

# National Study of Treatment and Addiction Recovery Residences Report

## MARYLAND

**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 337 recovery residences (5.60 houses per 100,000 population) in Maryland (see Table 1). Compared to other states (which include DC), Maryland ranked 9 in terms of recovery housing availability per capita. However, only 36% of residences in Maryland could be geocoded for these analyses. Baltimore City, an urban county, had the most recovery residences per 100,000 population, and eight counties had no identified recovery residences, representing a mix of rural-urban classifications; 18 had fewer than 5 recovery residences (see Figure 1).

We used geographic information systems to identify hot and cold spots in Maryland. 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 Maryland 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 15.10 in Maryland for the years 2009-2019. Maryland ranked 39 on alcohol- and drug-involved mortality out of the 50 states and DC. Baltimore City had the highest alcohol- and drug-involved mortality rate and Montgomery County had the lowest alcohol- and drug-involved mortality rate. Of the three counties that had the highest mortality rates in Maryland (i.e., Baltimore City, Cecil, and Caroline), two of them 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. Only one county was classified as having very high vulnerability, and this county was located in an area ranked in the top half of recovery housing availability per capita, again suggesting that recovery housing is located in communities with greater need (see Table 1 and Figure 3).

337  
RESIDENCES  
TOTAL

9  
NATIONAL  
AVAILABILITY  
RANKING

8  
COUNTIES  
WITHOUT  
RESIDENCES

Table 1. County-level Descriptive Statistics on Recovery Residences

County Name	Population <sup>1</sup>	RUCC Classification <sup>2</sup>	Number of Recovery Residences <sup>3</sup>	Recovery Residences Per 100,000 Population	Recovery Residences Availability per Capita (Rank) <sup>4</sup>	Age-Adjusted Alcohol/Drug Mortality <sup>5</sup> Rate per 100,000 Population	Mortality Rate (Rank) <sup>6</sup>	CCVI Quintile <sup>7</sup>
MARYLAND	6,018,848		337	5.60	9	15.10	39	
Allegany	71,445	Urban	1	1.40	10	48.90	5	Low
Anne Arundel	571,275	Urban	18	3.15	4	40.50	10	Very low vulnerability
Baltimore	828,018	Urban	3	0.36	15	43.70	8	Low
Baltimore City	609,032	Urban	42	6.90	1	87.30	1	Very high vulnerability
Calvert	91,511	Urban	2	2.19	7	42.20	9	Very low vulnerability
Caroline	33,049	Adjacent rural	0	0.00	24	50.70	3	Moderate
Carroll	167,699	Urban	2	1.19	11	38.90	12	Very low vulnerability
Cecil	102,552	Urban	5	4.88	3	60.60	2	Low
Charles	159,428	Urban	0	0.00	24	29.00	21	Low
Dorchester	32,138	Adjacent rural	1	3.11	5	37.60	15	High
Frederick	251,422	Urban	4	1.59	9	30.50	20	Very low vulnerability
Garrett	29,235	Adjacent rural	0	0.00	24	33.60	18	Very low vulnerability
Harford	252,222	Urban	1	0.40	14	38.50	13	Very low vulnerability
Howard	318,855	Urban	1	0.31	16	17.60	23	Very low vulnerability
Kent	19,536	Adjacent rural	0	0.00	24	47.80	6	Moderate
Montgomery	1,043,530	Urban	21	2.01	8	14.10	24	Low
Prince George's	908,670	Urban	10	1.10	12	21.20	22	Moderate
Queen Anne's	49,632	Urban	0	0.00	24	40.10	11	Very low vulnerability
Somerset	25,729	Urban	0	0.00	24	38.10	14	Moderate
St. Mary's	112,290	Urban	1	0.89	13	32.60	19	Low
Talbot	37,167	Adjacent rural	0	0.00	24	34.60	17	Low
Washington	150,109	Urban	8	5.33	2	49.90	4	Moderate
Wicomico	102,539	Urban	3	2.93	6	36.80	16	Moderate
Worcester	51,765	Urban	0	0.00	24	45.70	7	Moderate

<sup>1</sup>Population 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.

<sup>2</sup>The 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>

<sup>3</sup>Recovery residences are from the NSTARR project and are current as of 2020. Two hundred and fourteen (214) recovery residences in the state were not successfully geocoded due to lack of adequate address information, and thus were not assigned to a county.

