

National Study of Treatment and Addiction Recovery Residences Report MASSACHUSETTS

The National Study of Treatment and Addiction Recovery Residences (NSTARR) constitutes the largest and most diverse study of recovery housing in the U.S. to date. NSTARR compiled data from publicly available sources (e.g., Oxford House, National Alliance for Recovery Residences, and Substance Abuse and Mental Health Services Administration websites) and lists maintained by entities tracking recovery housing. Residences for which locating information was available were geocoded and linked with U.S. Census data on urbanicity, alcohol- and drug-involved mortality, and COVID vulnerability. Data collection began in January 2020 and is ongoing until June 2023. The NSTARR database currently contains information on 10,358 residences operated by 3,628 providers in all 50 states. For a detailed description of methods and national findings, please see Mericle et al., 2022.

KEY FINDINGS

The NSTARR team identified 290 recovery residences (4.23 houses per 100,000 population) in Massachusetts (see Table 1). Compared to other states (which include DC), Massachusetts ranked 15 in terms of recovery housing availability per capita. Ninety-one percent of residences in Massachusetts could be geocoded for these analyses. Barnstable County, an urban county, had the most recovery residences per 100,000 population, and Nantucket County, a non-adjacent rural county, had no identified recovery residences; four had fewer than 5 recovery residences (see Figure 1).

We used geographic information systems to identify hot and cold spots in Massachusetts. A hot spot is a cluster of high values (county with a high number of residences surrounded by other counties with high numbers of residences) and a cold spot is a cluster of low values (county with low counts surrounded by counties also with low counts). However, we were unable to identify hot and cold spots in Massachusetts because the Getis-Ord G_i^* Hot Spot Analysis tool requires a minimum of 30 input features (counties) for it to work best.

The age-adjusted alcohol- and drug-involved mortality rate (per 100,000 population) was 16.70 in Massachusetts for the years 2009-2019. Massachusetts ranked 35 on alcohol- and drug-involved mortality out of the 50 states and DC. Barnstable County had the highest alcohol- and drug-involved mortality rate and Nantucket County had the lowest alcohol- and drug-involved mortality rate. Of the three counties that had the highest mortality rates in Massachusetts (i.e., Barnstable, Bristol, and Berkshire), all also ranked in the top half recovery housing availability per capita, suggesting recovery housing is located in communities with greater need (see Table 1 and Figure 2).

COVID vulnerability was summarized using the county-level data from the Centers for Disease Control and Prevention's COVID Vulnerability Index (CCVI). The CCVI is a composite measure of seven social determinants of health, encompassing modified themes from the Centers for Disease Control and Prevention's Social Vulnerability Index in combination with COVID risk factors to identify communities in need of additional support during the COVID pandemic. No county were classified as having very high vulnerability (see Table 1 and Figure 3).

290
RESIDENCES
TOTAL

15
NATIONAL
AVAILABILITY
RANKING

1
COUNTY
WITHOUT
RESIDENCES

Table 1. County-level Descriptive Statistics on Recovery Residences

| County Name | Population ¹ | RUCC Classification ² | Number of Recovery Residences ³ | Recovery Residences Per 100,000 Population | Recovery Residences Availability per Capita (Rank) ⁴ | Age-Adjusted Alcohol/Drug Mortality ⁵ Rate per 100,000 Population | Mortality Rate (Rank) ⁶ | CCVI Quintile ⁷ |
|---------------|-------------------------|----------------------------------|--|--|---|--|------------------------------------|----------------------------|
| MASSACHUSETTS | 6,850,553 | | 290 | 4.23 | 15 | 16.70 | 35 | |
| Barnstable | 213,496 | Urban | 28 | 13.11 | 1 | 53.60 | 1 | Very low vulnerability |
| Berkshire | 126,425 | Urban | 4 | 3.16 | 7 | 45.20 | 3 | Low |
| Bristol | 561,037 | Urban | 39 | 6.95 | 3 | 53.40 | 2 | Moderate |
| Dukes | 17,312 | Non-adjacent rural | 2 | 11.55 | 2 | 31.20 | 11 | Very low vulnerability |
| Essex | 783,676 | Urban | 18 | 2.30 | 13 | 41.60 | 6 | Moderate |
| Franklin | 70,577 | Adjacent rural | 2 | 2.83 | 9 | 37.40 | 9 | Low |
| Hampden | 467,871 | Urban | 12 | 2.56 | 11 | 44.80 | 4 | High |
| Hampshire | 161,032 | Urban | 5 | 3.10 | 8 | 35.70 | 10 | Very low vulnerability |
| Middlesex | 1,600,842 | Urban | 37 | 2.31 | 12 | 28.20 | 13 | Low |
| Nantucket | 11,168 | Non-adjacent rural | 0 | 0.00 | 14 | 24.50 | 14 | Very low vulnerability |
| Norfolk | 700,437 | Urban | 19 | 2.71 | 10 | 30.70 | 12 | Low |
| Plymouth | 515,303 | Urban | 19 | 3.69 | 6 | 42.40 | 5 | Low |
| Suffolk | 796,605 | Urban | 43 | 5.40 | 4 | 41.30 | 7 | Moderate |
| Worcester | 824,772 | Urban | 36 | 4.36 | 5 | 40.60 | 8 | Moderate |

