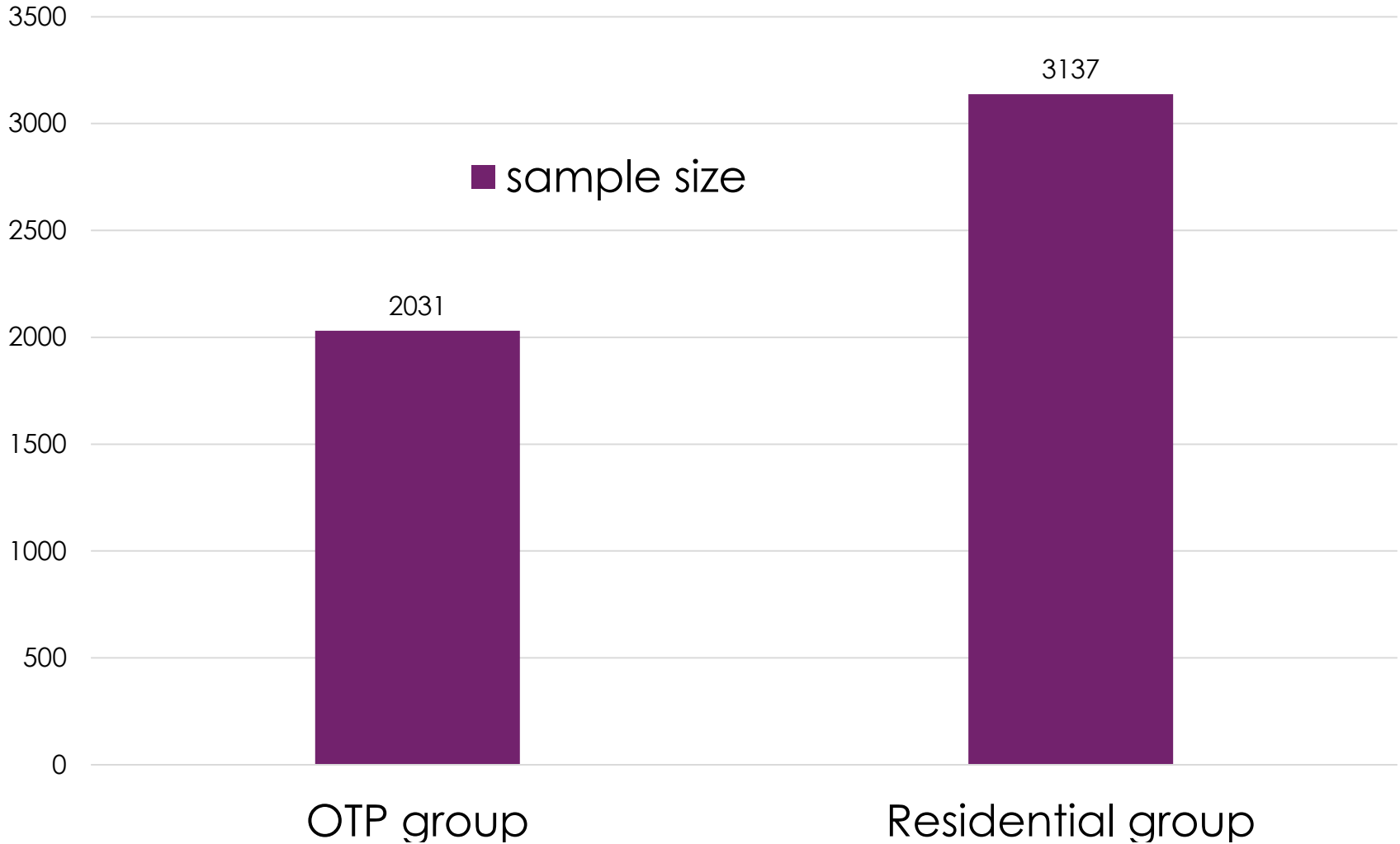
6-Month Attrition Rates by Medication for OUD: CCBH Network



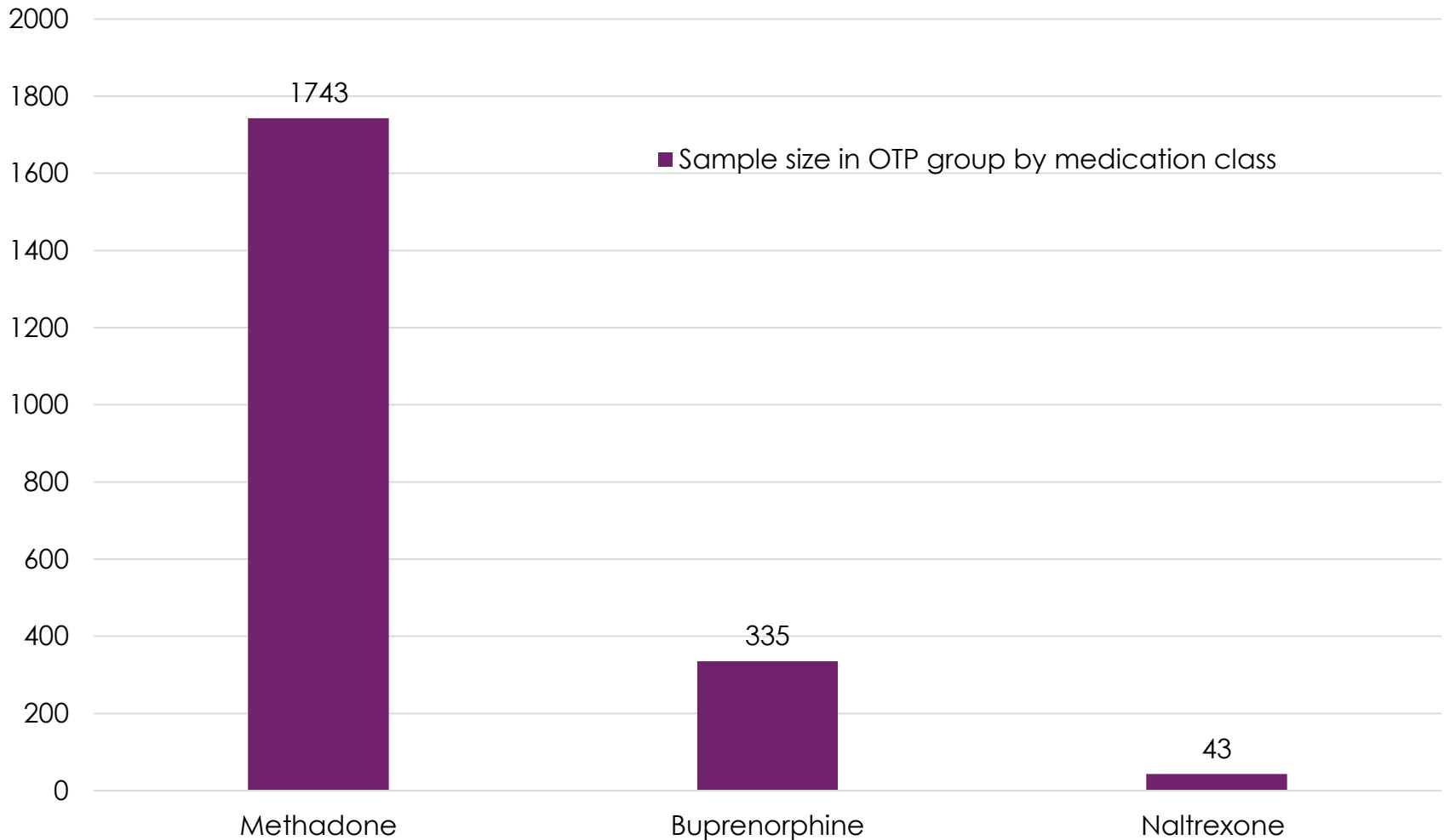
24-month Outcomes of CCBH Members with an OUD by OTP Methadone or Residential tx

- Medicaid expansion members were included in the following analyses
 - Expansion members were included if they had 12 months of continuous Medicaid coverage & enrolled in Medicaid before July 1st 2017
 - Members were grouped into one of two categories:
 1. First treatment was in an OTP & had not received MAT in the past 90 days for methadone or 45 days for buprenorphine or naltrexone (pharmacy data were checked prior to group selection)
 2. First treatment was in a detoxification or residential program & no pharmacy claims for MAT in past 45 to 90 days (same as group 1)

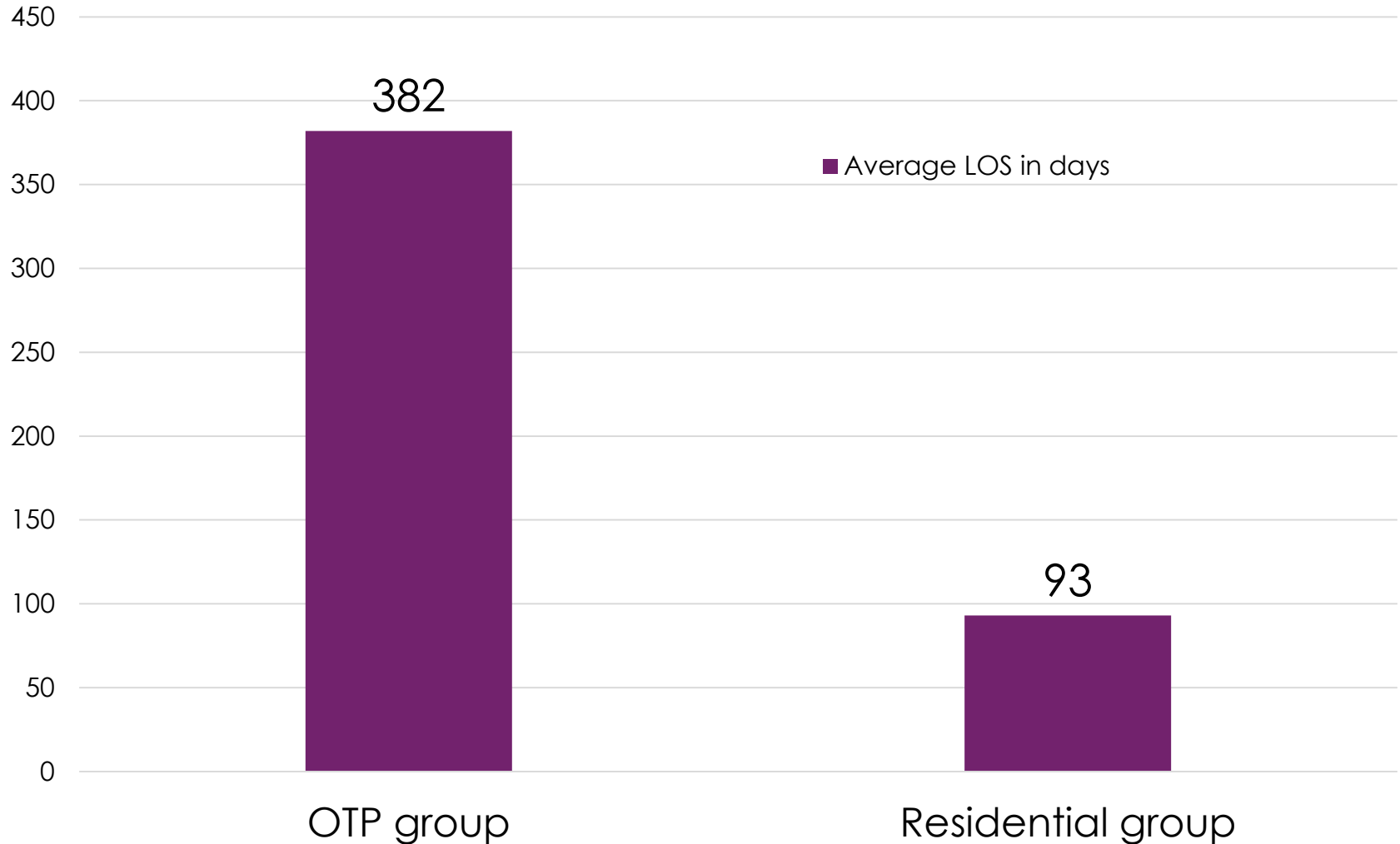
24-month Outcomes of CCBH Members with an OUD by OTP Methadone or Residential tx



