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January 8th, 2023

Steven T. James
House Clerk
State House Room 145
Boston, MA 02133

Michael D. Hurley
Senate Clerk
State House Room 335
Boston, MA 02133

Dear Mr. Clerk,

Pursuant to Chapter 111 Section 237 of the General Laws, please find enclosed a report from the Department of Public Health entitled "2023 Report on Priority Public Health Trends from the Public Health Data Warehouse."

Sincerely,


Robert Goldstein, MD, PHD
Commissioner
Department of Public Health

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LIEUTENANT GOVERNOR



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SECRETARY

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COMMISSIONER

2023 Report on Priority Public Health Trends from the Public Health Data Warehouse

December 2023

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Legislative Mandate

The following report is issued pursuant to Chapter 111 Section 237 of the General Laws, which states:

Section 237. The commissioner shall collect, record and analyze data, and shall assemble and maintain data systems, necessary to analyze population health trends. The commissioner shall give priority to analyzing fatal and nonfatal opiate overdoses. The commissioner may identify and determine additional priorities for the reduction of morbidity and mortality.

Notwithstanding section 74 of chapter 6, sections 16 to 16Y, inclusive, of chapter 6A, chapter 12C, chapter 19A, chapter 46, chapter 94C, chapters 111 to 111O, inclusive, chapter 112, chapter 118E, chapter 119, chapter 120, chapter 123, and chapter 123B, the center for health information analysis and any office or agency within the executive branch shall provide, upon request from the commissioner, information necessary to conduct the analysis required by this section if the provision of such information is otherwise consistent with federal and state law. The commissioner may request from any office or agency within the judicial branch, and any such office or agency may provide, information necessary to conduct this analysis required by this section if the provision of such information is otherwise consistent with federal and state law.

The commissioner shall develop policies and procedures for the governance of such data and data systems, which shall include provisions for confidentiality and security. Information or data provided or accessed under this section shall be confidential, shall not be used to identify any individual and shall be used solely for the conduct of analysis pursuant to this section. Such information or data shall not be considered a public record, shall be exempt from disclosure under section 10 of chapter 66 and shall not be subject to subpoena or discovery or admissible as evidence in any action of any kind in any court or before any other tribunal, board, agency or person. All resulting reports shall provide data in an aggregate and de-identified format.

The commissioner shall, not less than biennially, prepare and submit a report on priority public health trends. *The report shall be publicly available and shall be filed with clerks of the senate and the house of representatives, the house and senate chairs of the joint committee on mental health, substance use and recovery, the house and senate chairs of the joint committee on public health and the house and senate chairs of the joint committee on health care financing.*

The commissioner may promulgate regulations to implement this section.

Executive Summary

The Massachusetts Department of Public Health (DPH) submits this report to the legislature to provide an update on its activities to bring timely, multi-sector data into the Public Health Data Warehouse (PHD) and present results of ongoing analyses of priority population health trends using the PHD. Per the statutory authority, the Commissioner of Public Health has determined the following priorities for the reduction of morbidity and mortality, for which the PHD can be used:

1. Trends among the population of persons affected by substance use disorders and specifically opioid use disorder, including fatal and nonfatal opioid overdoses.
2. Trends related to maternal and child health in the Commonwealth.
3. Trends related to the impact of COVID-19 on morbidity and mortality in the Commonwealth, including intersections with other PHD Priorities.
4. Trends related to the impact of climate change on morbidity and mortality in the Commonwealth, including intersections with other PHD Priorities.

This report includes the results of analyses related to the first two priorities. DPH is bringing key COVID-19 datasets pertaining to cases and immunizations into the PHD and plans to begin analyses related to COVID-19 in early 2024. The priority associated with climate change was recently added, and DPH is in the planning phases related to understanding what data needs to be included in the PHD to address this topic.

Introduction

The [Public Health Data Warehouse](#) is a truly unique public health data analysis tool that links multiple data sets across state and local government to help address public health priorities. It is a nationally recognized innovation that is proven effective for accelerating data analysis and disseminating actionable information to guide the Commonwealth's response to priority public health issues.

The PHD currently includes over five billion records, with data from 2011 through 2022, of 81 data components coming from 33 distinct sources. These records are processed by the Special Analytic Projects Unit within the Office of Population Health at DPH to create 24 individually linkable datasets, 19 community-level datasets, and four lookup tables. Table 1 lists all datasets and years currently included in the PHD.

Table 1: Datasets, State Agency Partners, and Current Years of Data Available for the Public Health Data Warehouse

	Datasets	State Agency	Years of data available
INDIVIDUAL LEVEL DATA	1. Acute Care Hospital Discharge Data (Case Mix)	CHIA	2011-2022
	2. All Payer Claims Database	CHIA	2014-2021
	3. Bureau of Family Health and Nutrition: Early Intervention	DPH	2011-2017
	4. Bureau of Family Health and Nutrition: WIC Program	DPH	2011-2022
	5. Bureau of Infectious Diseases and Laboratory Sciences: Hepatitis A Surveillance Data	DPH	2011-2021
	6. Bureau of Infectious Diseases and Laboratory Sciences: Hepatitis C Surveillance Data	DPH	2011-2021
	7. Bureau of Infectious Diseases and Laboratory Sciences: HIV Surveillance Data	DPH	2013-2021
	8. Bureau of Substance Addiction Services Treatment Data	DPH	2011-2022
	9. Executive Office of Housing and Livable Communities: Emergency Assistance Program Data	EOHLC	2010-2022
	10. Department of Industrial Accidents: Workers Compensation	DIA	2011-2020
	11. Department of Mental Health: Treatment Data	DMH	2011-2022
	12. Department of Correction: Prison Data	DOC	2011-2022
	13. Department of Transitional Assistance: SNAP Benefits Data	DTA	2011-2020
	14. Executive Office of Veterans' Services Benefits Data	EOVS	2011-2020
	15. Essex County Jail Data	MSA	2011-2020
	16. Franklin County Jail Data	MSA	2011-2022
	17. Hampden County Jail Data	MSA	2011-2021
	18. Hampshire County Jail Data	MSA	2011-2022
	19. HOC MOUD Program	DPH	2019-2020
	20. Massachusetts Cancer Registry: Cancer Incidence Data	DPH	2011-2019
	21. Middlesex County Jail Data	MSA	2011-2020
	22. Norfolk County Jail Data	MSA	2011-2021
	23. Office of the Chief Medical Examiner: Circumstances of Death Data	OCME	2014-2021
	24. Office of the Chief Medical Examiner: Postmortem Toxicology Data	OCME	2014-2021
	25. Office of Emergency Medical Services: Massachusetts Ambulance Trip Record Information System	DPH	2013-2021
	26. Plymouth County Jail Data	MSA	2011-2022
	27. Prescription Monitoring Program	DPH	2011-2022
	28. Registry of Vital Records and Statistics Dataset: Birth Certificates	DPH	2011-2021
	29. Registry of Vital Records and Statistics Dataset: Death Certificates	DPH	2011-2021
	30. Registry of Vital Records and Statistics Dataset: Fetal Death Certificates	DPH	2011-2021
	31. Suffolk County Jail Data	MSA	2011-2021
	32. Worcester County Jail Data	MSA	2011-2022
COMMUNITY LEVEL DATA	33. High Intensity Drug Trafficking Areas Drug Seizure Data	HIDTA	2019-2022
	34. Index of Concentration at the Extremes Measures (spatial social polarization metric)	ACS (US Census)	2014-2018
	35. Overdose Education and Naloxone Distribution Program: First Responder Naloxone Data	DPH	2011-2020
	36. Overdose Education and Naloxone Distribution Program: Naloxone Enrollments	DPH	2011-2020
	37. Overdose Education and Naloxone Distribution Program: Naloxone Refills	DPH	2011-2020
	38. Overdose Education and Naloxone Distribution Program: Naloxone Rescues	DPH	2011-2020
	39. UMASS Donahue Institute and American Community Survey: Population Estimates	ACS (UMass)	2011-2020

DPH continues to leverage its public/private collaboration model to conduct analyses that enable us to use data to guide action in response to ongoing public health challenges.

