



Building a Healthy Boston

DATA BRIEF: Racial/Ethnic Differences in Accessing Substance Use Disorder Treatment Following an Opioid Overdose in Massachusetts and Boston

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Background

It is critical that individuals with opioid use disorder (OUD) be able to access treatment, in order to improve their quality of life and reduce associated risks including overdose and mortality. Health equity demands that the treatment system should be accessible to those who need it, regardless of one's race, ethnicity, or membership in other marginalized populations. Thus, assessing treatment access equity requires comparing measures of need (who should be getting treatment) with measures of access (who is actually getting treatment).

Who gets treatment is relatively easy to track: population-based treatment rates can describe differences among those who have successfully accessed the treatment system. However, these rates give no insight into levels of need; they cannot distinguish between a population with low rates of SUD treatment due to underlying low rates of SUD and a population with low rates of SUD treatment but a high unmet need. Nor do treatment rates distinguish between unmet needs due to inequitably distributed resources and those related to unwillingness or inability to engage the treatment system in the first place. Prior to Massachusetts Public Health Data Warehouse (PHD), there were few options for quantifying total population-level need for treatment and as a result, inequities in SUD treatment access have remained largely unexplored and indescribable.

However, the linked datasets available in PHD provide at least one partial solution to this problem: using overdose-related hospital admission as a measure of need, and post-overdose access of SUD treatment as a measure of access. The hospital care setting represents just a small portion of those who could benefit from substance misuse treatment services; nonetheless, the severity of their diagnosis (i.e., overdose requiring hospital care), combined with their elevated risk of subsequent fatal overdose, leaves no doubt that these individuals are in need of treatment services. This brief uses PHD's linked datasets to determine whether, among a group of people who all needed treatment for opioid misuse, there were any significant differences in who in fact accessed that treatment.

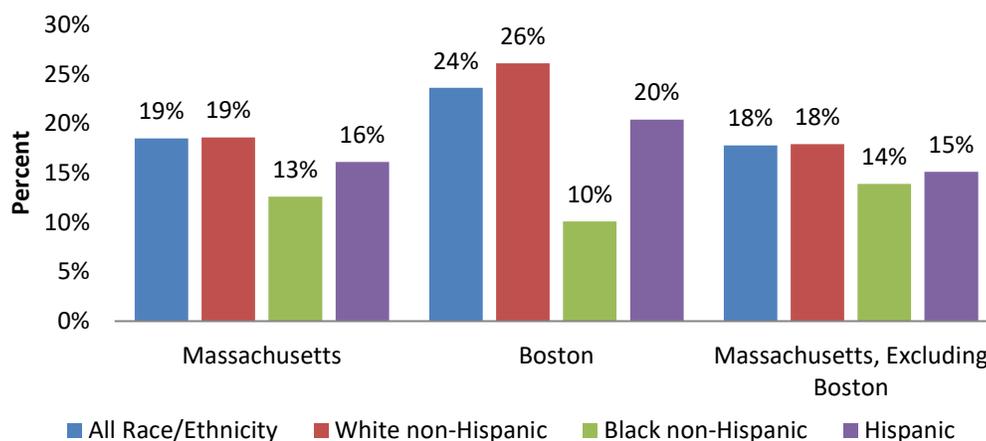
Results

This study used the PHD linked data to assess potential racial/ethnic differences in accessing subsequent SUD treatment among those presenting to acute care hospitals due to an opioid overdose.

There were 32,961 hospital patient encounters (HPEs) for opioid overdoses (OODs) among all Massachusetts residents during the study period (2011-2015); Boston residents accounted for 3,694 of these.

Among Massachusetts residents as a whole, the percentage of OOD HPEs resulting in substance misuse treatment within 30 days of discharge was higher for encounters involving White (19%) residents and lower for Black (13%) and Hispanic (16%) residents. Among Boston residents, this difference was even more pronounced: 26% of HPEs involving White residents resulted in accessing substance misuse treatment within 30 days, compared to just 10% of those involving Black residents and 20% of those involving Hispanic residents.

Figure 1: Percent of Hospital Patient Encounters for Opioid-related Overdose Resulting in Substance Misuse Treatment in 30 Days, by Race/Ethnicity* and Location: 2011-2015



*Percentages for Other race/ethnicity not shown due to data limitations

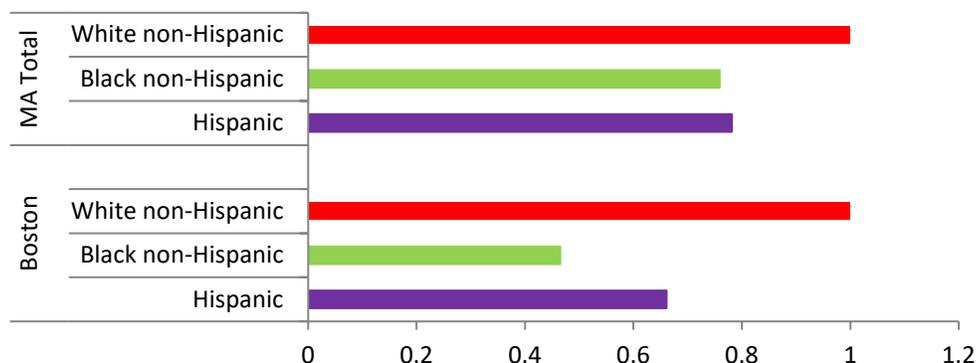
Adjusting for important risk factors, the odds of receiving subsequent substance misuse treatment within 30 days following a HPE for OOD were 24% and 22% lower, respectively, for Black and Hispanic residents throughout Massachusetts in comparison to their White counterparts; these differences were statistically significant ($p < 0.05$). Among Boston residents, the odds of receiving subsequent treatment within 30 days following a HPE for OOD was 49% lower for Black residents and 31% lower for Hispanic residents in comparison with White residents adjusting for other important risk factors; the difference for Black residents was statistically significant ($p < 0.05$) and the difference for Hispanic residents was borderline statistically significant ($p = .054$).