¹Population data were downloaded from tables in Social Explorer’s ACS five-year estimate (2015-2019). American Community Survey 5-year Estimates, 2015-2019. Social Explorer tables, ACS 2015-2019. Social Explorer.

²The Rural-Urban Continuum Code (RUCC) was used to classify each county as urban, adjacent rural, or non-adjacent rural. Urban counties are counties with codes 1 (Counties in metro areas of 1 million population or more), 2 (Counties in metro areas of 250,000 to 1 million population), and 3 (Counties in metro areas of fewer than 250,000 population). Adjacent rural counties are counties with codes 4 (Urban population of 20,000 or more, adjacent to a metro area), 6 (Urban population of 2,500 to 19,999, adjacent to a metro area), and 8 (Completely rural or less than 2,500 urban population, adjacent to a metro area). Non-adjacent rural counties are the remaining three codes - 5 (Urban population of 20,000 or more, not adjacent to a metro area), 7 (Urban population of 2,500 to 19,999, not adjacent to a metro area), and 9 (Completely rural or less than 2,500 urban population, not adjacent to a metro area). Rural-Urban Continuum Code (RUCC). <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>

³Recovery residences are from the NSTARR project and are current as of 2020. Twenty-six (26) recovery residences in the state were not successfully geocoded due to lack of adequate address information, and thus were not assigned to a county.