Priority Public Health Trends: Substance Use

Core Public Health Surveillance

Background

Building upon previous work,^{1,2,3} the Special Analytic Projects Unit has refined, updated, and expanded our estimates of the prevalence of opioid use disorder (OUD). This previous work demonstrated that by 2015, the prevalence of OUD in the general Massachusetts population was 4.6%, however, since the original work had been done quite some time ago, we did not know if the prevalence of OUD has changed since then. Also unknown was how the intersectionality of race/ethnicity and binary sex impacts the diagnosis and prevalence of OUD at the population level. Understanding the prevalence of OUD at the intersection of sex and race/ethnicity is essential to appropriately scale focused interventions that reduce morbidity and mortality.

Accurate surveillance of nonfatal opioid-related overdose (NFO) is difficult. These events are often reported only when a patient receives medical services, such as ambulance trips, emergency department visits, or hospitalization; and many individuals experiencing a NFO do not receive such medical care. By leveraging the PHD, we were able to refine our previous definitions of NFO⁴ to update counts and better characterize Massachusetts residents who experienced at least one documented NFO from 2013 through 2020.

Data Points

- The estimated prevalence of OUD in Massachusetts among persons ages 18 to 64 increased from 5.5% in 2014 to 5.8% in 2020.

¹ Massachusetts Department of Public Health. (2019, November). Impact of the Opioid Epidemic on High-Risk Populations and Maternal Health: Results from the Public Health Data Warehouse. <https://www.mass.gov/doc/phd-2019-legislative-report-0/download>

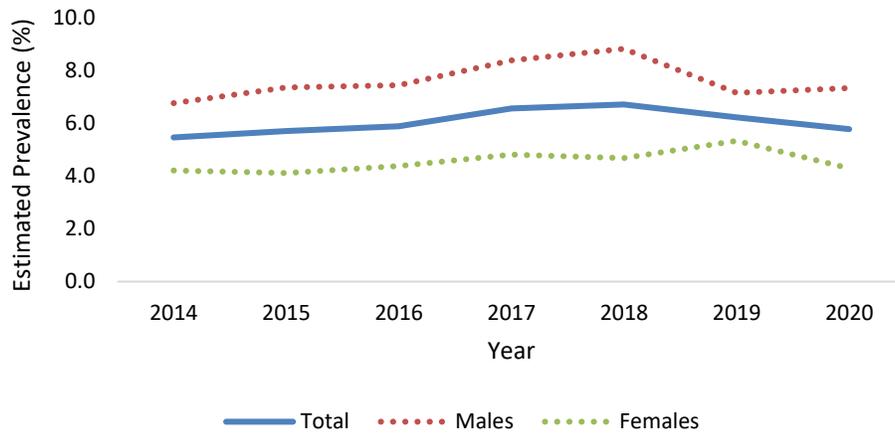
² Massachusetts Department of Public Health. (2017, August). An Assessment of Fatal and Nonfatal Opioid Overdoses in Massachusetts (2011 – 2015). <https://www.mass.gov/doc/phd-2017-legislative-report0/download>

³ Barocas JA, White LF, Wang J, et al. Estimated Prevalence of Opioid Use Disorder in Massachusetts, 2011–2015: A Capture–Recapture Analysis. *Am J Public Health*. 2018;108(12):1675-1681. doi:10.2105/AJPH.2018.304673

⁴ Massachusetts Department of Public Health. (2017, August). An Assessment of Fatal and Nonfatal Opioid Overdoses in Massachusetts (2011 – 2015). <https://www.mass.gov/doc/phd-2017-legislative-report0/download>

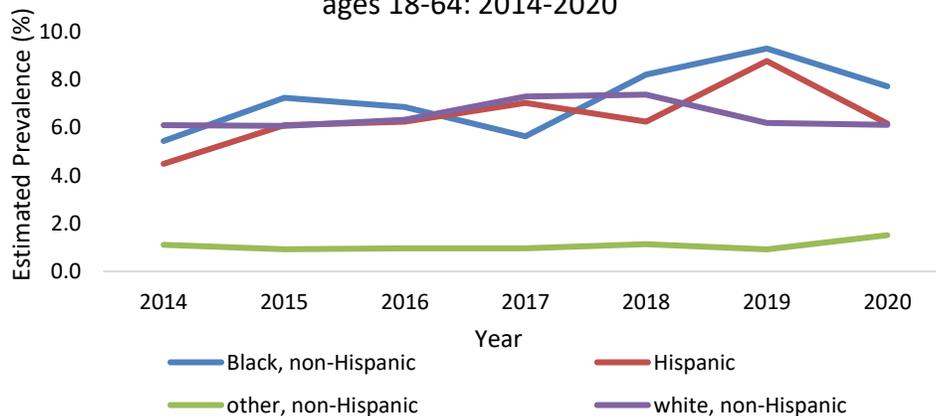
- The estimated prevalence among male residents increased from 6.8% in 2014 to 7.3% in 2020.
- The estimated prevalence among female residents increased from 4.2% in 2014 to 4.3% in 2020.

Figure 1: Estimated prevalence of opioid use disorder by sex, Massachusetts residents ages 18-64: 2014-2020



- The estimated prevalence increased significantly for Black non-Hispanic (from 5.4% in 2014 to 8.5% in 2020) and Hispanic residents (from 4.5% in 2014 to 6.6% in 2020). However, the estimated prevalence remained relatively stable for white non-Hispanic residents (6.12% in 2014 and 6.23% in 2020) and residents of other races (2.09% in 2014 to 2.02% in 2020).