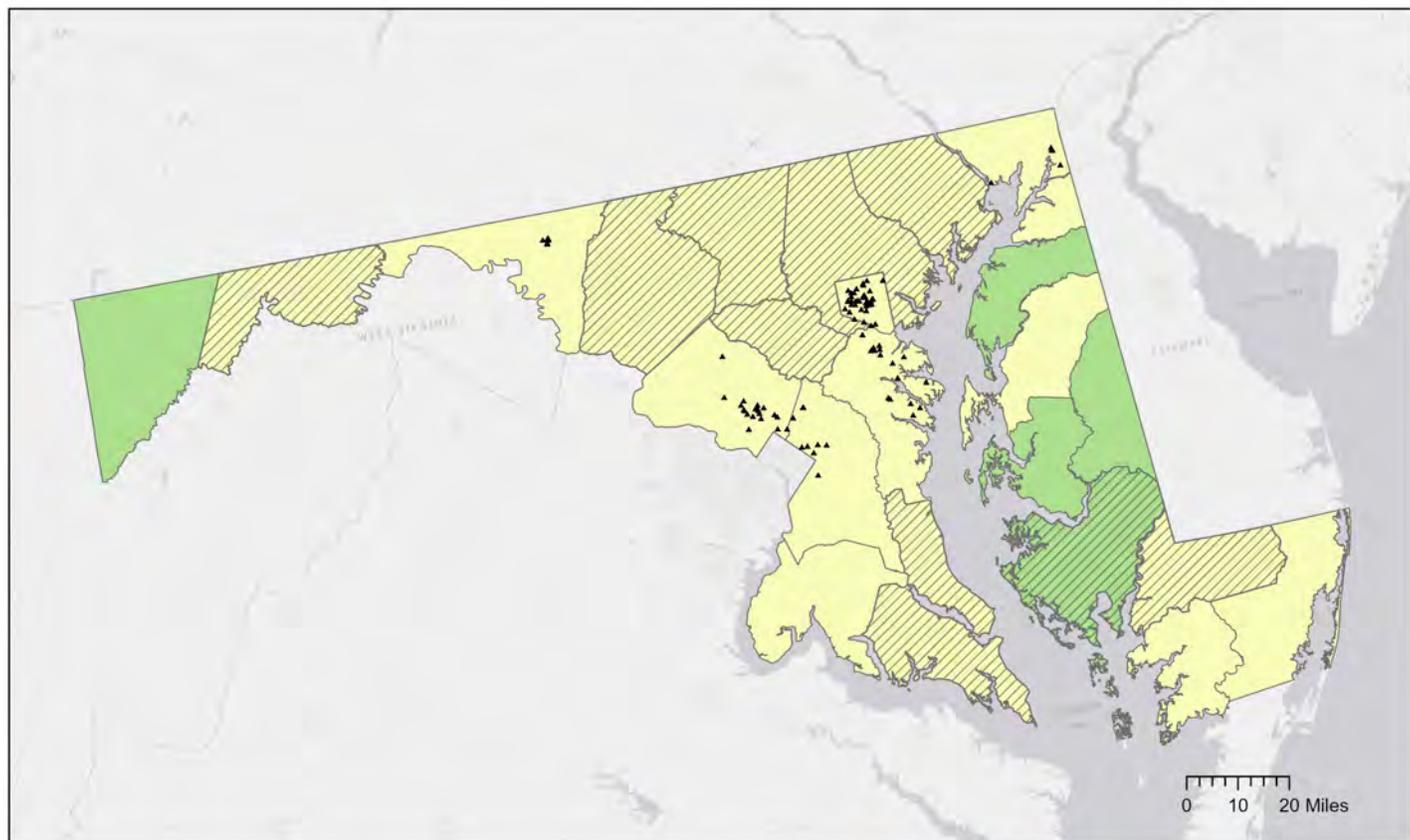
<sup>4</sup>Recovery residences availability per capita is ranked in order of decreasing recovery residence density per 100,000 population per county, with 1 (highest number of residences per 100,000) to 24 (lowest number of residences per 100,000 population). Counties without recovery residences were all assigned a tied rank of 24.

<sup>5</sup>Alcohol- and drug-involved 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.

<sup>6</sup>Mortality rate is ranked in order of decreasing alcohol- and drug-involved mortality from 1 (highest mortality per 100,000 population) to 24 (lowest mortality per 100,000 population).