24-month Outcomes of CCBH Members with an OUD by OTP Methadone or Residential tx



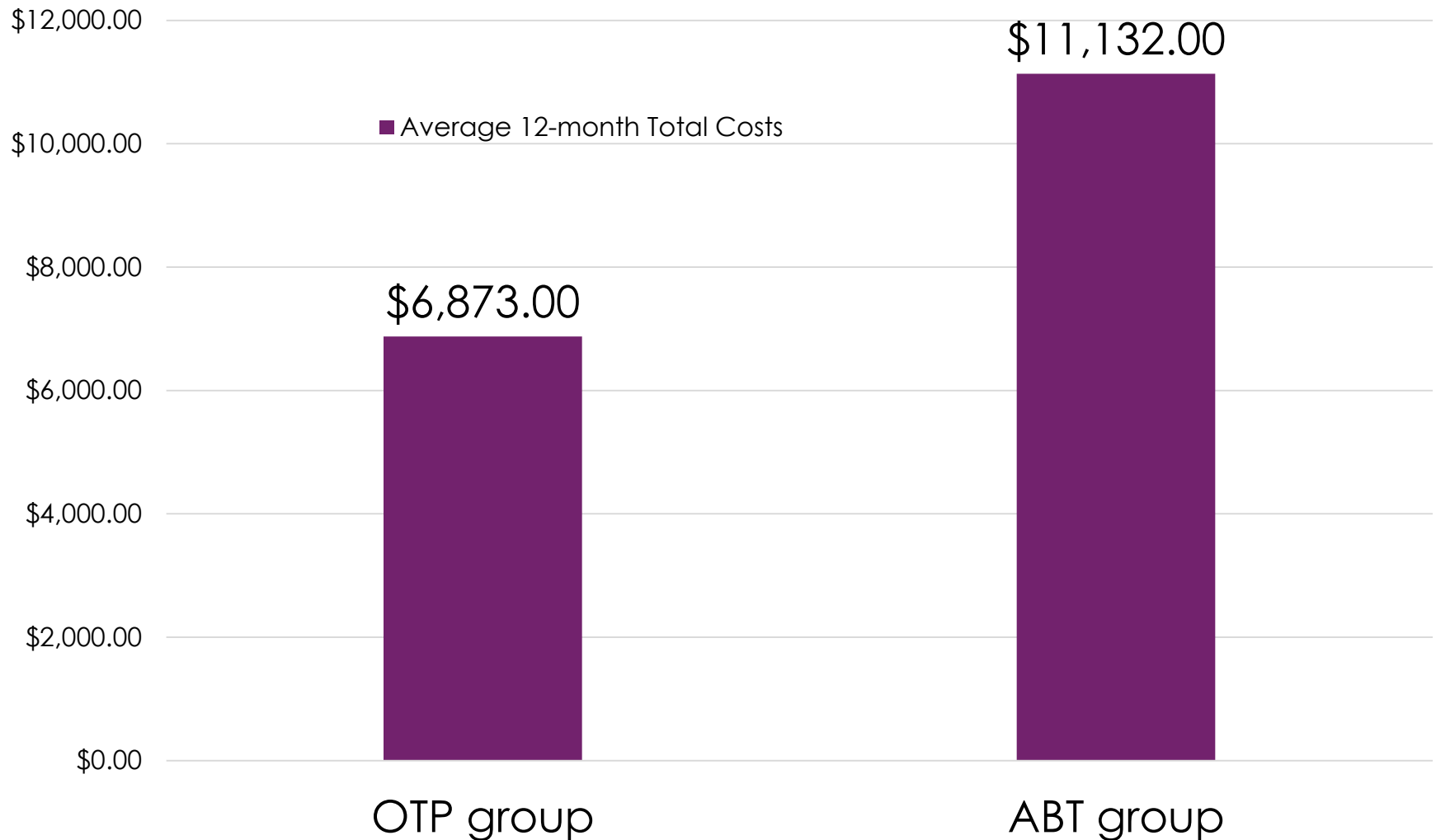
24-month Outcomes of CCBH Members with an OUD by OTP Methadone or Residential tx



24-month Outcomes of CCBH Members with an OUD by OTP Methadone or Residential tx

- Total cost per member included:
 - All OTP bundled & non-bundled services,
 - Residential treatment (detox, residential, & HWH),
 - All OP services, such as IOP or partial hospitalization,
 - Case management for both D&A and MH,
 - Peer services, assessments and all other ancillary behavioral health services under Medicaid,
 - All mental health services, including hospitalizations, psychiatry and outpatient,
 - ***the estimated cost of buprenorphine or naltrexone medications were not included***

24-month Outcomes of CCBH Members with an OUD by OTP Methadone or Residential tx



Cost of methadone is included, cost of buprenorphine or naltrexone is not

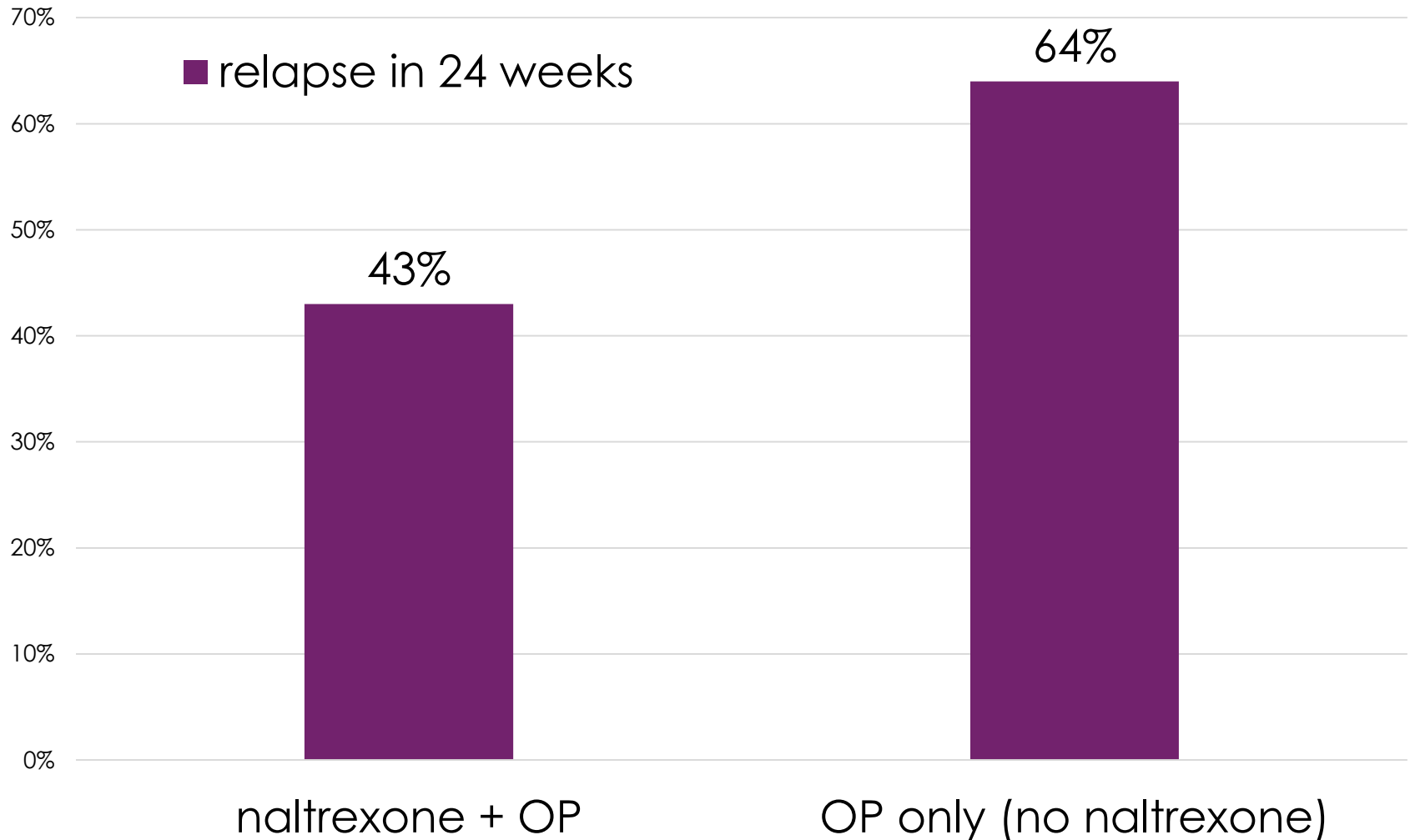


Naltrexone & Tx vs. Abstinence-Based

- The first published research in the U.S. comparing naltrexone to abstinence based treatment (Lee et al., 2016) found
 - Individuals assigned to the naltrexone tx, which included outpatient tx had lower relapse rates and no overdose events
 - Individuals assigned to the outpatient tx without the naltrexone shot had higher rates of relapse (see next graph) and seven overdose events



Naltrexone & Outpatient vs Outpatient Only

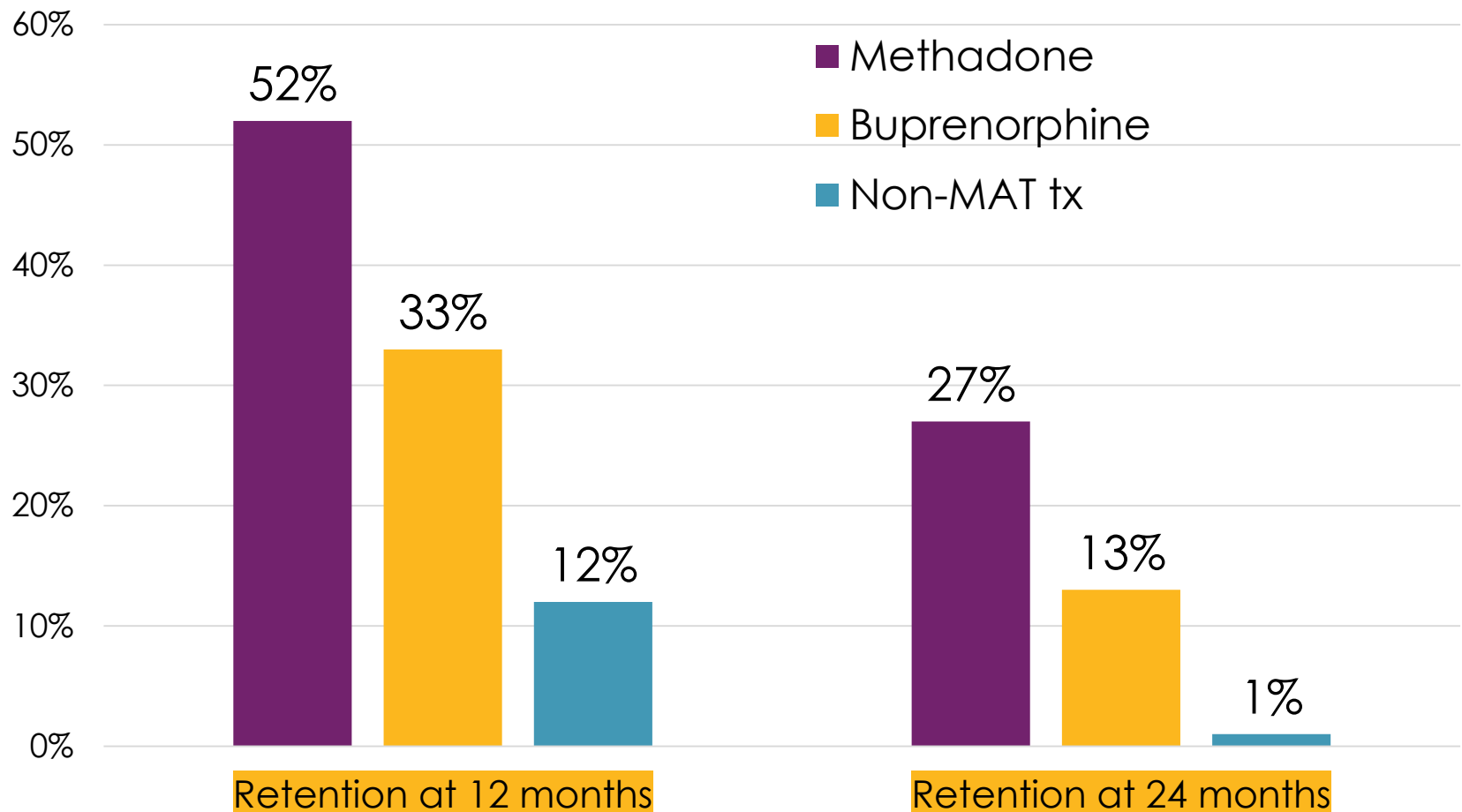


MAT vs. Non-MAT Tx

- The graphs on the next pages show the effectiveness of MAT compared to non-MAT tx for an OUD, including evidence-based outpatient tx
 - An analysis of 56,278 people with an OUD in the Massachusetts Medicaid system found that those who had received buprenorphine or methadone tx had lower relapse rates compared to all other forms of D&A tx