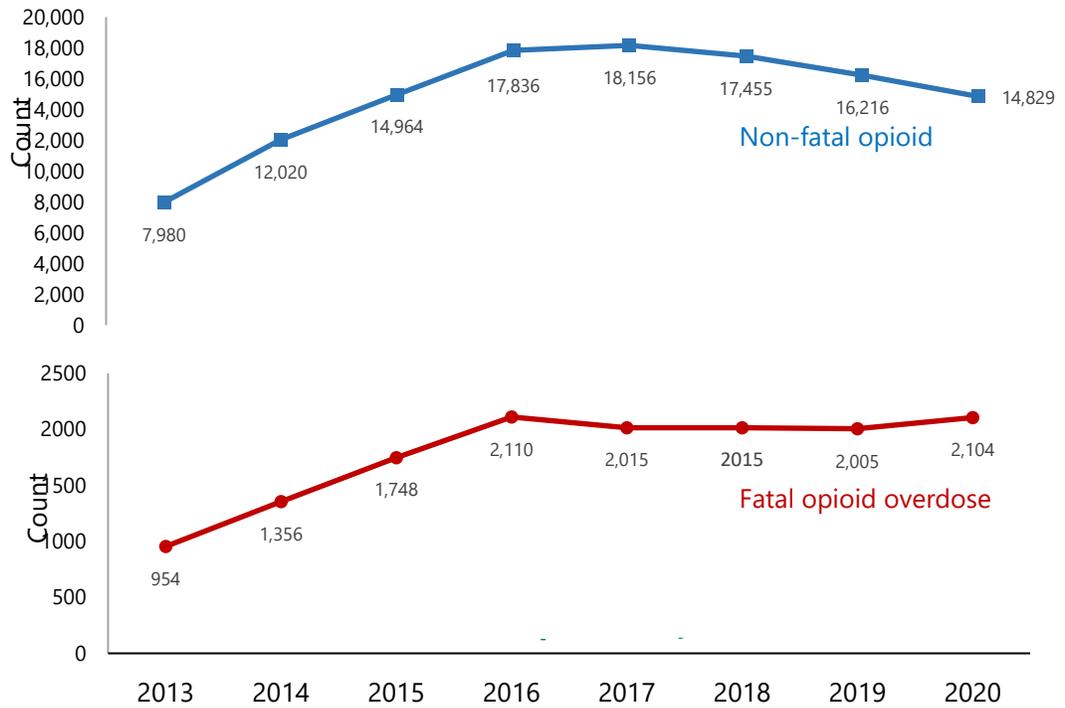
Figure 2: Estimated prevalence of opioid use disorder by race* and Hispanic ethnicity, Massachusetts residents ages 18-64: 2014-2020



*Other includes Asian/Pacific Islander and American Indian/Alaska Natives

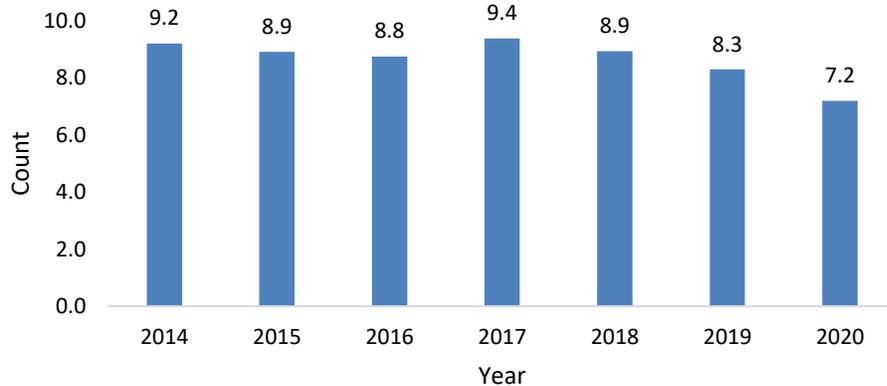
- The number of NFOs increased 130% from 2013 to 2017 and then decreased 18% from 2017 to 2020.

Figure 3. Count of fatal and non-fatal opioid-related overdoses
Massachusetts residents: 2013-2020



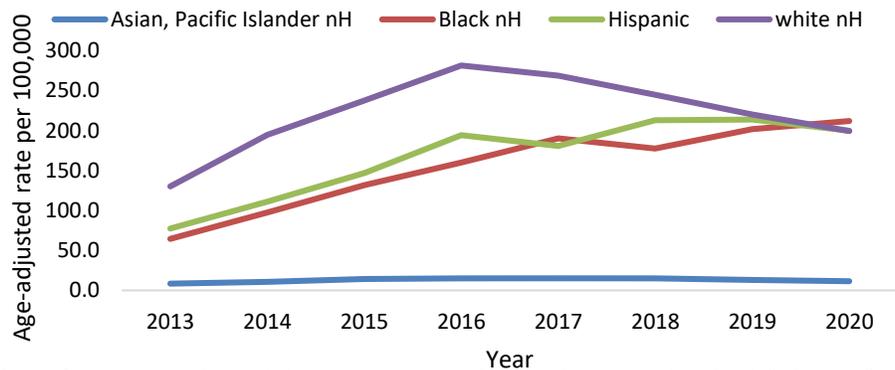
- In 2014, there were approximately 9 NFOs for every fatal opioid overdose; in 2020, there were just over 7 NFOs per fatal opioid overdose.

Figure 4: Count of nonfatal opioid-related overdoses per
fatal opioid-related overdose, Massachusetts residents:
2014-2020



- From 2017 through 2020, the age-adjusted NFO rates for Black non-Hispanic and Hispanic residents increased 11% (from 190.3 to 211.9 per 100,000 and 180.5 to 199.8 per 100,000, respectively). The age-adjusted NFO rates for white non-Hispanic residents decreased by 26% (from 268.6 to 199.2 per 100,000) during the same period. Age-adjusted NFO rates for American Indian/Alaska Native residents are not shown in these figures because they are combined with ‘Other’ races in the PHD.

Figure 5: Age-adjusted rate of nonfatal opioid-related overdose by race* and Hispanic ethnicity, Massachusetts residents: 2013-2020



*Rates for American Indian and Alaska Natives are not shown as they are combined with “other race” in the PHD; nH=non-Hispanic

Key Takeaways

- OUD prevalence has increased steadily in Massachusetts since 2014.
- For female and racially minoritized residents, OUD prevalence has increased more dramatically than for males and white non-Hispanic residents.

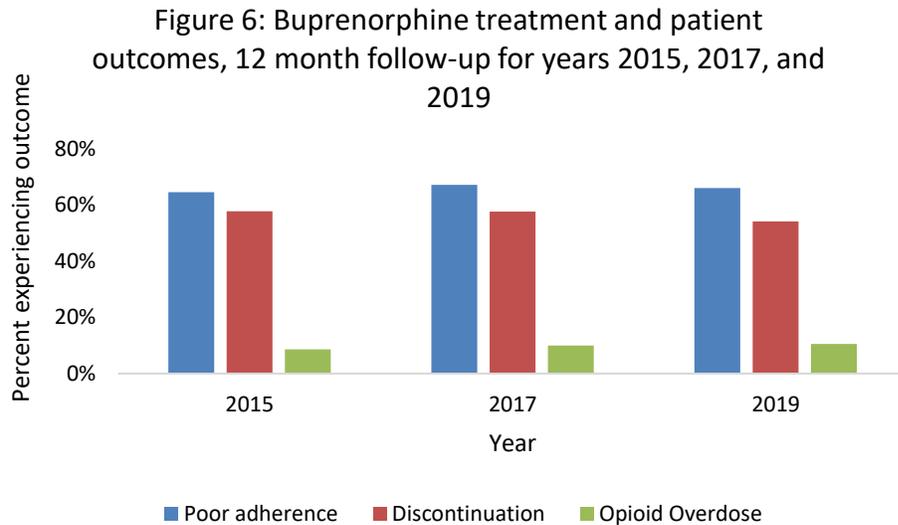
Medications for Opioid Use Disorder (MOUD)