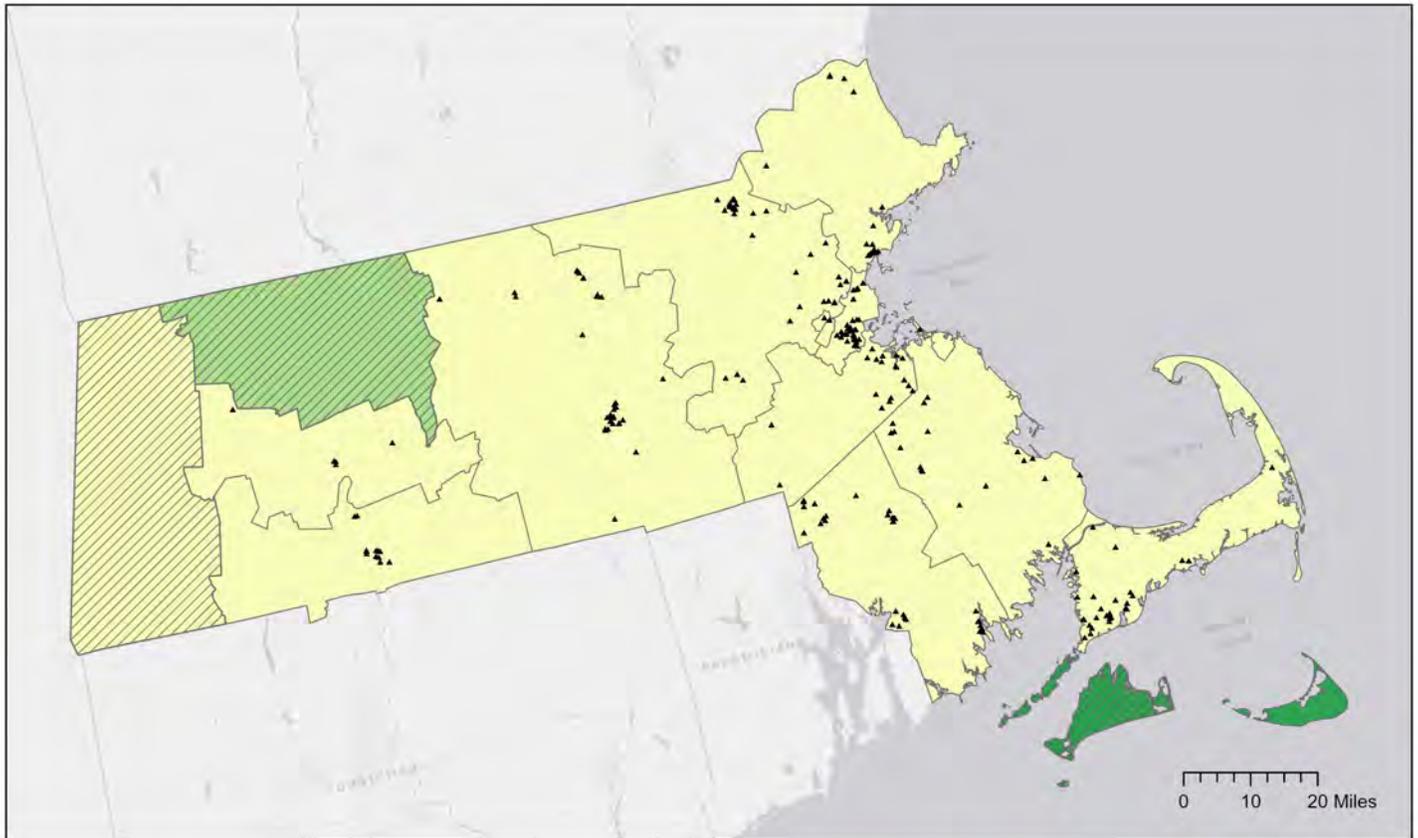
⁴Recovery residences availability per capita is ranked in order of decreasing recovery residence density per 100,000 population per county, with 1 (highest number of residences per 100,000) to 14 (lowest number of residences per 100,000 population).

⁵Alcohol- and mortality included all deaths as underlying causes of death and selected ICD-10 codes mentioning or attributed to alcohol or drugs as contributing cause of death. Data from the Centers for Disease Control and Prevention, 2020. CDC Wonder (Wide-ranging Online Data for Epidemiologic Research). U.S. Department of Health and Human Services, Atlanta, GA. Available at: <https://wonder.cdc.gov/>. For more information on coding multiple causes of death, see: Centers for Disease Control and Prevention, About Multiple Cause of Death, 1999-2019. <https://wonder.cdc.gov/mcd-icd10.html>. accessed on August 9 2021.

⁶Mortality rate is ranked in order of decreasing alcohol- and drug-involved mortality from 1 (highest mortality per 100,000 population) to 14 (lowest mortality per 100,000 population).

⁷COVID-19 Community Vulnerability Index (CCVI) scores range in value from 0 – 1, with 0 being least vulnerable and 1 being the most vulnerable. Each county is ranked relative to all counties across the country, based on seven themes/domains. Each county was grouped into quintiles: very high (score of 0.8-1), high (0.6-0.8), moderate (0.4-0.6), low (0.2-0.4), and very low (0-0.2). For more information on how the CCVI is calculated, see: COVID-19 Community Vulnerability Index (CCVI) methodology. Retrieved from [https://covid-static-assets.s3.amazonaws.com/US-CCVI/COVID-19+Community+Vulnerability+Index+\(CCVI\)+Methodology.pdf](https://covid-static-assets.s3.amazonaws.com/US-CCVI/COVID-19+Community+Vulnerability+Index+(CCVI)+Methodology.pdf)

Figure 1. Distribution of Residences by Rural-Urban Classification



▲ Recovery residences

Rural-Urban Classification Code (RUCC)