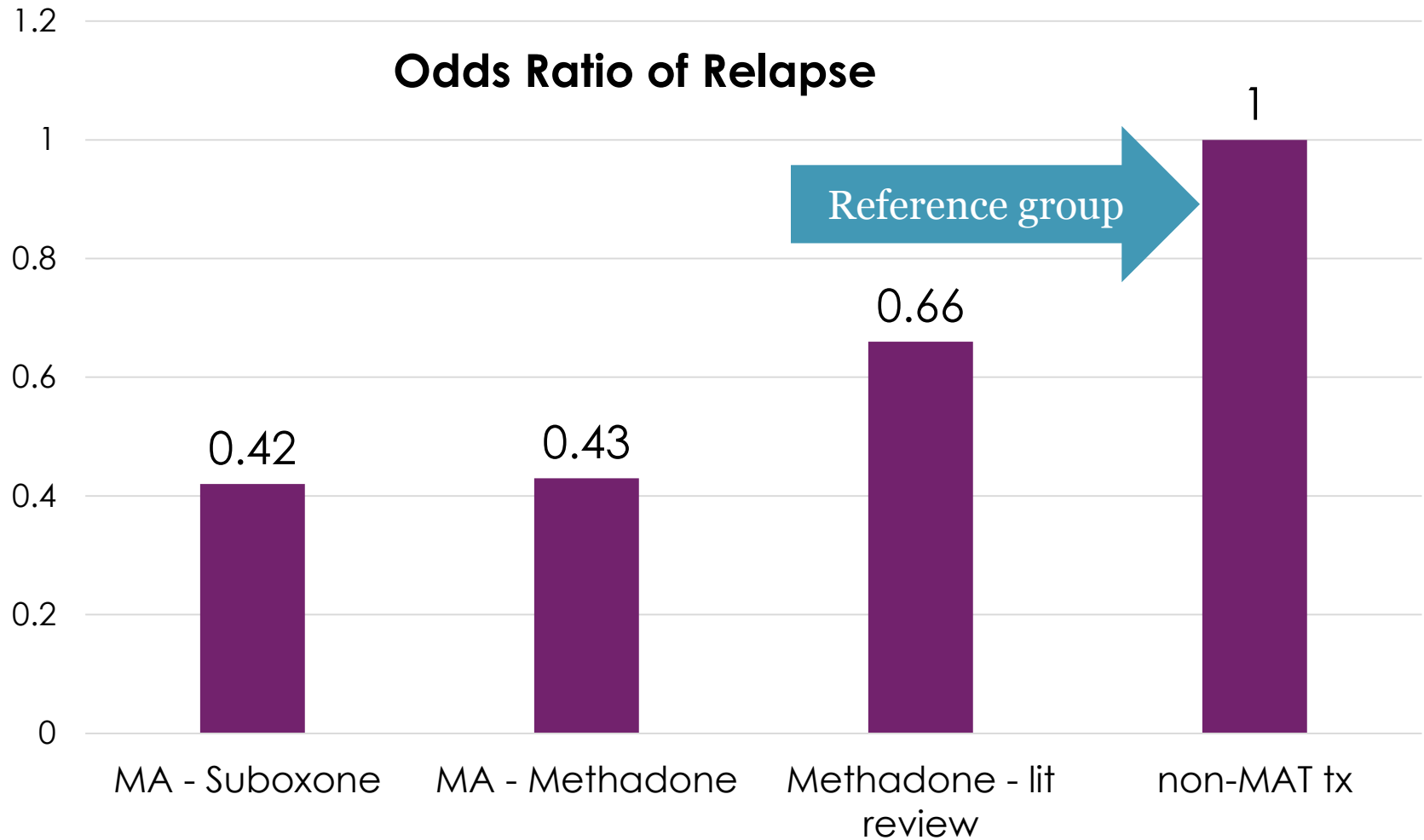
MA Retention in OUD Treatment



MAT vs. Non-MAT Tx

- The following graph includes the same MA data set (Clark et al., 2015) converted to an odds ratio of relapse, with abstinence-based treatment as the reference point; i.e., converted to a standard metric of 1
 - The three columns on the left include data from the MA study (1st & 2nd columns) as well as a meta-analysis (3rd column) of randomized clinical trials comparing OTP methadone to abstinence-based OP programs (Mattick et al., 2009)

MAT vs. Non-MAT Tx

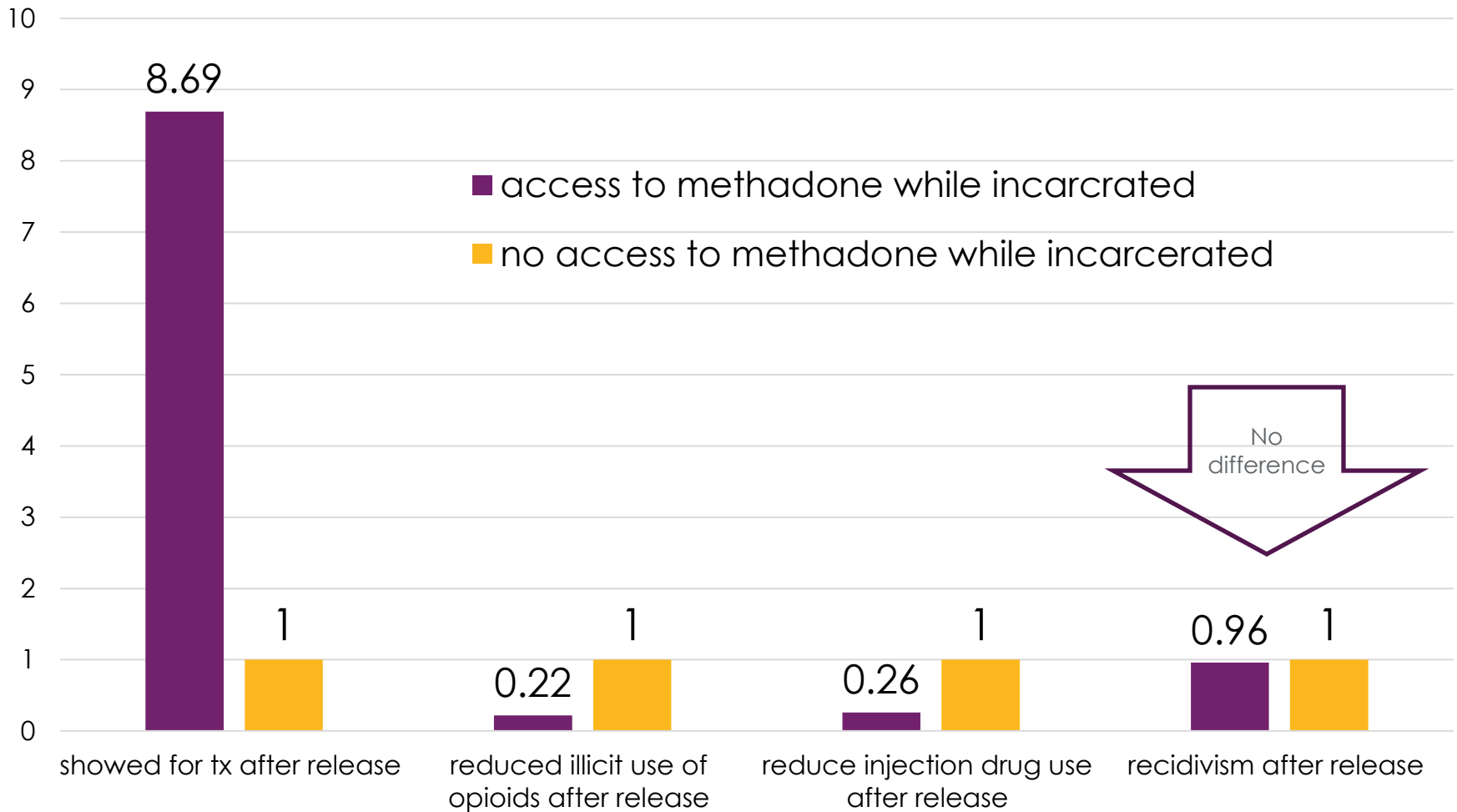


MAT w/ Criminal Justice Populations

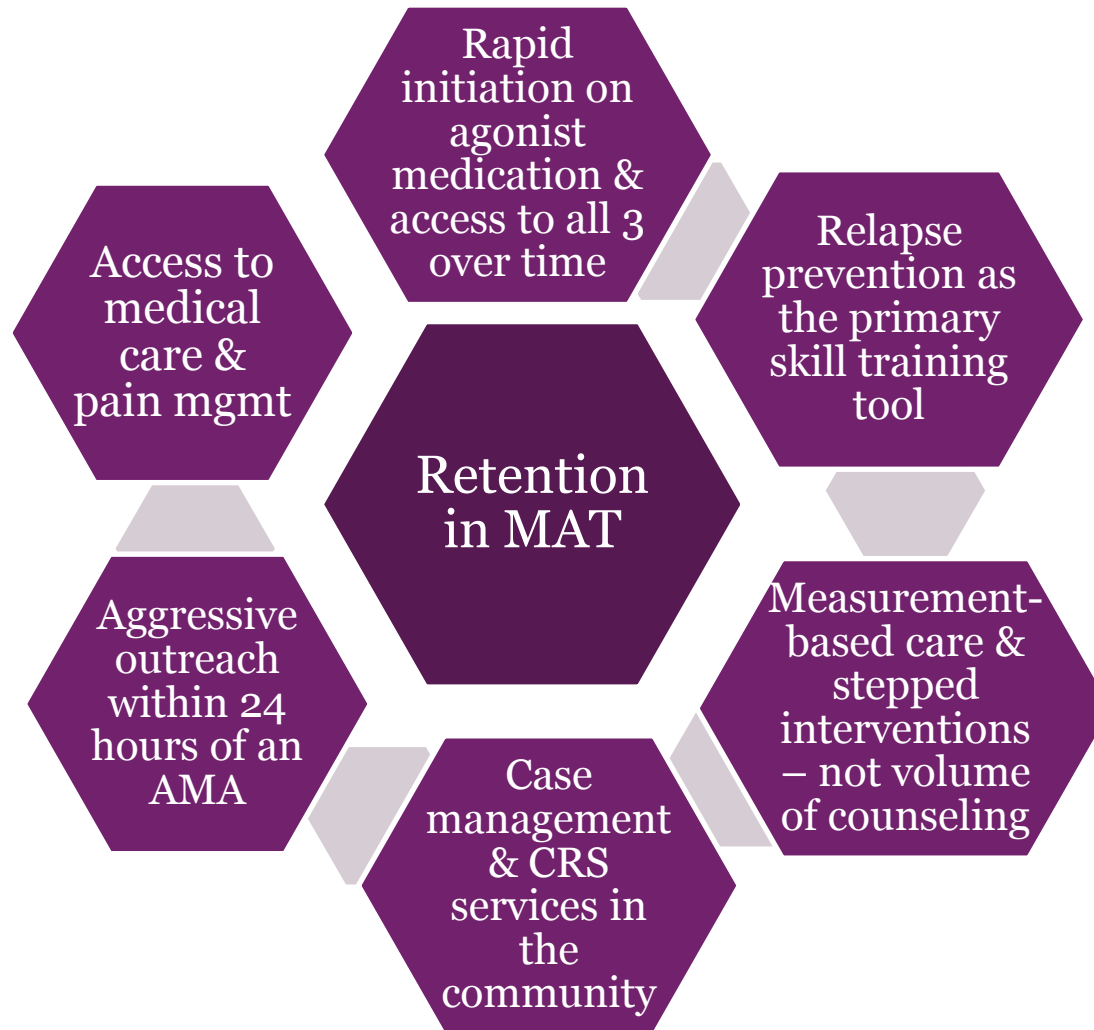
- Individuals with an OUD involved in the criminal justice system & provided with MAT while incarcerated have superior tx outcomes to individuals who are restricted from accessing MAT
 - A meta-analysis of OTP methadone in jails or prisons found significant reductions in opioid use as well as significant increases in tx enrollment, upon release from incarceration for individuals who were randomized to methadone tx while incarcerated, compared to those who were randomized to detox off of methadone (Moore et al., 2018)



