

National Study of Treatment and Addiction Recovery Residences Report

MICHIGAN

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 199 recovery residences (2.00 houses per 100,000 population) in Michigan (see Table 1). Compared to other states (which include DC), Michigan ranked 34 in terms of recovery housing availability per capita. Ninety-six percent of residences in Michigan could be geocoded for these analyses. Baraga County, a non-adjacent rural county, had the most recovery residences per 100,000 population, and 50 counties had no identified recovery residences, representing a mix of rural-urban classifications; 72 had fewer than 5 recovery residences (see Figure 1).

We used geographic information systems to identify hot and cold spots in Michigan. 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). Our analyses found hot spots and cold spots within the state (see Figure 2).

The age-adjusted alcohol- and drug-involved mortality rate (per 100,000 population) was 16.40 in Michigan for the years 2009–2019. Michigan ranked 37 on alcohol- and drug-involved mortality out of the 50 states and DC. Among the counties ranked, Calhoun County had the highest alcohol- and drug-involved mortality rate and Clinton County had the lowest alcohol- and drug-involved mortality rate. Of the three counties that had the highest mortality rates in Michigan (i.e., Calhoun, Roscommon, and Baraga), 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 3).

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 4).

199
RESIDENCES
TOTAL

34
NATIONAL
AVAILABILITY
RANKING

50
COUNTIES
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
MICHIGAN	9,965,265		199	2.00	34	16.40	37	
Alcona	10,353	Non-adjacent rural	0	0.00	83	43.90	18	Low
Alger	9,151	Non-adjacent rural	0	0.00	83	31.30	60	Low
Allegan	116,143	Adjacent rural	1	0.86	31	28.10	70	Low
Alpena	28,520	Non-adjacent rural	0	0.00	83	41.20	24	Low
Antrim	23,206	Non-adjacent rural	0	0.00	83	36.50	37	Low
Arenac	15,070	Adjacent rural	0	0.00	83	31.90	58	Moderate
Baraga	8,421	Non-adjacent rural	1	11.88	1	52.50	3	Low
Barry	60,540	Urban	0	0.00	83	24.80	77	Very low vulnerability
Bay	104,104	Urban	1	0.96	30	40.70	28	Moderate
Benzie	17,615	Non-adjacent rural	0	0.00	83	37.70	34	Very low vulnerability
Berrien	154,133	Urban	2	1.30	27	40.90	27	High
Branch	43,513	Adjacent rural	1	2.30	21	35.40	44	High
Calhoun	134,212	Urban	4	2.98	17	56.00	1	High
Cass	51,523	Urban	0	0.00	83	29.20	68	Moderate
Charlevoix	26,188	Non-adjacent rural	3	11.46	2	25.80	75	Low
Cheboygan	25,418	Non-adjacent rural	0	0.00	83	35.80	43	Low
Chippewa	37,629	Non-adjacent rural	2	5.32	7	41.10	26	Moderate
Clare	30,651	Adjacent rural	0	0.00	83	45.70	14	High
Clinton	78,389	Urban	0	0.00	83	19.00	82	Very low vulnerability
Crawford	13,892	Non-adjacent rural	0	0.00	83	50.80	4	Low
Delta	36,026	Non-adjacent rural	0	0.00	83	27.10	71	Low
Dickinson	25,439	Non-adjacent rural	0	0.00	83	40.70	28	Very low vulnerability
Eaton	109,456	Urban	0	0.00	83	30.90	63	Moderate
Emmet	33,104	Non-adjacent rural	2	6.04	5	30.40	66	Low
Genesee	407,875	Urban	29	7.11	3	50.30	5	High
Gladwin	25,279	Adjacent rural	0	0.00	83	37.40	35	Moderate
Gogebic	15,061	Non-adjacent rural	0	0.00	83	34.20	50	Low
Grand Traverse	92,181	Non-adjacent rural	5	5.42	6	34.40	47	Low
Gratiot	40,916	Adjacent rural	0	0.00	83	19.30	81	Moderate
Hillsdale	45,757	Adjacent rural	1	2.19	23	31.10	61	Moderate
Houghton	36,070	Non-adjacent rural	1	2.77	18	47.80	11	Low
Huron	31,349	Non-adjacent rural	0	0.00	83	38.80	32	Low
Ingham	290,587	Urban	18	6.19	4	43.70	19	Moderate
Ionia	64,300	Adjacent rural	0	0.00	83	27.10	71	Moderate
Iosco	25,197	Non-adjacent rural	0	0.00	83	48.60	8	Moderate
Iron	11,152	Non-adjacent rural	0	0.00	83	48.20	10	Low
Isabella	70,688	Adjacent rural	1	1.41	26	29.50	67	Moderate
Jackson	158,636	Urban	0	0.00	83	43.00	22	Moderate
Kalamazoo	262,745	Urban	6	2.28	22	36.30	38	Moderate
Kalkaska	17,585	Non-adjacent rural	0	0.00	83	36.20	39	Low
Kent	648,121	Urban	20	3.09	15	34.50	46	Moderate