Background

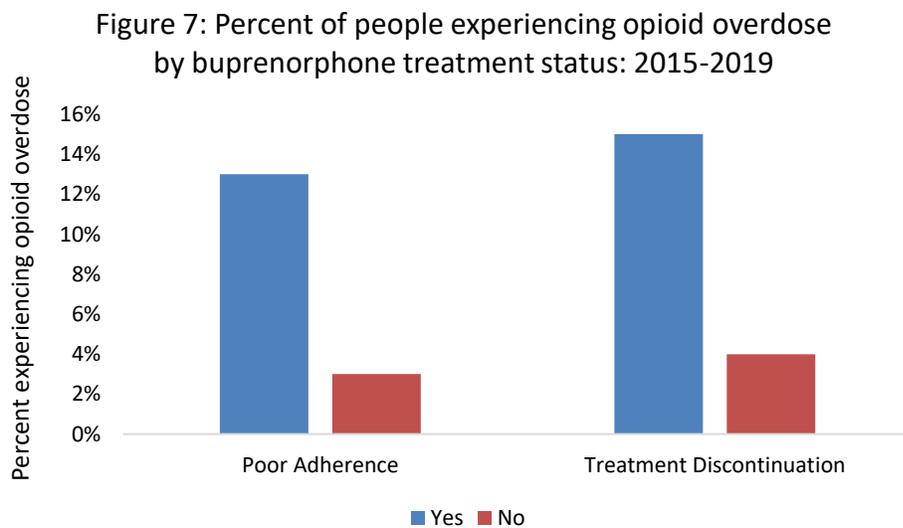
There are three medications approved by the Food and Drug Administration for the treatment of OUD: buprenorphine, methadone, and naltrexone. As part of DPH’s ongoing efforts to address the opioid crisis, we continue to analyze trends related to the use of MOUD among Massachusetts residents. We analyzed buprenorphine use, adherence, and discontinuation for all Massachusetts residents; evaluated the association between pre-release buprenorphine treatment implementation in the Department of Corrections (DOC) and post-release receipt of MOUD, opioid overdose, and all-cause mortality; and characterized MOUD treatment among people hospitalized for a Serious Injection Related Infection (SIRI).

Data Points

- Between 2015 and 2019, 60,203 individuals began buprenorphine treatment for OUD. During the 12-month follow-up period, approximately 66% of these individuals had poor medication adherence (defined as a gap in medication of 7 or more days), and 56% discontinued treatment.



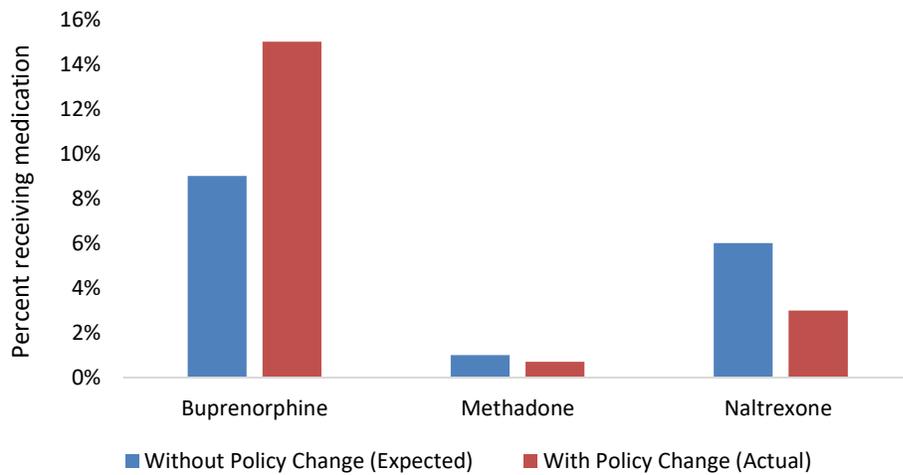
- Individuals with poor buprenorphine adherence during the first 180 days of treatment were more than four times as likely to experience an opioid-related overdose in the following 12 months than those with good buprenorphine adherence (13% vs. 3%). Individuals who discontinued buprenorphine treatment within 12 months of starting were also much more likely to experience an opioid-related overdose than those who adhered to treatment during the study period (15% vs. 4%).



- In December 2019 (9 months after the MA DOC implemented buprenorphine), the proportion of males who received buprenorphine at release increased from an expected

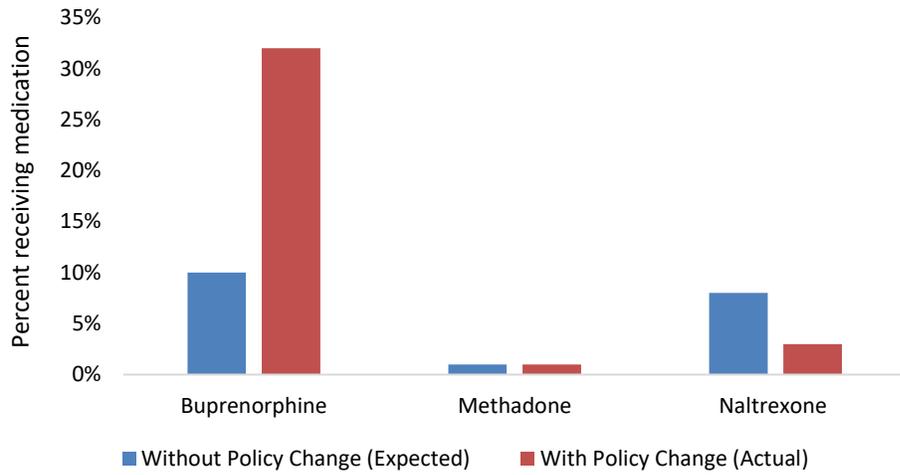
9% (i.e., what would have happened without the buprenorphine policy change) to 15% (i.e., what happened with the policy change). Naltrexone receipt at release was lower than expected after the buprenorphine policy change (6% expected with no policy change versus 3% observed with policy change). Methadone receipt did not substantially change from what was expected (expected was 1%, observed was 0.7%). Despite the observed decrease in naltrexone receipt, overall rates of MOUD receipt at release increased after of implementing the buprenorphine policy. The policy change was not associated with a change in post-release opioid-related overdoses (within eight weeks after release), which affected approximately 2% of male monthly releases. However, there was a decrease in all-cause mortality from the expected 3% to 2%.