Outcomes Odds: After Incarceration



Interventions that Increase Retention



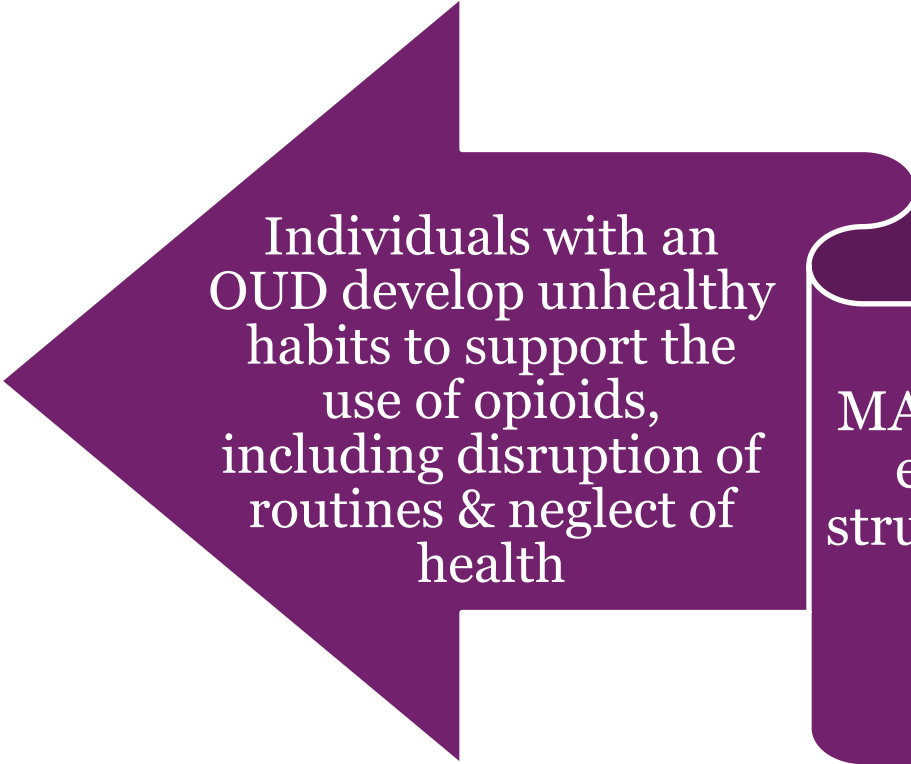
Engagement Strategies: Modify Habits

Create structure & reward system at admission of OTP to promote healthy habits & retention

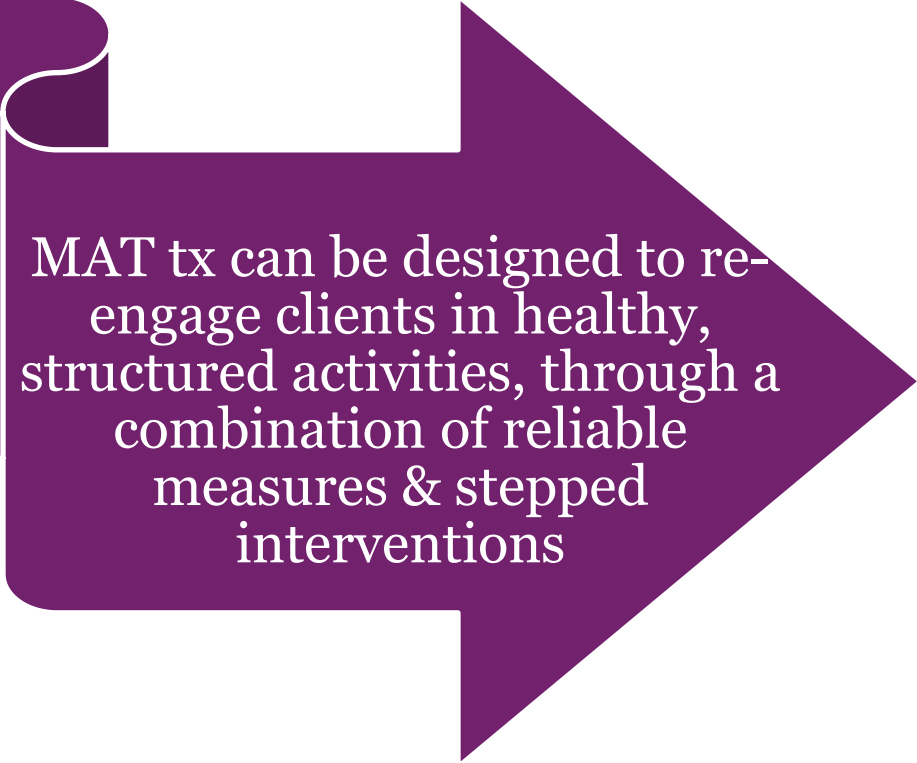
Focus treatment plans around values, not deficits and behavioral plans that increase skills

Use a measurement-based care model with stepped interventions

Engagement Strategies: Modify Habits



Individuals with an OUD develop unhealthy habits to support the use of opioids, including disruption of routines & neglect of health



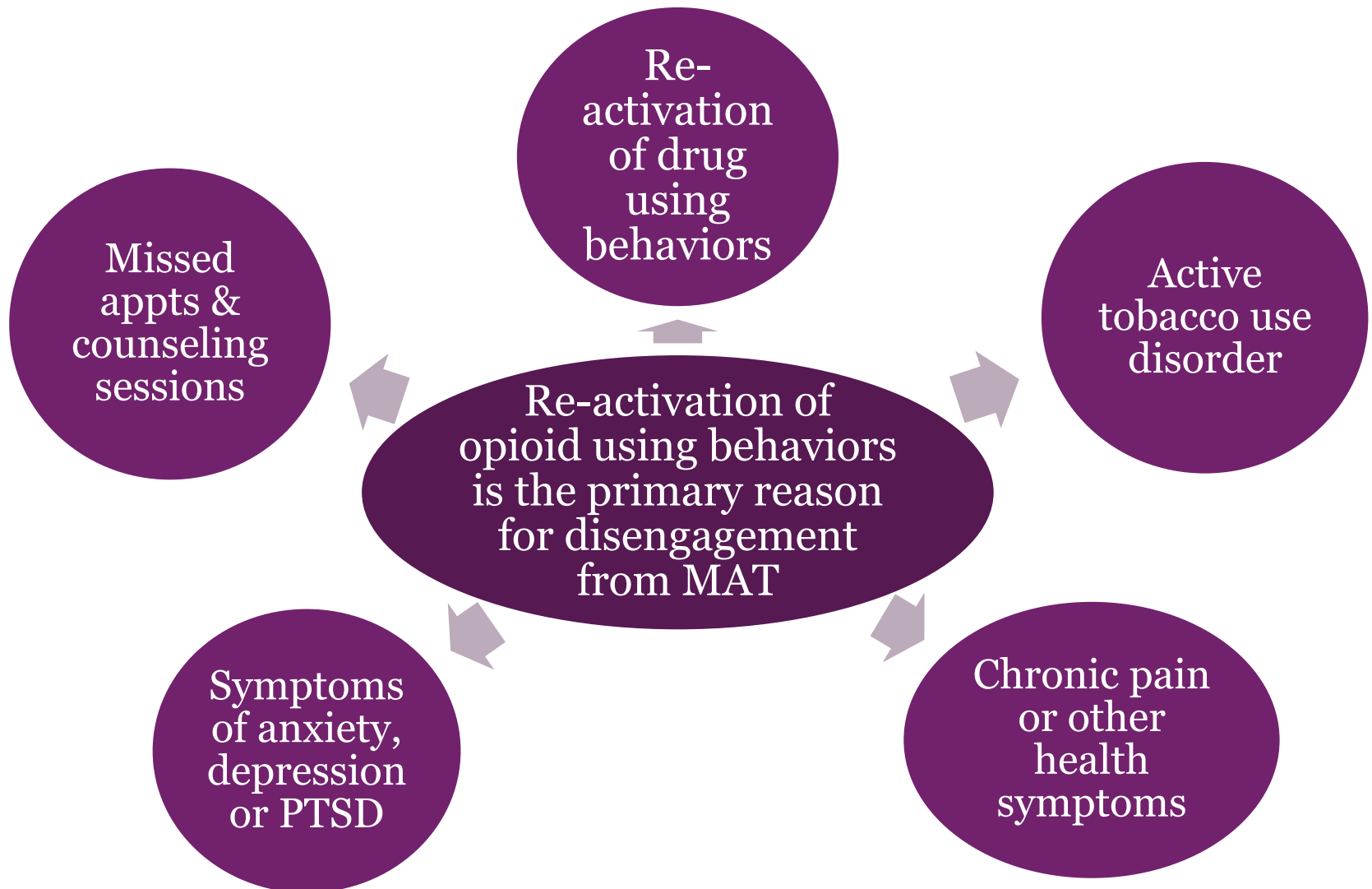
MAT tx can be designed to re-engage clients in healthy, structured activities, through a combination of reliable measures & stepped interventions

Example of Effective Interventions

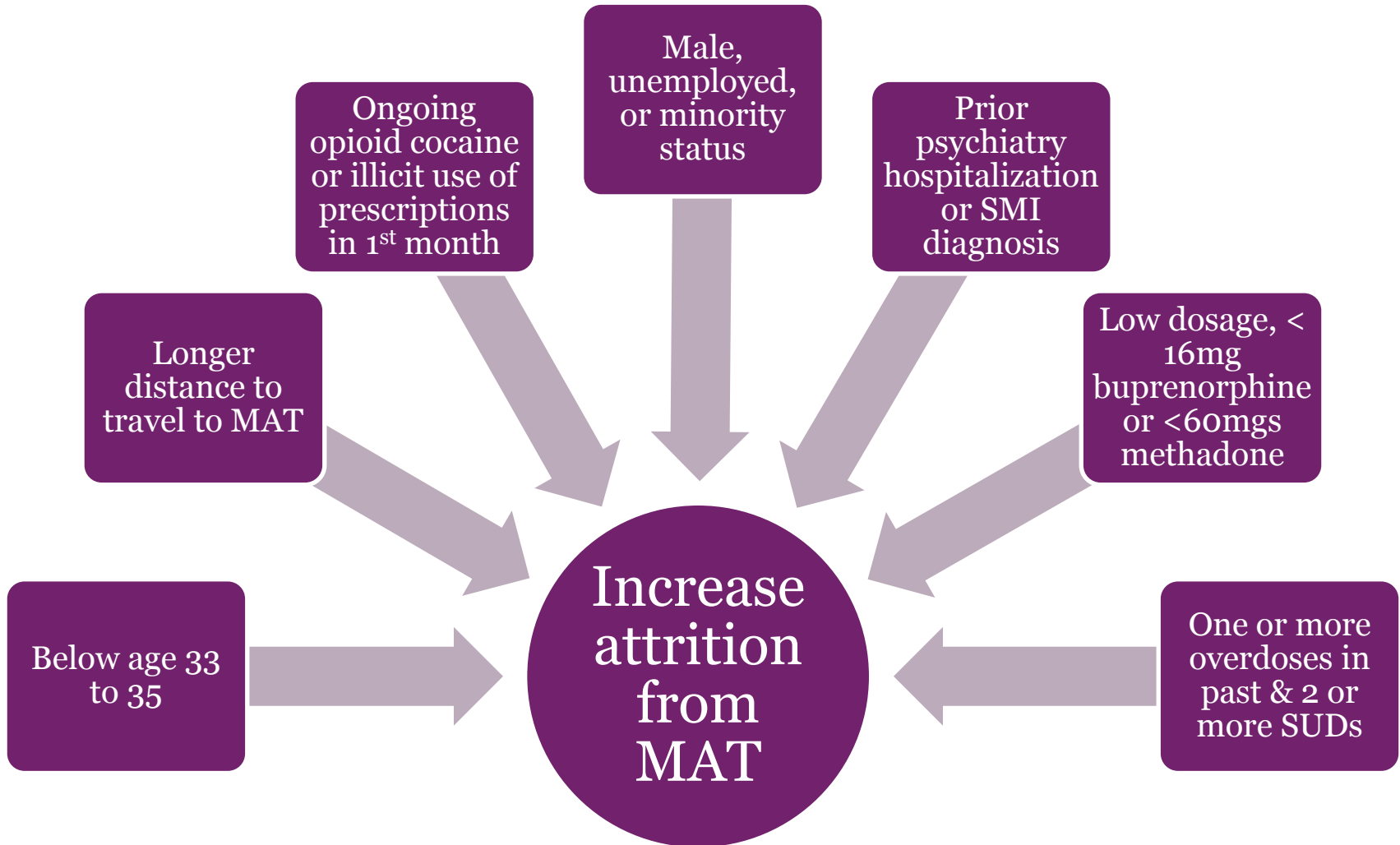
- Case management interventions have been found to be highly effective at increasing engagement in all addiction treatment programs, including MAT
 - An analysis of two randomized clinical trials (RCTs) on case management for MAT found that those who received case management services were 2.95 times more likely to enroll in a MAT program compared to those who received only a referral to MAT