<sup>7</sup>COVID-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



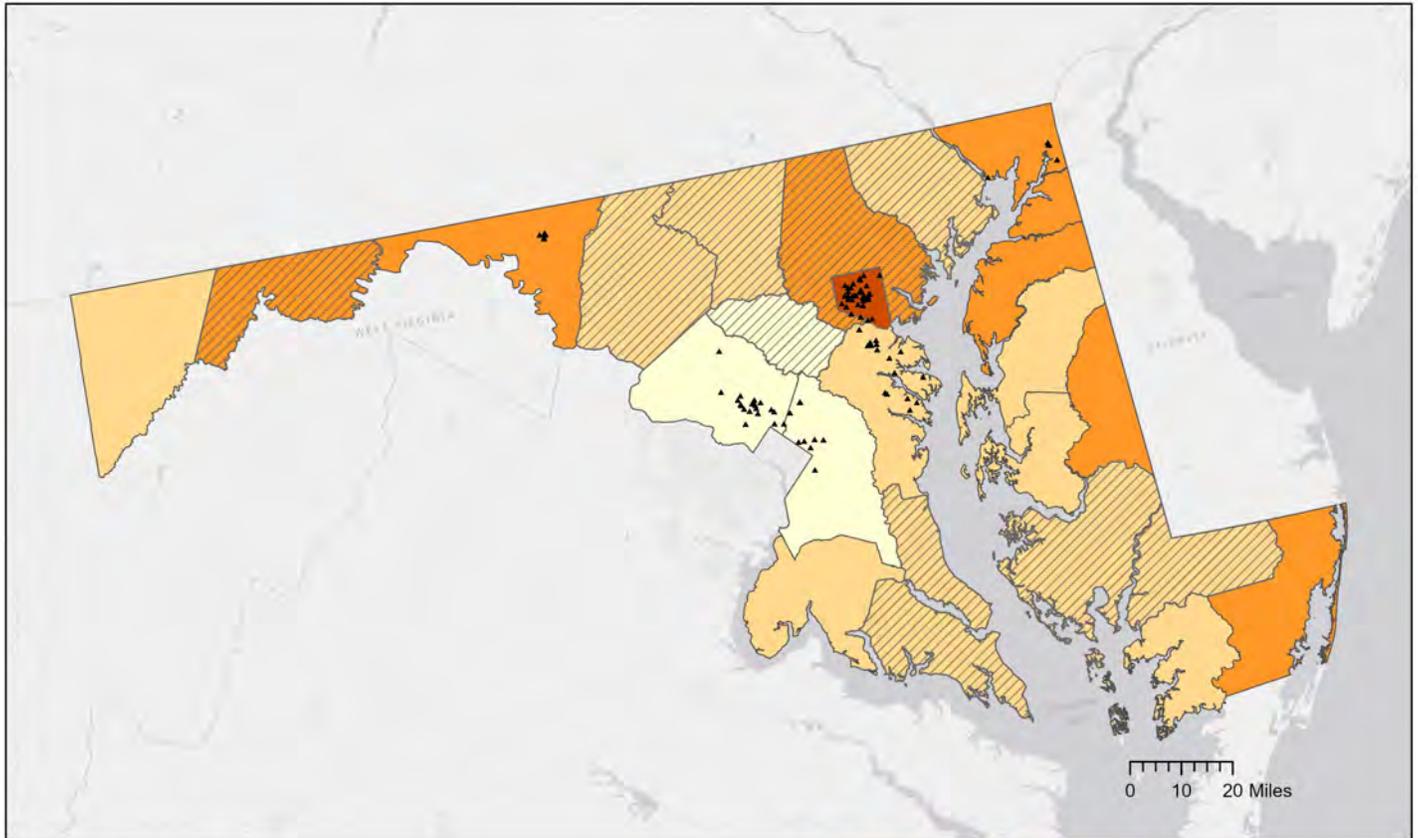
- ▲ Recovery residences
- Rural-Urban Classification Code (RUCC)
  - Urban
  - Adjacent rural
  - Non-adjacent rural
  - Counties with residence locations suppressed (1-4 residences) to protect privacy