Figure 8: Cumulative effects of buprenorphine implementation in DOC by end of 2019 for males



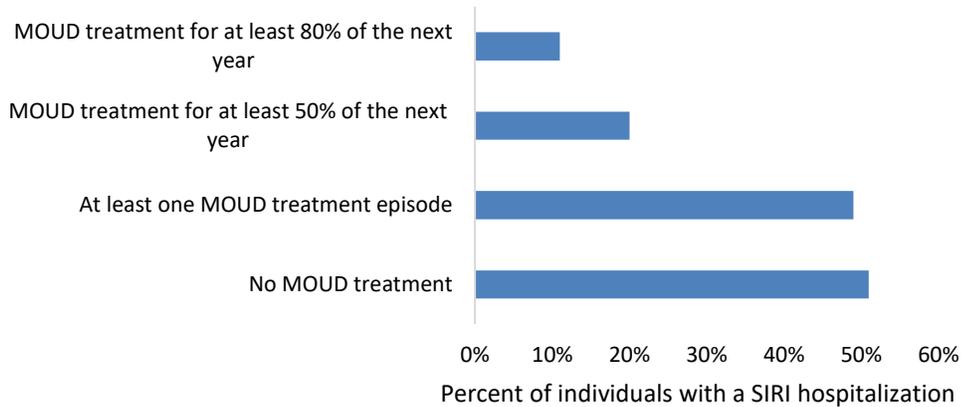
- Among females released from DOC by October 2019 (7 months after buprenorphine was implemented), the proportion who received buprenorphine increased from an expected 10% (without the policy change) to 32% (with the policy change), while naltrexone receipt decreased from the expected 8% to 4%. Methadone receipt was 1% and did not change from the expected. The policy change may have been associated with a decrease in post-release opioid-related overdoses from the expected 7% to 5% (but this result was not statistically significant), and there was no change in all-cause mortality, which remained at 2%.

Figure 9: Cumulative effects of buprenorphine implementation in DOC by end of 2019 for females



- The opioid epidemic is exacerbating serious injection-related infections (SIRIs) among injection drug users. SIRIs include endocarditis, osteomyelitis, epidural abscess, septic arthritis, and bloodstream infections. Between July 1, 2014, and December 31, 2019, 8,769 unique individuals survived a hospitalization for a SIRI in Massachusetts. In the year following the SIRI hospitalization, 49% (4,305) received at least one episode of MOUD treatment, 20% (1,788) received MOUD during more than half of the following year, and 11% (956) received MOUD treatment during more than 80% of the next year.

Figure 10: MOUD treatment after hospitalization for severe injection related infection, Massachusetts: 2014-2019

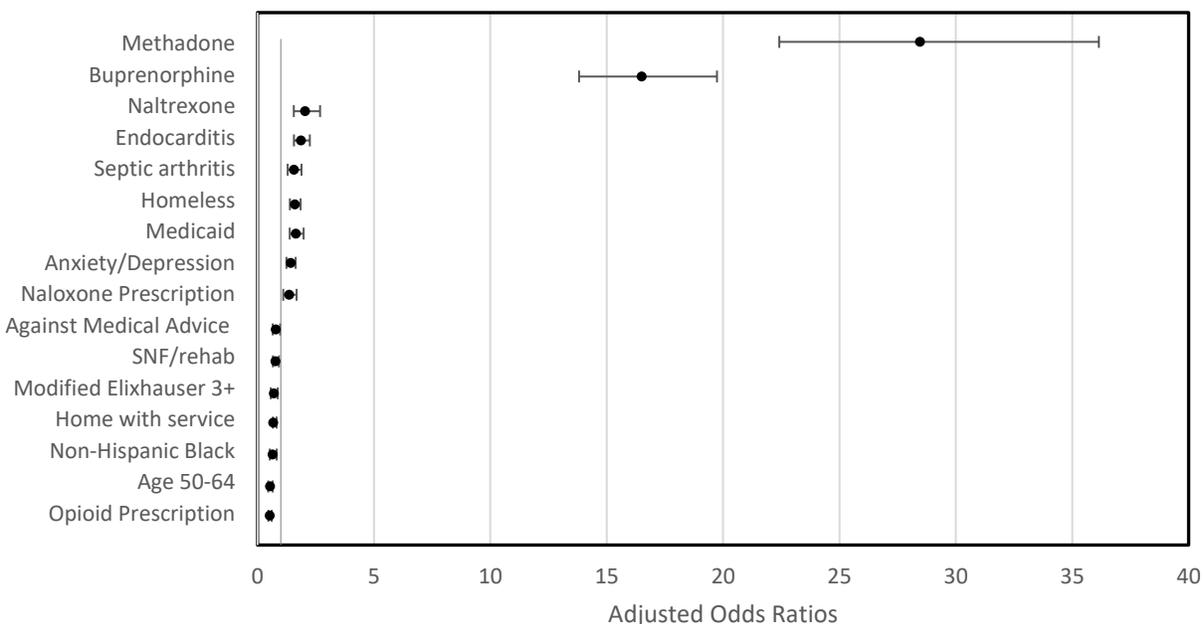


- Among individuals who survived a hospitalization for SIRI:
 - Those who had previously received buprenorphine, methadone, or naltrexone, those with Medicaid insurance, those treated for endocarditis or septic arthritis,

and those experiencing homelessness were more likely to receive MOUD in the year following their SRI.

- Individuals 50 or older, individuals with more co-morbidities, Black non-Hispanic individuals, and those who were discharged to a skilled nursing facility, to home with services, or against medical advice were less likely to receive MOUD in the year following their SRI.

Figure 11: Characteristics significantly associated with receipt of MOUD in the year following hospitalization for SRI, Massachusetts 2014-2019



Key Takeaways

- Research has shown that treatment with buprenorphine is associated with reduced mortality. Yet most patients who begin treatment with buprenorphine do not take their medication as prescribed, and more than 50% discontinue treatment in less than 12 months. More work remains to support patients on their treatment regimens.
- After DOC implemented buprenorphine treatment (alongside naltrexone, which had already been available), there was a substantial increase in the number of individuals who received this treatment in the critical first four weeks after release from MA DOC. Overall, post-release receipt of MOUD increased despite a decrease in post-release naltrexone receipt.
- Following the introduction of buprenorphine being offered in MA DOC facilities, women with OUD who were released from prison appear to have a greater uptake in receiving buprenorphine in the community than men with OUD.

- Hospitalizations are opportunities to initiate MOUD. Understanding and improving MOUD utilization, initiation, and retention after SIRIs is an important public health priority for reducing opioid-related harms.

Social Determinants of Health (SDoH)

Background

DPH continues to conduct analyses to understand better how social conditions, institutions, and policies impact access to healthcare and health outcomes, including access to treatment for opioid use disorder and opioid overdose. Specific analyses included 1) using machine learning methods (decision trees) to predict the risk of an opioid overdose within 90 days of release from prison, 2) using latent class analysis to explore variations in patterns of multiple SDoH measures for all 351 cities and towns in Massachusetts, 3) analyzing how disruptions in health insurance coverage (experienced due to switching plans or loss of insurance, commonly referred to as “health insurance churn”) may impact access to OUD services, and 4) exploring the relationships between work-related injury, work-associated pain, and fatal opioid overdose.

Data Points

- Incarceration and opioid overdose risk:
 - From 2015 through 2020, there were 45,307 releases to the community from prison in Massachusetts whose data were available in the PHD. Among this population, 2,258 (5%) experience an opioid overdose within 90 days of release. Race/ethnicity-stratified decision trees demonstrated reasonable sensitivity and specificity for identifying opioid overdoses.
 - For white non-Hispanic individuals, critical predictive factors for opioid overdose were binary sex, length of time spent at the prison after the admission most proximal to the final release date, and the percent of the population below poverty in the community to which the individual was released.
 - For Black non-Hispanic individuals, the most positive predictive factors were the release community’s education level (percent of the population over 25 years old with less than 9th-grade education) and the release community’s percent of the population that was non-white.
 - For all non-white groups, the security level in which the individual was held during their incarceration was a significant positive predictive factor for opioid overdose.
- Social and physical community factors:
 - Analyses determined that Massachusetts communities cluster into four general groupings based on their level of social capital and the intersection of SDoH measures (see below table).