Monitor Substance Misuse Behaviors



Attrition Factors in MAT



Example: Dosing Levels & Retention

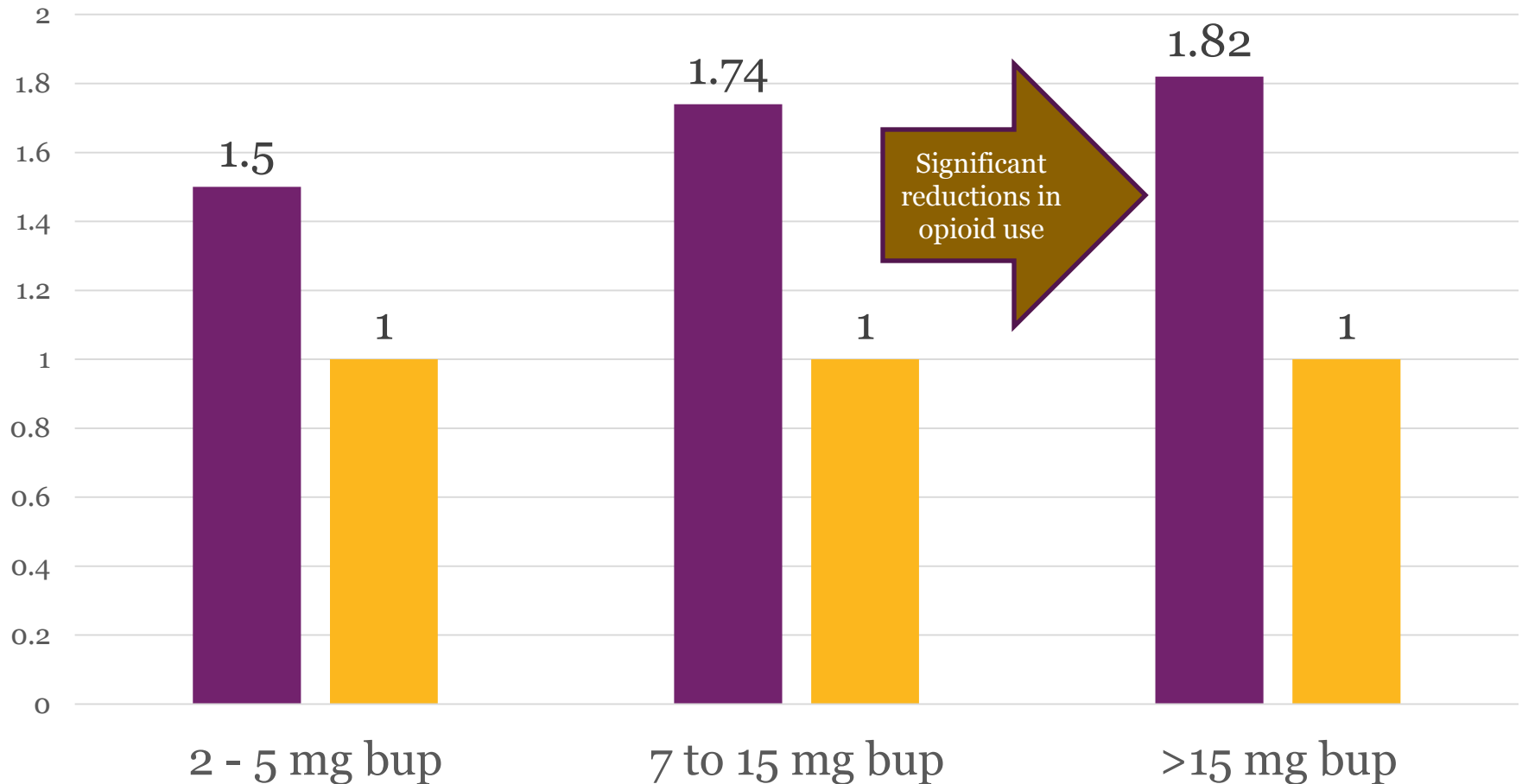
- Low dosing for buprenorphine and methadone are associated with increased relapse and disengagement from treatment
 - Researchers at Johns Hopkins reviewed relapse rates & attrition for patients in one of their OBOT programs
 - Individuals were categorized into 4 groups based on insurance type as well as daily buprenorphine dosage level & tracked for 4 months
 - 91 patients in a Medicaid MCO who were required to reduce the daily dosage to 16mgs/daily or lower because of a change in insurance
 - 71 Medicaid MCO patients already at or below 16mgs daily (no change)
 - 64 private or Medicare at or below 16mgs/daily
 - 71 private & Medicare above 16mgs/daily