Geography also played a role independent of race in the likelihood of receiving timely substance misuse treatment post-discharge. The odds of receiving subsequent treatment were 40% higher among Boston residents than for Massachusetts residents outside of Boston, which was statistically significant. Additionally, compared to non-Boston White residents, Boston White residents had 47% higher odds of accessing treatment, and this difference was statistically significant.

Though not the case for Hispanic residents, the decreased likelihood in subsequent substance misuse treatment following OOD for Black Massachusetts residents compared to their White counterparts appears largely driven by the experience of Boston residents, most of whom presumably accessed their treatment in Boston. This finding is supported by the fact that the difference in accessing substance

misuse treatment between Black and White residents was not significant when you look at Massachusetts excluding Boston (data not shown). By comparison, the decreased likelihood among Hispanic residents was significant for Massachusetts excluding Boston (data not shown) and borderline

Figure 2: Odds of receiving subsequent substance use treatment within 30 days following a hospital patient encounter for opioid overdose: 2011-2015



significant for Boston.

Other factors shown to be associated with higher odds of receiving subsequent treatment include enrollment in MassHealth (in comparison with no insurance), prior substance misuse treatment, history of incarceration, and history of homelessness.

Conclusions

Black and Hispanic residents in Massachusetts were 24% and 22%, respectively, less likely to receive substance misuse treatment within 30 days following hospital-related care for OOD in comparison with White residents, while Black and Hispanic residents in Boston were 49% and 31%, respectively, less likely to received similar treatment in comparison with White residents. These findings were robust to adjustments for sociodemographic characteristics and important risk factors.

There are likely many known and unknown explanatory factors impacting treatment access rates and observed racial/ethnic differences, any number of which could be entirely independent of the existing hospital and treatment care systems. Given the substantial racial/ethnic inequities observed in this analysis, the public health policy, program planning, and epidemiology communities should further investigate the roles of other factors influencing these differences and whether further policy interventions are warranted to address these factors.

These results highlight the importance of racial/ethnic data and need for further investigation to build our collective understanding of the factors we have already identified – i.e. race/ethnicity and location- and, in the short term, for improved outreach and referral strategies to promote equitable access to recovery services within the publicly-supported substance use disorder treatment system in Massachusetts.

Methods

We conducted a retrospective cohort study of acute care hospital encounters for non-fatal opioid overdose (OOD) and subsequent admissions for substance misuse treatment within 30 days using the Massachusetts Department of Public Health Data Warehouse (PHD), as authorized under [M.G.L c. 111 s. 237](#). PHD data included in this analysis include: the Acute Care Hospital Case Mix, the Bureau of Substance Addiction Services (BSAS) treatment admissions dataset, and other demographic data sets. The analysis sample consists of all acute care hospital patients encounters (HPEs, as identified within the Case Mix data including hospital inpatient, emergency department, and outpatient observation discharges) for OOD between 2011 and 2015 among Massachusetts residents with complete information on socio-demographics and other important risk factors.

We then examined whether individuals with an overdose-related HPE were admitted into a substance misuse treatment program (of any modality) within 30 days of discharge. To examine the association between race/ethnicity and subsequent substance misuse treatment admission within 30 days of discharge, we modeled subsequent treatment admission as a function of race/ethnicity in logistic regression accounting for multiple HPEs within individual. This logistic regression model contained the following covariates at time of HPE: age, sex, residence (Boston, Massachusetts excluding Boston) hospital setting, prior history of substance misuse treatment, health insurance coverage, history of incarceration, and history of homelessness. We also repeated the logistic regression model that included an interaction term between residence and race/ethnicity, which permitted comparisons across categories of race/ethnicity within residence subgroup, and comparisons across categories of residence within race/ethnicity subgroup.

Based on observed differences in racial/ethnic identification between the hospital Case Mix data and the BSAS treatment data, we estimate results for Hispanic residents likely reflect approximately two-thirds of actual Hispanic residents in the Case Mix cohort with the remaining third largely categorized as Other race/ethnicity group (data not shown) within the Case Mix data. This likely misclassification of a sizeable portion of Hispanic opioid overdose patients highlights a need to improve race and ethnicity data collection for OOD hospital patients overall and to exercise caution when interpreting results for Hispanic residents. Nevertheless, the effect for the identified Hispanic residents was significant statewide and borderline significant for those living in Boston, underscoring a further need to better understand factors influencing these observed differences.