- Communities in the classes with more significant challenges (SDoH risks) and fewer assets (social capital) exhibited higher raw opioid overdose (OOD) mortality rates.
- Residential segregation intersects with other community-level factors, and communities in the class with higher cross-cutting SDoHs and higher ratios of Black, Hispanic, American Indian or Alaska Native (AIAN), and Multiracial residents relative to white non-Hispanic residents exhibited the highest raw opioid overdose mortality rates.

Short Description	Definition	Number of Towns (%)	Average OOD rate per 10,000
Higher social capital (SC) Lower SDOH risk More significant share of Asian & Multiracial residents	Higher SC, lower cross-cutting SDOH risk (low socioeconomic status [SES] with moderate housing challenge, and low criminal legal involvement), lower opioid-specific SDOH risk (higher buprenorphine access, lower high-stress industry), higher ratio Asian/Multiracial to white non-Hispanic residents	89 (25.3%)	1.4
Higher SC Higher opioid risk BIPOC minority	Higher SC, low-moderate cross-cutting SDOH risk (moderate SES challenge, lower housing challenge, lower criminal legal involvement), higher opioid-specific SDOH risk (lower buprenorphine access, but greater high-stress industry presence), lower ratio BIPOC to non-Hispanic white residents	77 (22.3%)	2.0
Lower SC Higher opioid risk BIPOC minority	Lower SC, lower cross-cutting SDOH risk (lower SES with moderate housing challenge and lower criminal legal involvement), higher opioid-specific SDOH risk (lower buprenorphine availability and greater presence of high-stress industry), lower ratio BIPOC to white non-Hispanic residents	83 (23.9%)	2.5
Lower SC Higher SDOH risk More significant share of Black, Hispanic, AIAN, and Multiracial residents	Lower SC, higher cross-cutting SDOH risk (greater socioeconomic/housing challenge and criminal/legal presence), moderate opioid-specific SDOH risk (higher buprenorphine availability, and moderate high-stress industry), higher ratio Black, Hispanic, AIAN, and Multiracial residents to white non-Hispanic residents	102 (28.5%)	3.4

- Insurance coverage impacts:
 - Insurance disruptions are common in the first year after being diagnosed with OUD in Massachusetts. They were more common for individuals under 36 years compared to those 46 years or older and for people with commercial insurance (39%) compared with Medicaid (28%) at the time of their OUD diagnosis.

- Occupational injuries and associated pain:
 - Among working-age adults (16 to 64 years old) in Massachusetts who died between 2011 and 2020, those who had a prior work-related injury reported in the MA worker's compensation system were 35% more likely to have died of an opioid-related overdose than all working-age adults (17% versus 13%).
 - Among adults with a work-related injury reported in the MA worker's compensation system and who died between 2011-2020, 28% of those who died of an opioid overdose worked in Construction/Extraction jobs, compared with 18% of those who died from non-opioid related substance use and 15% of those who died from all other causes. The second leading job category among those who died of an opioid overdose and who had a previously reported work-related injury was Transportation & Material moving jobs, at 11%.

Key Takeaways

- Racial biases and other inherent inadequacies in data hindered the original decision tree model. By weighting the models and stratifying them by racial/ethnic groups, we trained models that had higher sensitivity and specificity for Black, Indigenous, and other people of color (BIPOC). Factors such as involuntary commitment and factors related to stability post-release are important predictors for overdose in various racial/ethnic groups.
- Health insurance is a key determinant of access to medical treatment. Massachusetts is fortunate in that nearly all residents have access to health insurance. Nonetheless, disruptions in health insurance coverage experienced due to switching plans or loss of insurance, commonly referred to as “health insurance churn,” may impact access to OUD services. The impact of insurance disruptions on access to and continuity with OUD services should be further studied and may be a target of future policy interventions.
- These findings support evidence from previous Massachusetts analyses that risk factors for injury related to a person's job and occupation play a role in precipitating workers' use of opioids; this exposure to opioids could subsequently lead to adverse outcomes such as opioid overdose death. Jobs in Construction/Extraction, Transportation/Material Moving, and Food Preparation/Serving are physically demanding and ‘high hazard,’ putting workers at an elevated risk for injury. The nature of the work required of these jobs and the need to manage injury-associated pain and stress from job-related

demands has been shown in the scientific literature to be associated with both prescription and illicit opioid use. A better understanding of the pathway between occupational injuries and opioid-related overdose deaths is needed to tailor prevention efforts and public health messaging.

Priority Public Health Trends: Maternal and Child Health

Severe Maternal Morbidity (SMM)

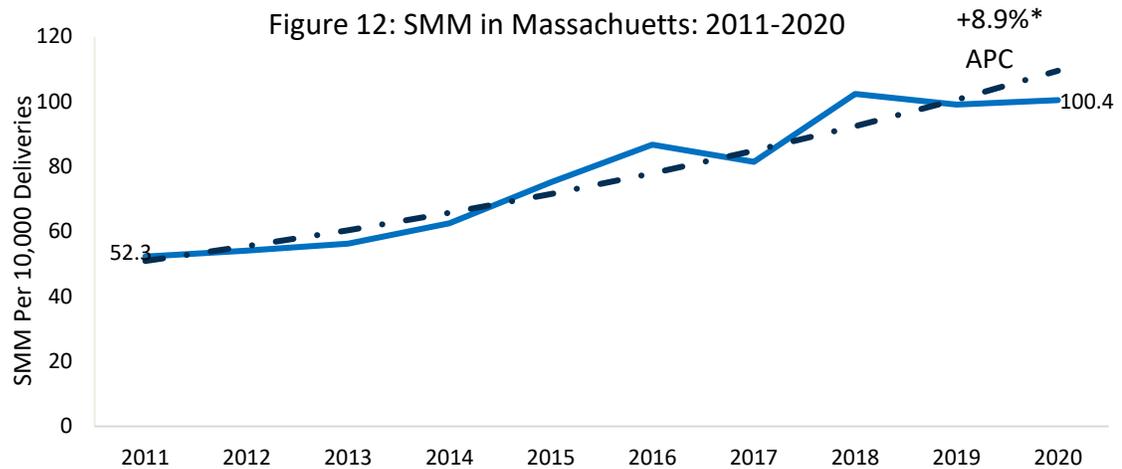
Background

DPH released the Data Brief, *An Assessment of Severe Maternal Morbidity in Massachusetts: 2011-2020*, in July of 2023.⁵ Highlights of that report are included here. SMM includes life-threatening conditions (such as heart attacks, acute kidney failure, amniotic fluid embolism, disseminated intravascular coagulation, eclampsia, and sepsis) and life-saving procedures used to manage serious conditions (such as the use of a ventilator machine to help with breathing, or the removal of the uterus) in birthing people.