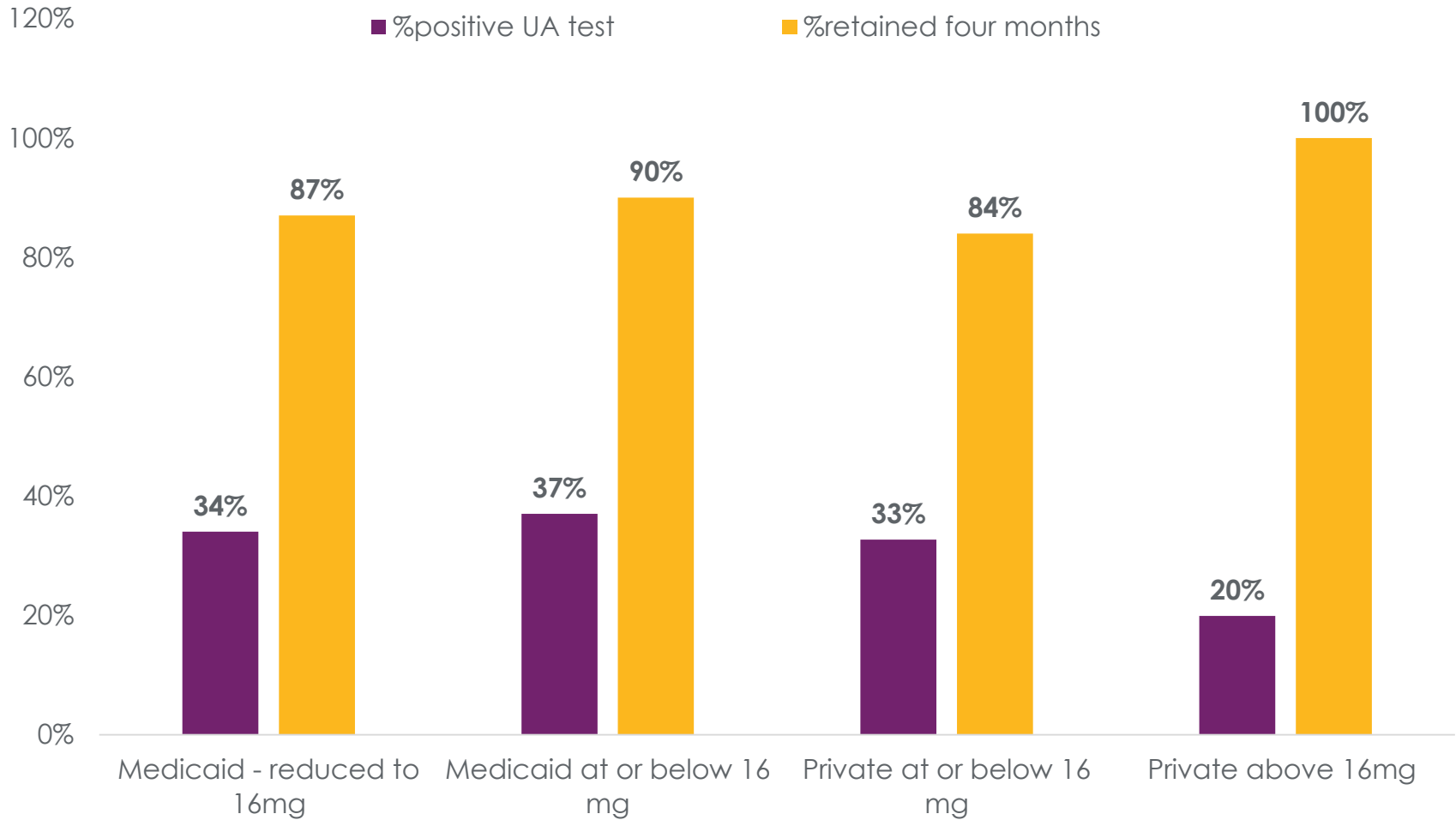
Access to Buprenorphine & Tx Retention

Odds Ratio of Staying in Tx for 6 months

■ Buprenorphine & counseling ■ Placebo + Counseling

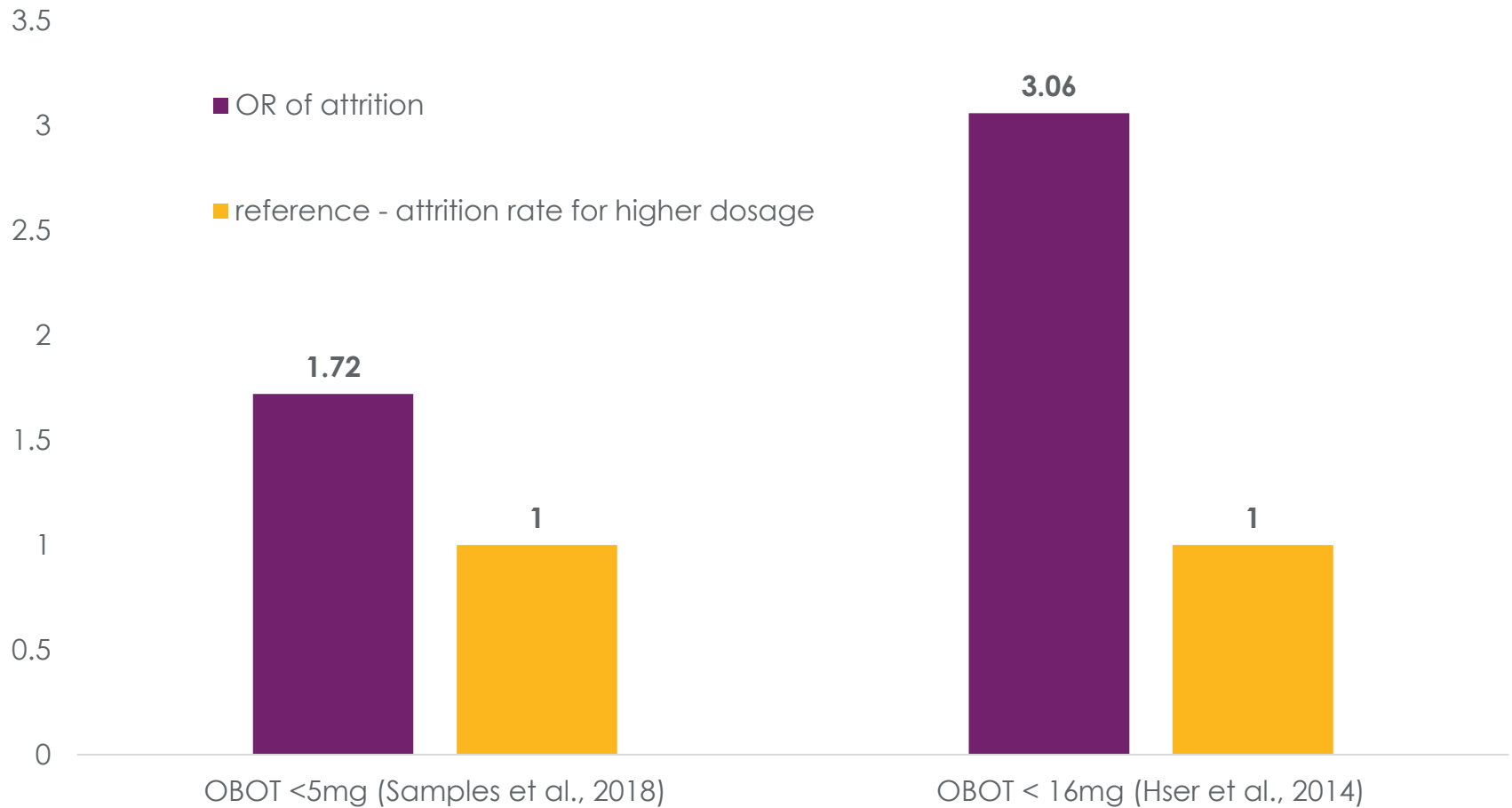


E.g.: Dosing & 4-month Retention



Buprenorphine Dosing & Attrition

Odds Ratio (OR) of Attrition



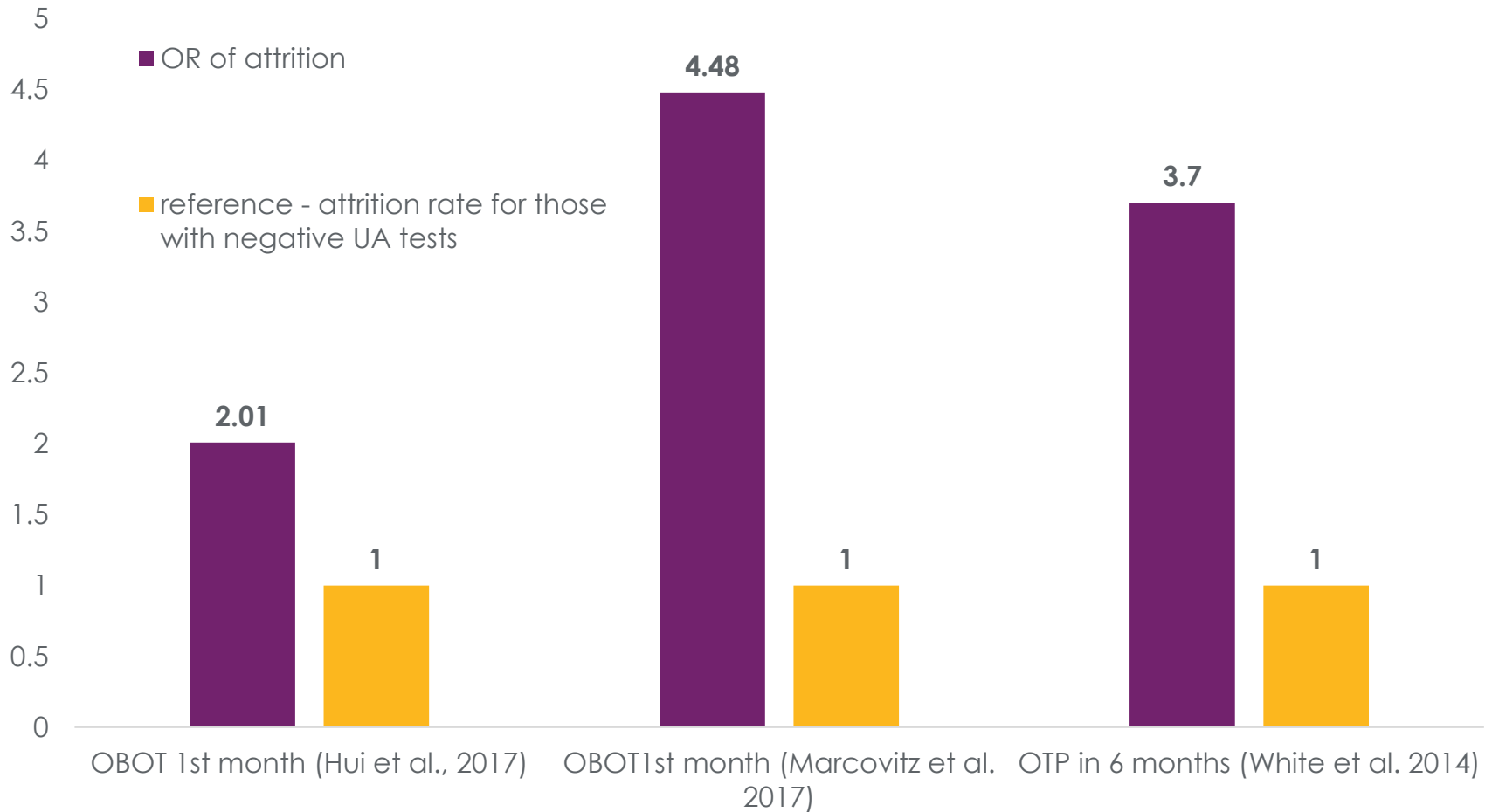
Positive UA tests in 1st Month

- Retention in MAT is inversely related to positive UA tests results for opioids and other drugs
 - The 1st month of ongoing illicit opioid use is significantly associated with early disengagement in both OBOTs and OTPs (see the next slide)
 - Positive UA tests decrease over time, on average, for individuals who remain engaged in OBOTs or OTPs; however,
 - Disengagement rates increase for those who tend to display a fairly steady use of opioids, cocaine & other illicit drugs for several months
 - Medically supervised use of benzodiazepines or opioids does not lead to disengagement; illicit use does
 - Diversion of the prescribed buprenorphine or methadone also leads to disengagement



E.g.: Positive UA Tests & Attrition

Odds Ratio (OR) of Attrition



Measurement-Based Care in MAT

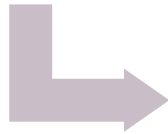
Create a measure of substance misuse

- Score misuse as a 1 or 0, based on UA test (or missed test), PDMP, update & review weekly



Measure attendance in scheduled activities weekly

- Establish benchmark for attendance weekly & score 1 or 0 for attendance



Measure linkage to PCP & outcome of HCV test

- Linkage can include 2-way interactions



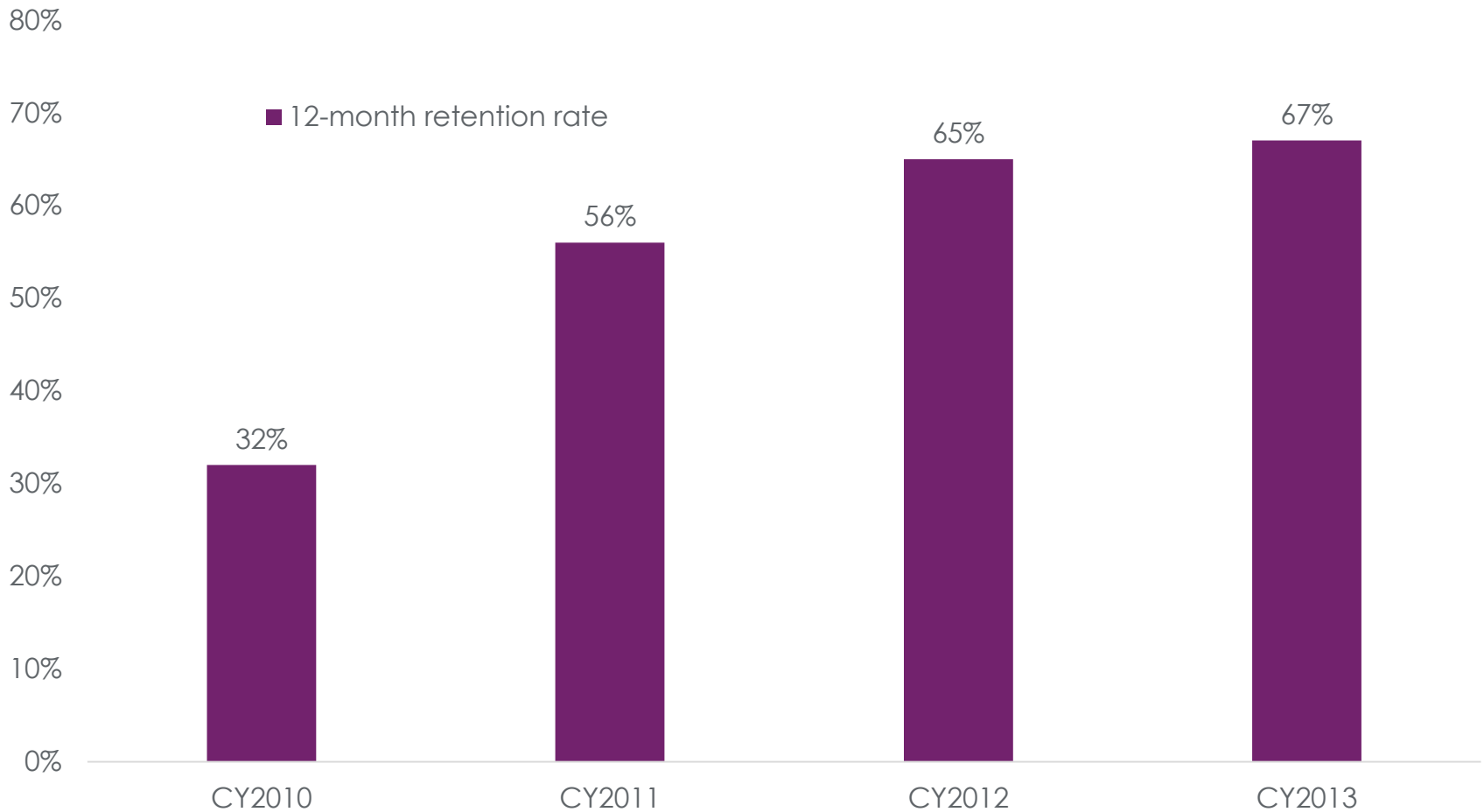
Incorporate other measures related to relapse; e.g., tobacco use or chronic pain

Example of Measurement-Based Care

- Massachusetts developed an OBOT – collaborative care program modeled after the collaborative care model for depression in PCPs (LaBelle et al., 2016)
 - A nurse care manager (NCM) works with physicians to manage large caseloads of individuals with an OUD in an OBOT nested with Community Health Centers (PCPs)
 - The NCM assists all patients in entering the program, monitoring relapse risks, coordinating with addiction treatment agencies, and completing weekly UA tests
 - A stepped care approach is used based on the weekly UA test results
 - Ongoing positive results leads to more intensive services & time with the physician; negative test results lead to reductions in monitoring & counseling

Retention Rates in OBOT – CC Model

Retention rates continues to rise over time

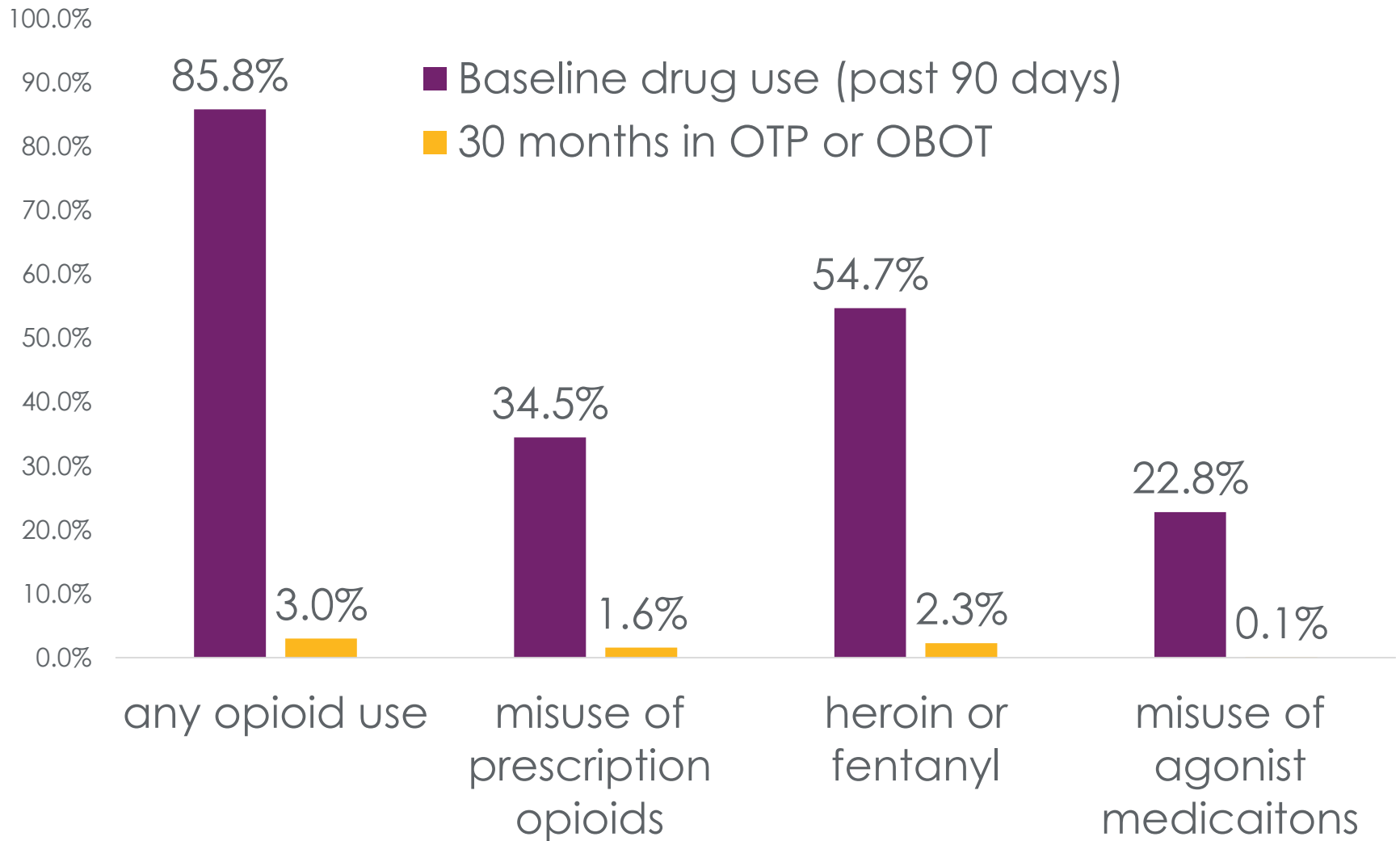


Example: The Hub & Spoke Model

- The Vermont Hub and Spoke Model combines OTP and OBOTs in a stepped care system for individuals with an OUD
 - Results showed a significant decline in fatal overdoses in the state after the model was implemented with no increased cost in addiction treatment
 - Diversion and tx outcomes for a small sample of those who entered the hub & spoke model are displayed in the next slide
 - 40 received OTP methadone
 - 40 received OBOT buprenorphine