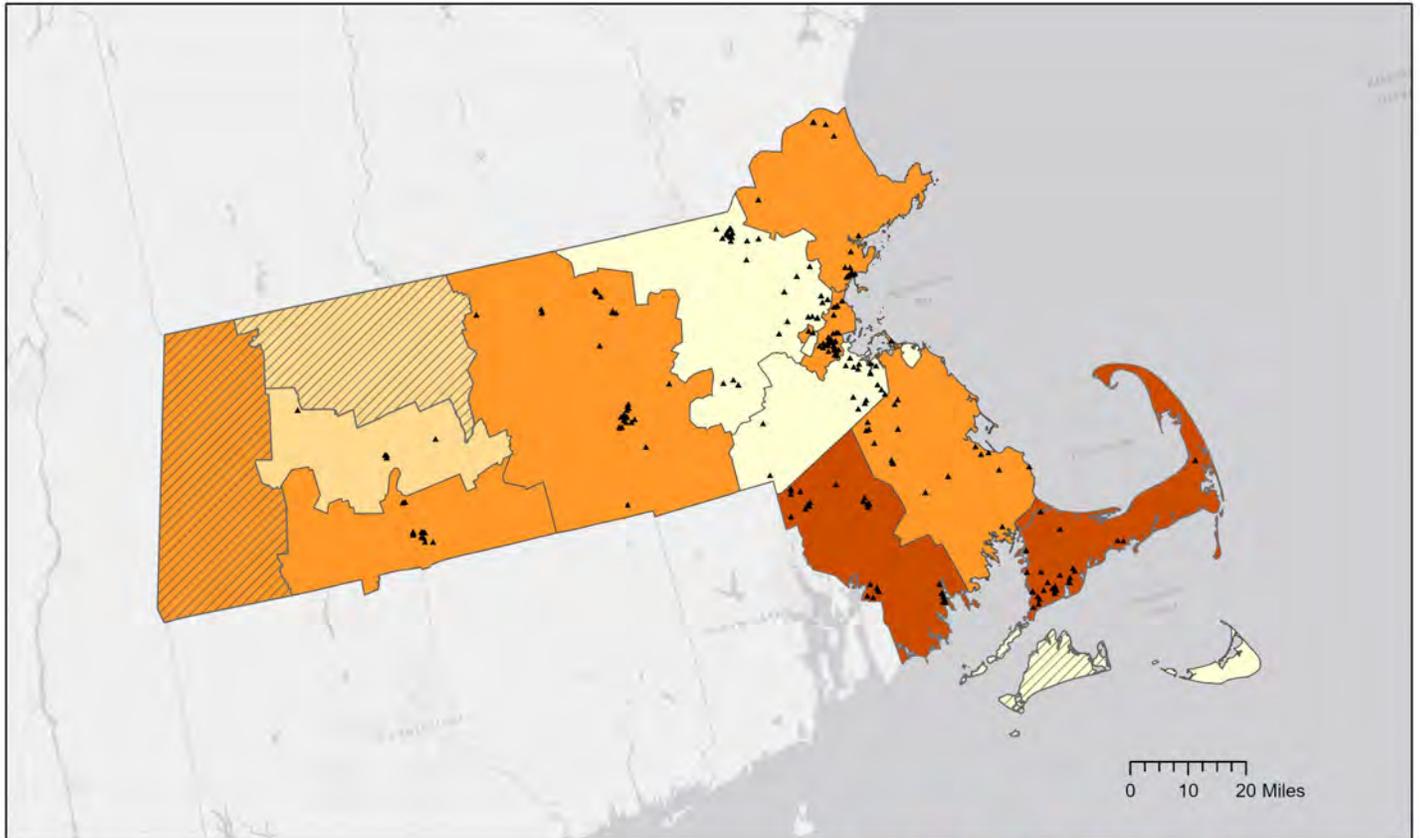
- Urban
- Adjacent rural
- Non-adjacent rural
- Counties with residence locations suppressed (1-4 residences) to protect privacy



Data Credits: Esri, HERE, Garmin, USGS, EPA, NPS
Recovery residence locations: 2020
Created by: NSTARR Project (May 2022)



Figure 2. Distribution of Residences by Age-adjusted Alcohol- and/or Drug-involved Mortality