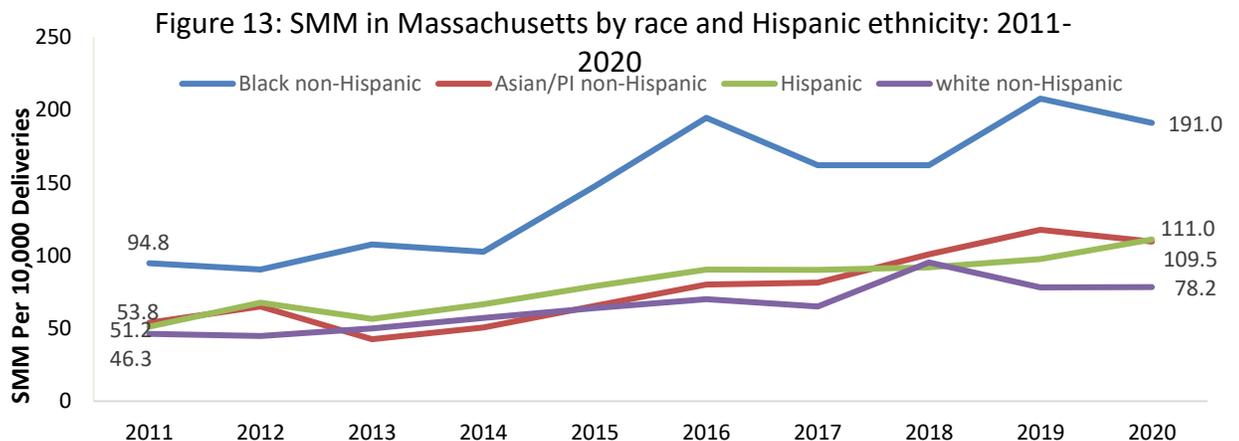
⁵ Massachusetts Department of Public Health. (2023, July). *An Assessment of Severe Maternal Morbidity in Massachusetts: 2011-2020*. <https://www.mass.gov/doc/an-assessment-of-severe-maternal-morbidity-in-massachusetts-2011-2020-0/download>

Data Points

- From 2011 to 2020, there were 678,382 deliveries, including live births and fetal deaths among 483,699 Massachusetts residents. Among these deliveries, 4,092 (0.9%) met the criteria for severe maternal morbidity (SMM).
- The prevalence of SMM nearly doubled in Massachusetts from 2011 to 2020, with an average annual percentage increase of 8.9% per year.



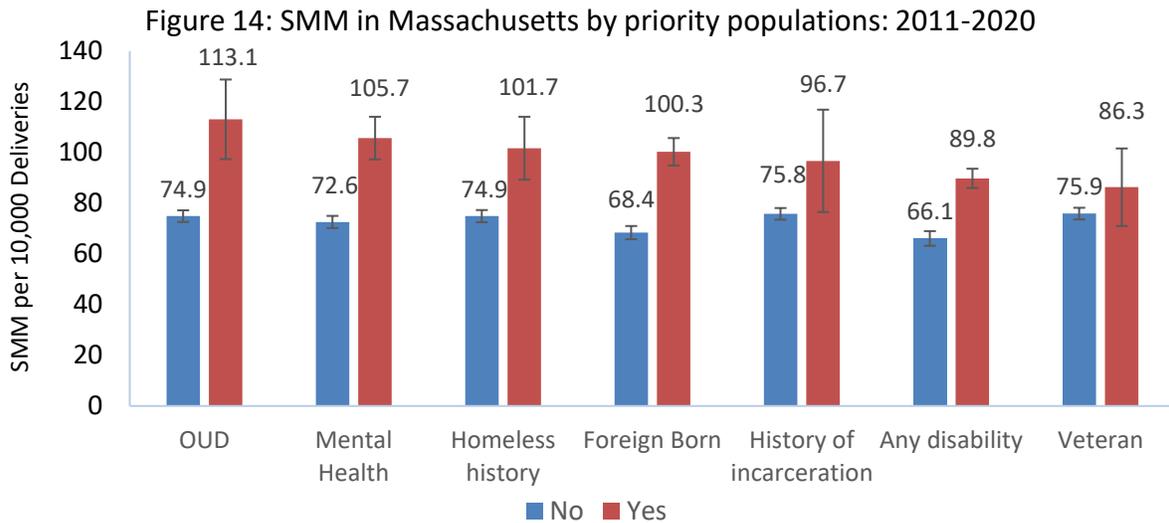
- Black non-Hispanic birthing people have consistently experienced the highest SMM rates among all race/ethnicity groups, and those rates more than doubled in this time, widening an already large racial inequity gap. Rates among Asian/Pacific Islander non-Hispanic and Hispanic birthing people were 1.2 times higher than rates among white non-Hispanic birthing people.



Note: Rates for American Indian and Other non-Hispanic birthing people are not shown because these are based on a total of 39 events ranging from 1-4 for all years except for 2 where the counts were 6.

- For every 10,000 deliveries among the priority population groups identified in figure 14, there were 113.1 deliveries with SMM among people with opioid use disorder (OUD), 105.7 deliveries among people with a mental health disorder, 101.7 deliveries among

people ever experiencing homelessness, 100.3 deliveries with SMM among foreign-born birthing parents, 96.7 among people who had a history of incarceration, 89.8 deliveries with SMM among those with any disability, and 86.3 deliveries with SMM among veterans.



Key Takeaways

- Persistent disparities in SMM arise from inequities in care and access, social and economic factors, and the enduring effects of structural racism. These data underscore the need for enhanced monitoring and support of the needs of all birthing people. To improve peripartum health outcomes, state policy efforts must continue to target structural racism and ableism, as well as other socioeconomic and community drivers of adverse maternal outcomes, including access to and quality of primary and prenatal care

Screening for Postpartum Depression (PPD)

Background

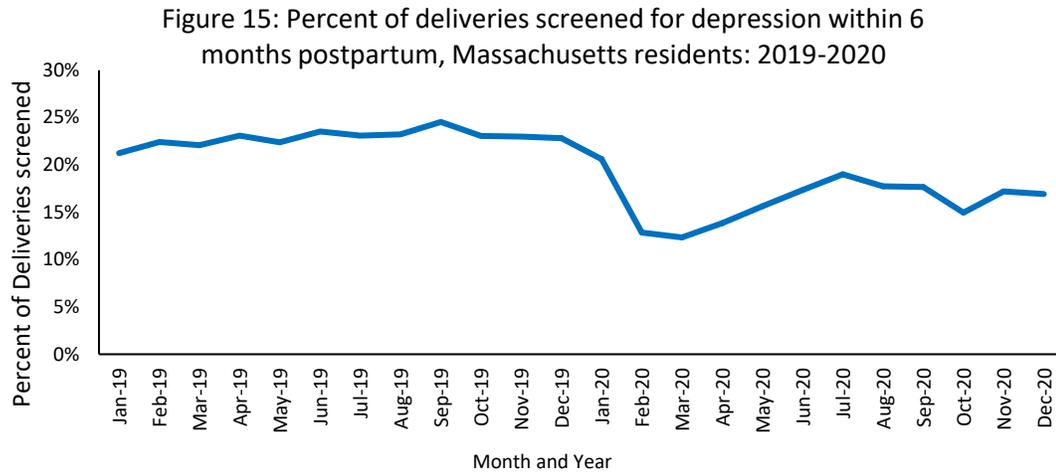
PPD is an important public health issue with profound long-term consequences for birthing people, infants, and families if left untreated, including impaired birthing parent-infant bonding, delayed social and cognitive development in children, and increased risk of birthing parent suicide and infant death.⁶ It is widely recognized that greater than 50% of birthing people with

⁶ Wouk K, Stuebe AM, Meltzer-Brody S. Postpartum mental health and breastfeeding practices: an analysis using the 2010–2011 Pregnancy Risk Assessment Monitoring System. *Matern Child Health J* 2016. Epub July 22, 2016.