Hub & Spoke Model of Stepped Care



Diversion of Prescription Opioids

- Diversion of prescription opioids is common across all classes of opioid prescriptions
 - Diversion of benzodiazepines are as common, across all classes of medications & with diversion of opioids
 - Diversion behaviors are in two categories
 1. Sharing or selling of prescriptions and
 2. Acquiring or purchasing prescription medications without medical oversight
 - Results from SAMHSA NSDUH 2017 survey, 4.1 million individuals in the U.S. misused opioid medications & another 1.7 million misused benzodiazepines and other sedatives

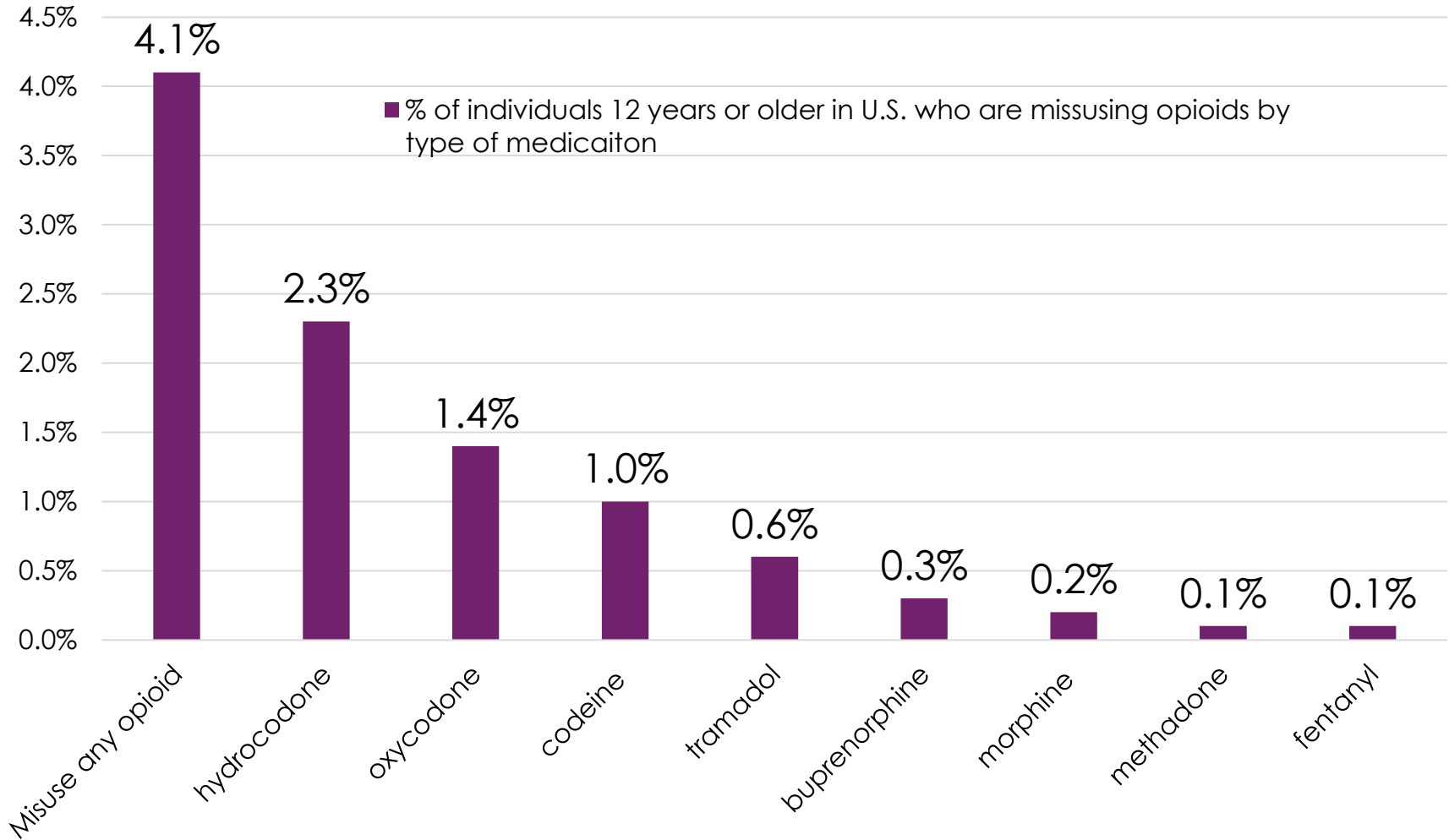


Diversion of Prescription Opioids

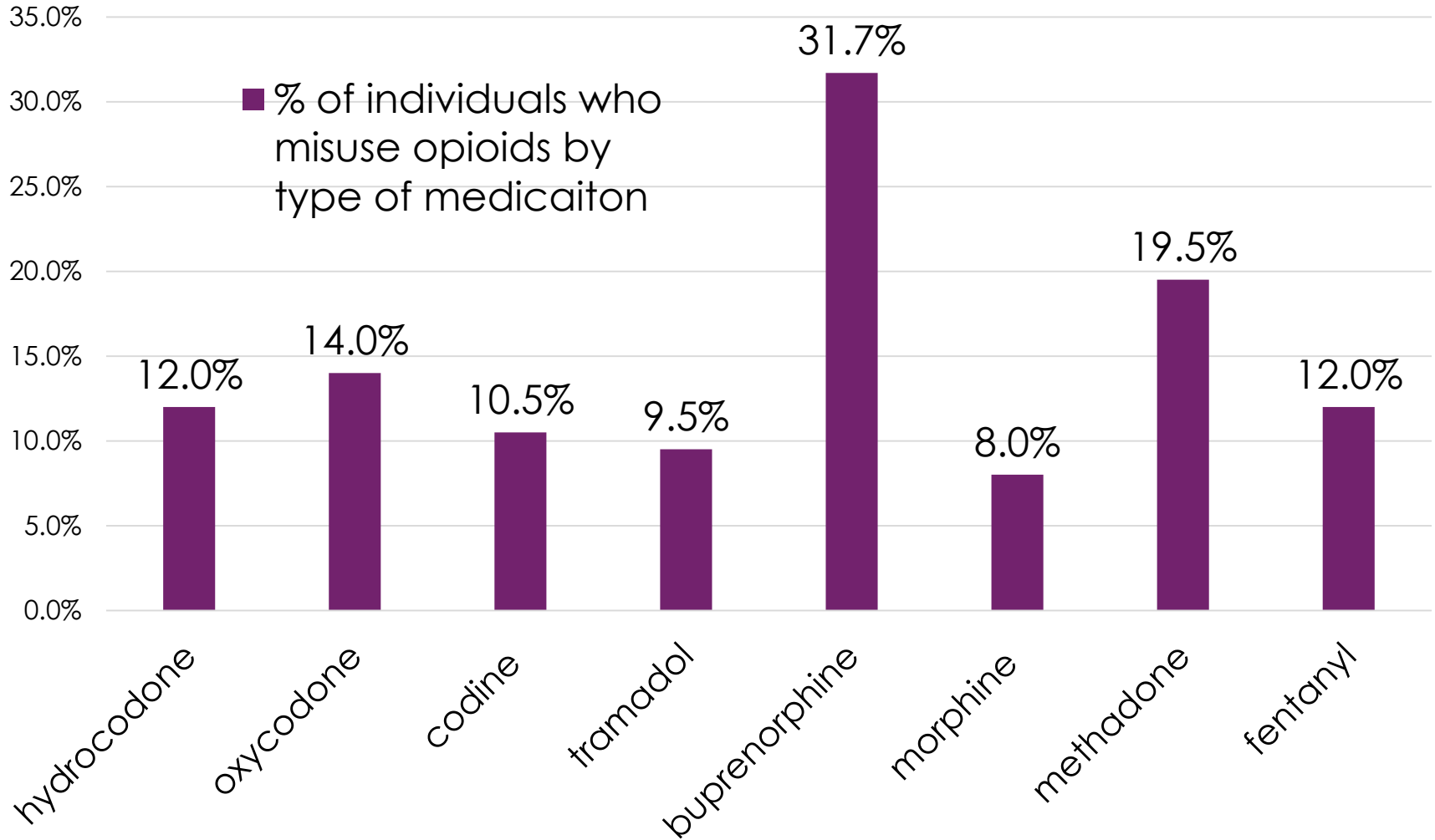
- Diversion of prescription opioids decreases for individuals with an OUD who remain in tx & increase for those who leave or don't seek tx
 - Life-time diversion rates range between 80% to 90% for all individuals with an OUD seeking any addiction tx
 - Individuals who misuse buprenorphine are more likely to use it for its intended purpose; i.e., management of withdrawal symptoms (e.g., 50% to 75%);
 - misuse of more powerful opioids, such as hydrocodone & oxycodone are used to relieve physical pain (63%) or for euphoria (13%)