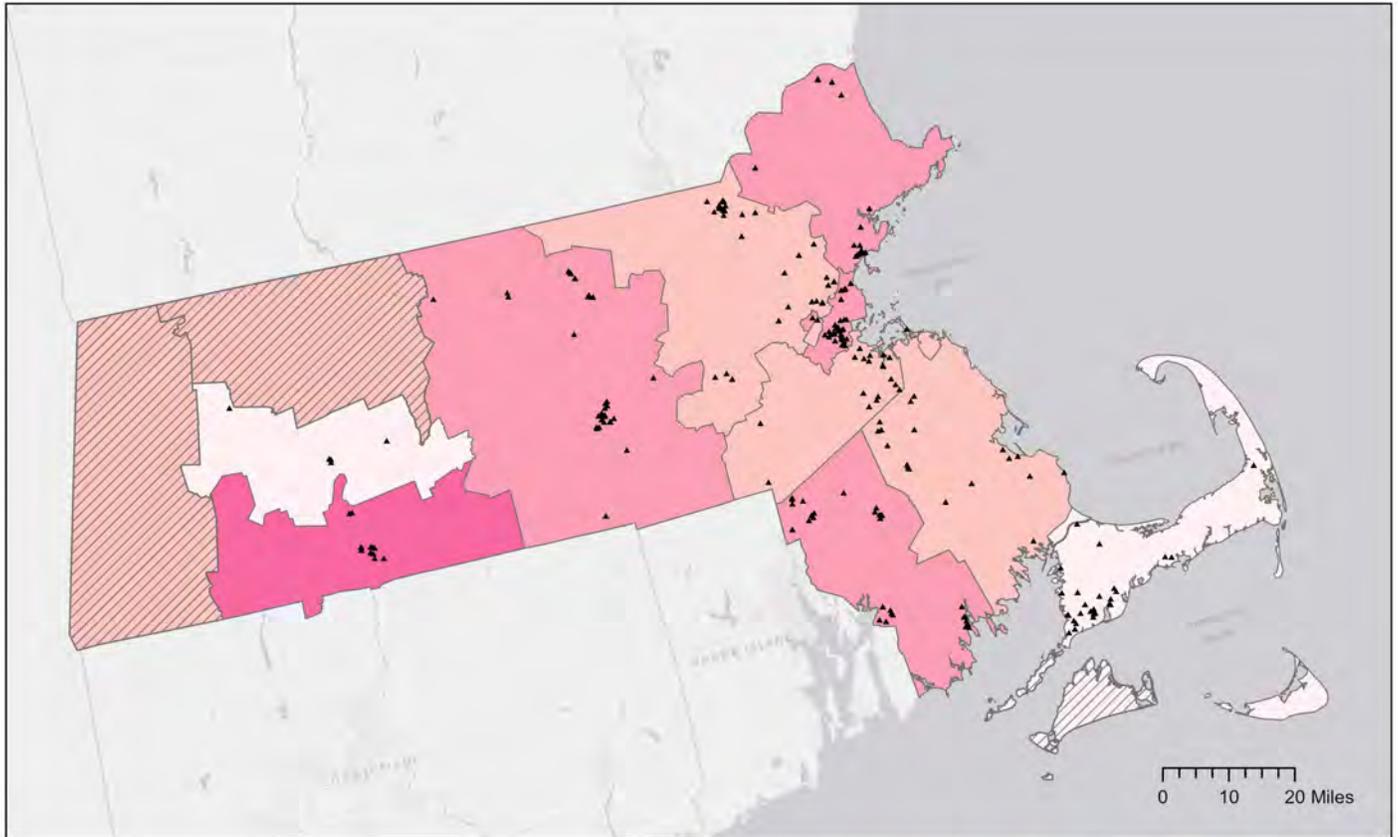
- ▲ Recovery residences
- Age-adjusted alcohol and drug mortality rate per 100,000 population
- 9 - 18
- 19 - 28
- 29 - 52
- 53 - 79
- Suppressed/Unreliable
- Counties with residence locations suppressed (1-4 residences) to protect privacy



Data Credits: Esri, HERE, GARMIN, USGS, EPA, NPS
 Recovery residence locations: 2020
 Created by: NSTARR Project (May 2022)



Figure 3. Distribution of Residences by COVID-19 Community Vulnerability Index



- ▲ Recovery Residences
- COVID-19 Community Vulnerability Index (CCVI)
- Very low vulnerability
- Low
- Moderate
- High
- Very high vulnerability
- Counties with residence locations suppressed (1-4 residences) to protect privacy



Data Credits: Esri, HERE, Garmin, USGS, EPA, NPS
Recovery residence locations: 2020
Created by: NSTARR Project (May 2022)





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