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



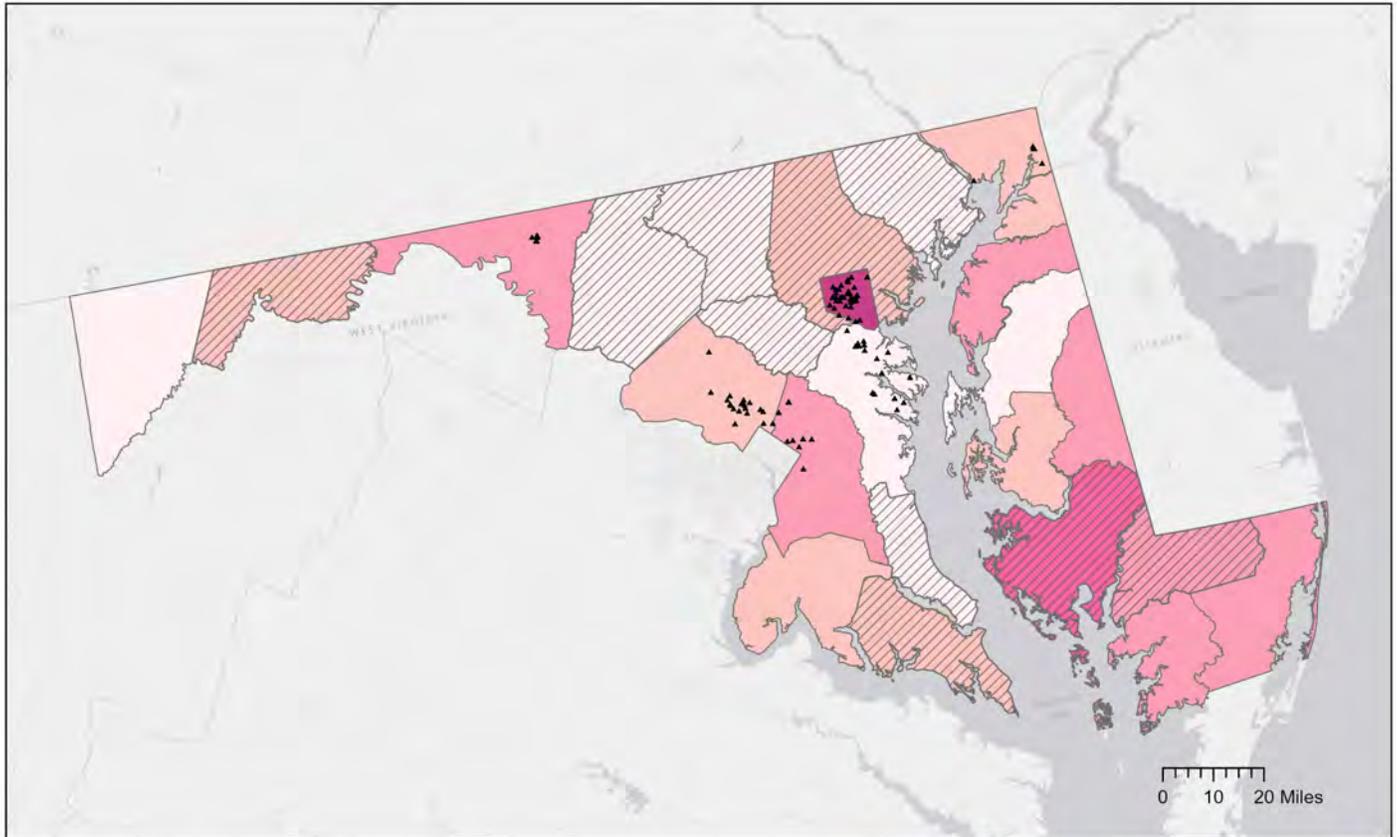
- ▲ Recovery residences
- Age-adjusted alcohol and drug mortality rate per 100,000 population
- 9 - 18
- 19 - 28
- 29 - 52
- 53 - 79
- Suppressed/Unreliable
- Counties with residence locations suppressed (1-4 residences) to protect privacy



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)





National Study of Treatment and Addiction Recovery Residences  
6001 Shellmound Street, Suite 450  
Emeryville, CA 94608

 [nstarr.arg.org](http://nstarr.arg.org)  [nstarr@arg.org](mailto:nstarr@arg.org)  [@NSTARRStudy](https://www.facebook.com/NSTARRStudy)  [@arg\\_nstarr](https://twitter.com/arg_nstarr)

Funding for this project was provided by the National Institute on Alcohol Abuse and Alcoholism at the National Institutes of Health under award R01AA027782 (PI: Mericle).