Diversion of Prescription Opioids 2017



Diversion of Prescription Opioids

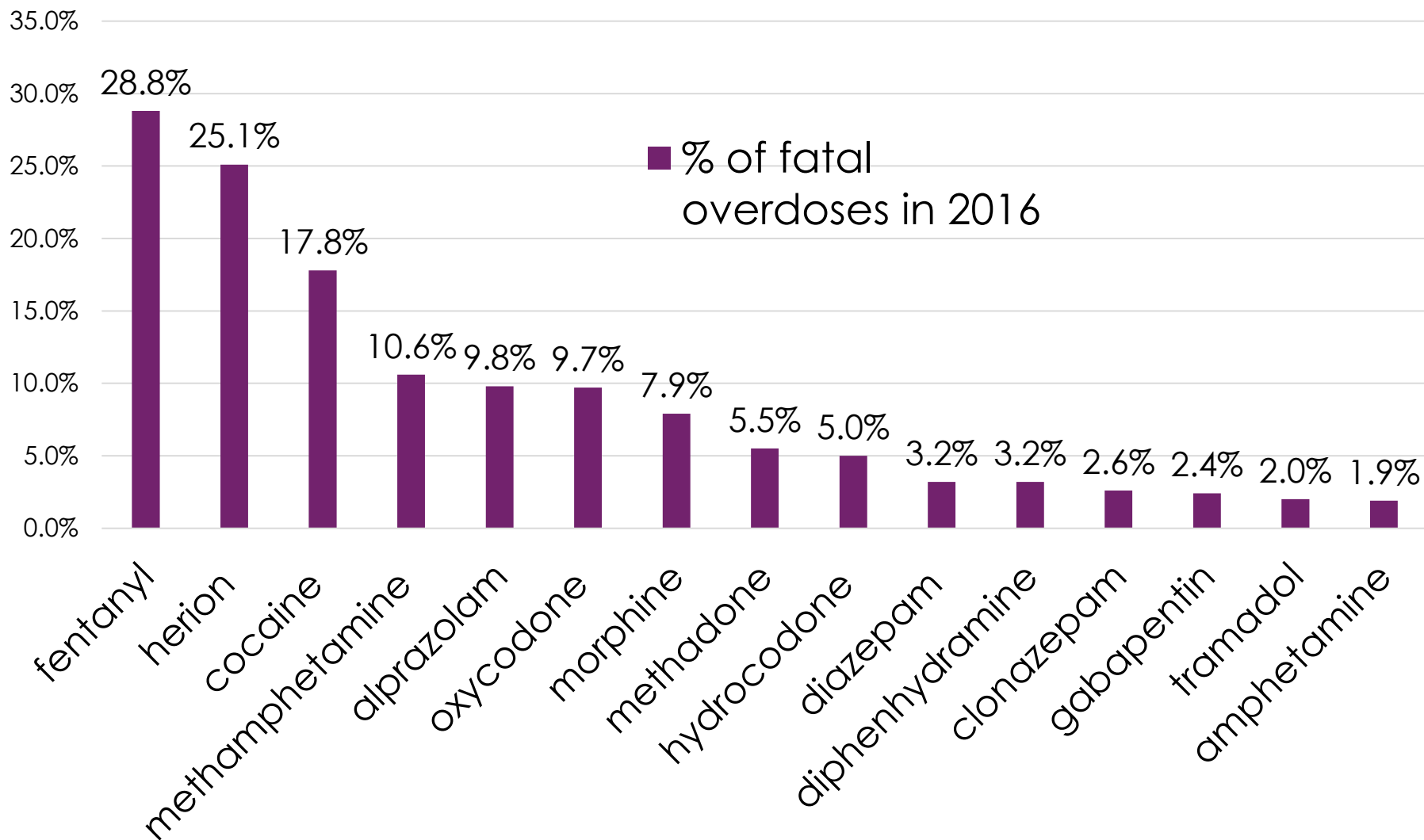


Fatal Overdoses by Type of Drug

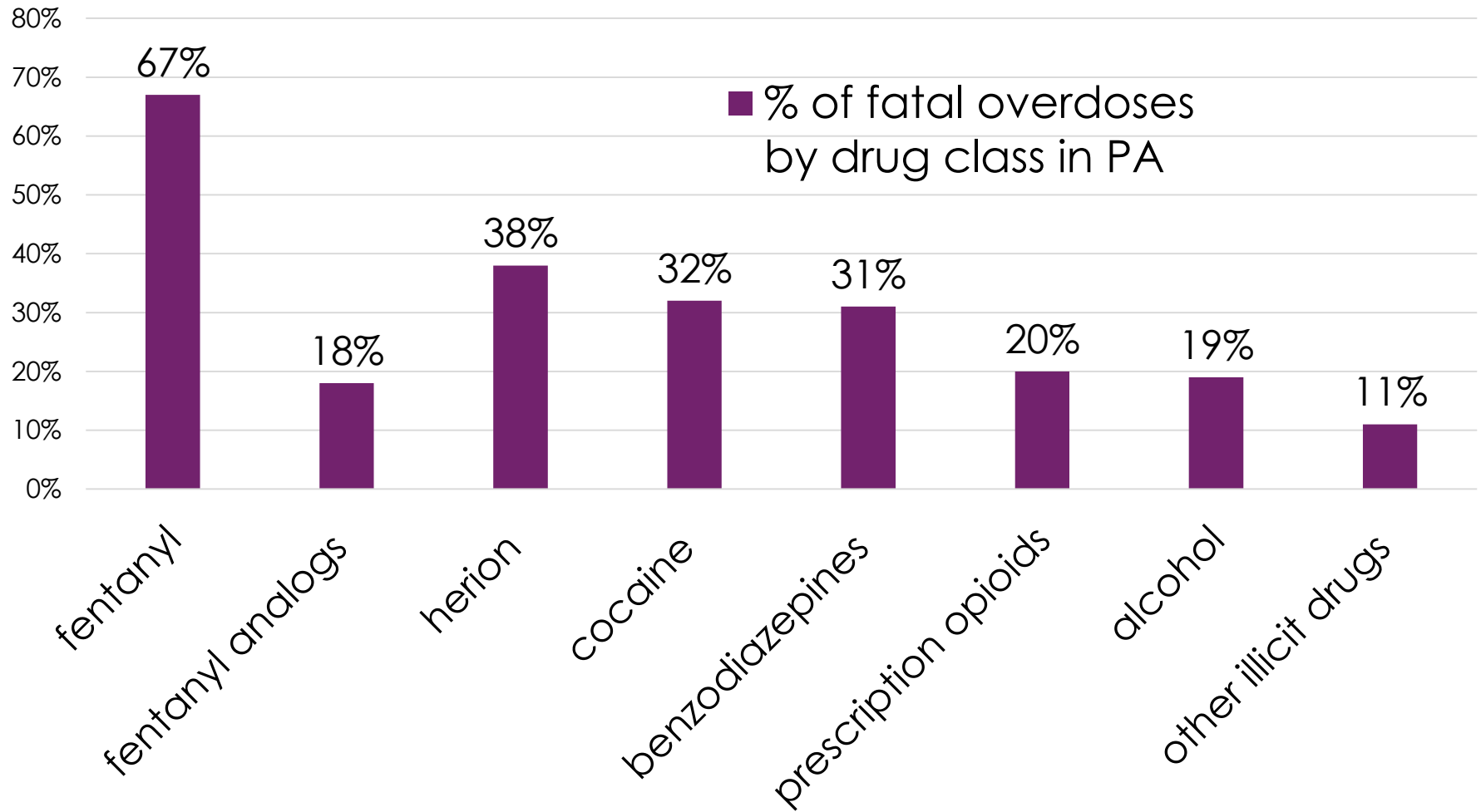
- Overdose rates by medication type or class are noted in the following two slides
 - Buprenorphine is the one opioid medication that is not listed on either slide, as it is rarely associated with a fatal overdose
 - ✓ overdose can occur if combined with other drugs
 - Methadone is listed on both slides, though most fatal overdoses with the medication occurred with individuals being treated for pain, not for those receiving treatment in an OTP
 - ✓ The CDC has recommend that methadone not be used for pain management



% of Overdose Deaths in the U.S. by Primary Drug Type 2016



% of Fatal Overdoses in PA 2017 by Drug Class (DEA Data)

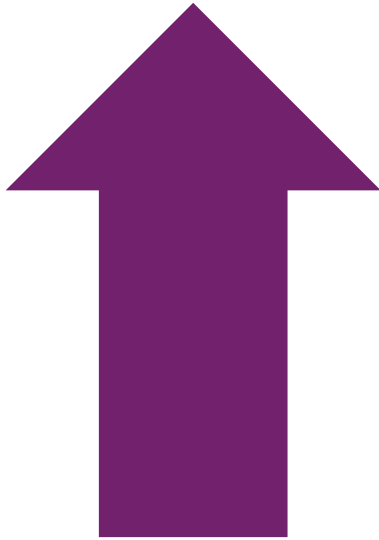


Diversion of Prescription Opioids

- Diversion rates of all opioids are likely to decrease for individuals who remain active in MAT over time,
 - Methadone diversion is due more to non-OTP prescriptions for pain,
 - Methadone diversion rates have been decreasing over time due to restricted use of methadone for pain
- MAT providers that use stepped care models and other strategies to reduce diversion risks are more likely to retain clients over time and reduce the percentage of patients who misuse buprenorphine or methadone (see the next slide)



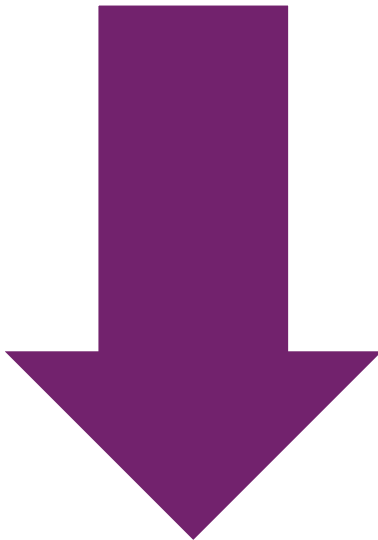
Diversion Risks of BUP in an OBOT



Diversion risk increases with

- ⑩ polysubstance users,
- ⑩ low rate of UA testing,
- ⑩ no access to relapse prevention training,
- ⑩ no use of or access to stepped care models,
- ⑩ monthly prescriptions early in tx,
- ⑩ Low dose of buprenorphine,
- ⑩ No access to daily dosing for monitoring

Average
31.7%



Diversion risks decreases with

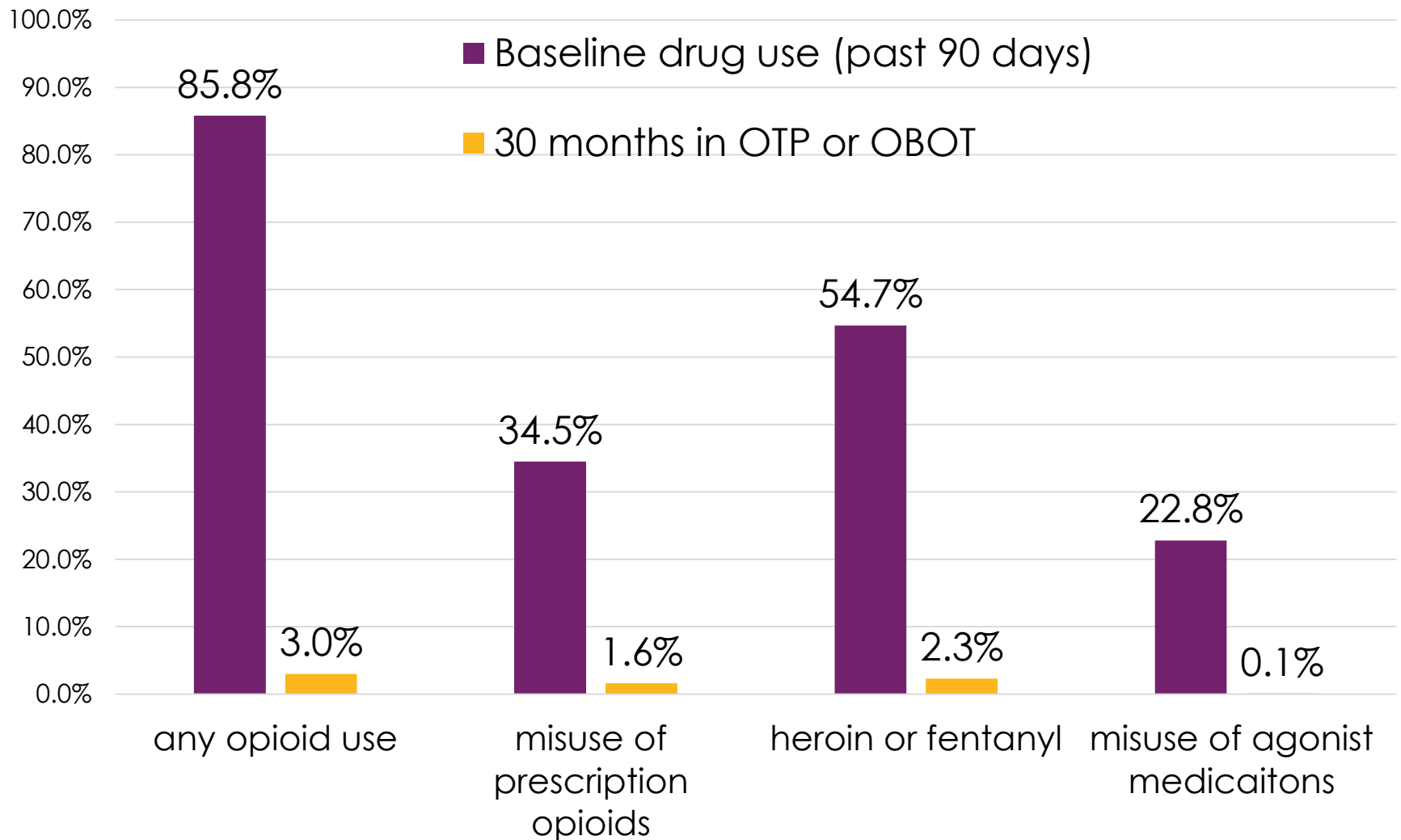
- ⑩ Stepped care models,
- ⑩ Effective dosing of agonist medications,
- ⑩ Use of sublocade or daily, observed dosing when needed,
- ⑩ Weekly UA testing with a registry,
- ⑩ Measurement based care,
- ⑩ Weekly relapse prevention,
- ⑩ Involvement in family,
- ⑩ Weekly PDMP reviews,
- ⑩ Older clients with prior MAT experience



Example: The Hub & Spoke Model

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 - 40 received OTP methadone &
 - 40 received OBOT buprenorphine

Example – Hub & Spoke Model



National References on MAT

- An updated research summary on the benefits of MAT for OUD can be found in the National Academies Press (NAP, 2019). ***Medications for Opioid Use Disorder Save Lives*** at <https://www.nap.edu/catalog/25310/medications-for-opioid-use-disorder-save-lives>
- An updated report on effective treatment for people with an OUD from the U.S. Department of Health and Human Services (DHHS) - ***Facing Addiction in America: The Surgeon General's Spotlight on Opioids (2018)*** can be found at https://addiction.surgeongeneral.gov/sites/default/files/OC_SpotlightOnOpioids.pdf



National References on MAT

- SAMHSA's recent publication on MAT referred to as TIP 63: ***Medications for Opioid Use Disorder*** can be found at <https://www.store.samhsa.gov/product/TIP-63-Medications-for-Opioid-Use-Disorder-Full-Document-Including-Executive-Summary-and-Parts-1-5-/SMA18-5063FULLDOC>
- SAMHSA's recent publication: ***Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants (2018)*** can be found at <https://store.samhsa.gov/product/Clinical-Guidance-for-Treating-Pregnant-and-Parenting-Women-With-Opioid-Use-Disorder-and-Their-Infants/SMA18-5054>



National References on MAT

- National Institute of Drug Abuse (NIDA) updated research summary of MAT for OUD: ***Medications to Treat Opioid Use Disorder (2018)*** can be found at https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/21349-medications-to-treat-opioid-use-disorder_o.pdf
- Community Care provides a literature review on the risk of tapering individuals off of agonist medications: ***Results of Detoxification or Tapering Protocols for Individuals with an OUD***, which can be downloaded at <https://www.ccbh.com/pdfs/Providers/healthchoices/articles/DetoxificationOUD.pdf>

Questions about the Research Noted

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