PPD are not identified and thus cannot seek help from a health care or mental health professional.⁷

Data Points

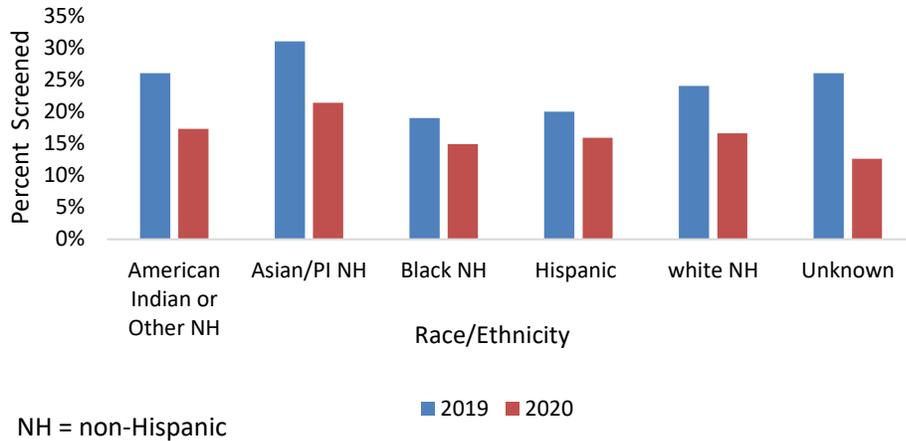
- From January 2019 through December 2020, there were 129,428 unique deliveries, of which 94,122 (73%) were linked to an All-Payer Claims Database (APCD) claim. Of those that could be linked, 20% (18,546 deliveries) were screened for PPD. The yearly percentage screened dropped from 23% in 2019 (pre-pandemic) to 16% in 2020.



- Asian/Pacific Islander non-Hispanic birthing people had the highest rate of PPD screening in 2019 and 2020 among all racial/ethnic groups. Among those with a known race/ethnicity, PPD screening rates were lowest among Black non-Hispanic birthing people. While there were decreases in screening rates among all racial/ethnic groups from 2019 to 2020, the biggest declines were seen among American Indian or other non-Hispanic birthing people (33% decrease) and birthing people of unknown race/ethnicity (52% decrease).

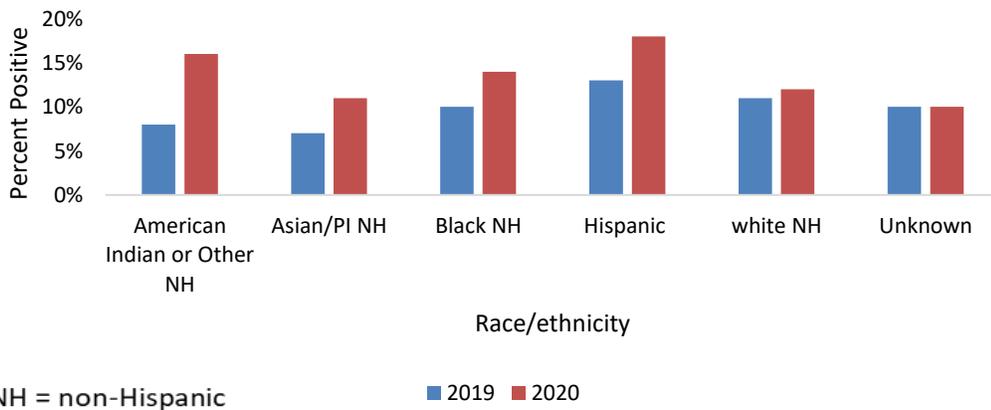
⁷ Stein A, Gath DH, Bucher J, Bond A, Day A, Cooper PJ. The relationship between post-natal depression and mother-child interaction. *Br J Psychiatry* 1991; 158:46–52.

Figure 16: Percent of deliveries screened for depression within 6 months postpartum by race and Hispanic ethnicity, Massachusetts residents: 2019-2020



- The percentage of positive screens increased for all racial/ethnic groups from 2019 to 2020. The largest increase was seen among birthing people who identified as American Indian or other non-Hispanic ethnicity, who had their positive percentage double from 8% in 2019 to 16% in 2020. There were also large increases among birthing people who identified as Asian/Pacific Islander non-Hispanic (57% increase), Black non-Hispanic (40% increase), or Hispanic (38% increase). There was a 9% increase among birthing people who identified as white non-Hispanic and no change among birthing people with an unknown race/ethnicity.

Figure 17: Percent positive screens of deliveries screened for depression within 6 months postpartum by race and Hispanic ethnicity, Massachusetts residents: 2019-2020



Key Takeaways

- Screening rates for PPD were low overall and dropped during the COVID-19 pandemic. Untreated postpartum depression (PPD) has negative consequences for both children and birthing parents.
- The percent of positive screenings increased from 2019 to 2020, and this increase was largest among BIPOC-birthing people.
- More work and support are needed to close the gaps in the percentage of birthing parents screened for postpartum depression and increase referrals to timely, high-quality treatment.

Hepatitis C Virus (HCV) Infection Among Reproductive Age Women with OUD

Background

HCV infection diagnoses continue to rise across the United States, particularly in reproductive-age women. We looked at testing rates, linkage to care, and prescription treatment among reproductive-age women in Massachusetts with opioid use disorder (OUD) who are at high risk for HCV infection.

Data Points

- Of the 64,432 women with OUD between 2014 and 2020, only 40,228 (64%) had HCV antibody or RNA testing.
- Of 9,382 women with confirmed chronic HCV infection (23.3% of those tested), 6,331 (67.5%) were linked to care for their HCV, and 2,711 (28.9%) had HCV treatment prescribed.
- Only 1,682 (62.1% of those treated) had an SVR12 check.⁸ Case identification decreased from 2014 through 2020 and treatments increased until 2019.

Key Takeaways

- Nearly half of the women with OUD did not have evidence of being tested for HCV, despite CDC recommendations for HCV screening among all individuals with risk factors for HCV (such as injection drug use) and among pregnant people with risk factors.⁹ Treatment rates in this population are higher than observed in other US studies, yet still

⁸ SVR12= sustained virologic response 12 weeks after treatment, is indicative HCV has been cured; 90% of individuals being treated for HCV can be cured with 12 weeks of treatment.

⁹ <https://www.cdc.gov/hepatitis/hcv/guidelinesc.htm>

less than 50%. Significant work must be done to implement the CDC's 2020 universal testing recommendations to improve HCV testing and treatment rates to achieve HCV elimination goals.

Conclusion

The PHD continues to offer Massachusetts an important opportunity to understand complex public health problems better using a multi-sector perspective that is especially beneficial for understanding systems and structural drivers of poor health outcomes. These findings can inform state policies, practices, and programs and support resource prioritization that targets the root causes of inequities.

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