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Keweenaw	2,111	Non-adjacent rural	0	0.00	83	Suppressed	-	Very low vulnerability
Lake	11,852	Non-adjacent rural	0	0.00	83	36.00	41	Moderate
Lapeer	88,038	Urban	0	0.00	83	34.40	47	Low
Leelanau	21,652	Non-adjacent rural	0	0.00	83	22.80	79	Very low vulnerability
Lenawee	98,381	Adjacent rural	0	0.00	83	31.40	59	Low
Livingston	189,754	Urban	1	0.53	33	28.70	69	Very low vulnerability
Luce	6,338	Non-adjacent rural	0	0.00	83	25.60	76	Low
Mackinac	10,780	Non-adjacent rural	0	0.00	83	33.40	54	Moderate
Macomb	870,325	Urban	9	1.03	29	45.90	13	Moderate
Manistee	24,457	Non-adjacent rural	1	4.09	10	49.00	7	Low
Marquette	66,686	Non-adjacent rural	2	3.00	16	37.30	36	Very low vulnerability
Mason	28,954	Non-adjacent rural	0	0.00	83	36.10	40	Moderate
Mecosta	43,251	Adjacent rural	1	2.31	20	26.60	73	Low
Menominee	23,074	Non-adjacent rural	0	0.00	83	34.20	50	Low
Midland	83,355	Urban	2	2.40	19	21.50	80	Very low vulnerability
Missaukee	15,028	Non-adjacent rural	0	0.00	83	33.00	56	Low
Monroe	149,727	Urban	5	3.34	12	41.20	24	Low
Montcalm	63,413	Urban	2	3.15	14	31.00	62	Moderate
Montmorency	9,265	Non-adjacent rural	0	0.00	83	26.20	74	Low
Muskegon	173,297	Urban	3	1.73	25	47.70	12	High
Newaygo	48,366	Adjacent rural	2	4.14	9	32.10	57	Moderate
Oakland	1,253,185	Urban	7	0.56	32	30.50	65	Low
Oceana	26,416	Adjacent rural	0	0.00	83	38.20	33	High
Ogemaw	20,898	Non-adjacent rural	0	0.00	83	45.50	16	Moderate
Ontonagon	5,877	Non-adjacent rural	0	0.00	83	45.20	17	Very low vulnerability
Osceola	23,290	Non-adjacent rural	0	0.00	83	34.40	47	Moderate
Oscoda	8,248	Non-adjacent rural	0	0.00	83	38.90	31	Moderate
Otsego	24,490	Non-adjacent rural	0	0.00	83	34.00	52	Low
Ottawa	286,558	Urban	12	4.19	8	23.20	78	Low
Presque Isle	12,714	Non-adjacent rural	0	0.00	83	45.60	15	Low
Roscommon	23,851	Non-adjacent rural	0	0.00	83	52.80	2	Low
Saginaw	191,821	Urban	7	3.65	11	40.60	30	High
Sanilac	41,295	Adjacent rural	0	0.00	83	33.20	55	Moderate
Schoolcraft	8,048	Non-adjacent rural	0	0.00	83	43.10	21	Low
Shiawassee	68,340	Adjacent rural	0	0.00	83	34.60	45	Very low vulnerability
St. Clair	159,247	Urban	2	1.26	28	50.20	6	Low
St. Joseph	60,836	Adjacent rural	2	3.29	13	36.00	41	Moderate
Tuscola	52,939	Adjacent rural	0	0.00	83	33.70	53	Low
Van Buren	75,358	Urban	0	0.00	83	42.70	23	High

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Washtenaw	367,000	Urban	0	0.00	83	30.90	63	Low
Wayne	1,757,299	Urban	36	2.05	24	43.70	19	Very high vulnerability
Wexford	33,256	Non-adjacent rural	0	0.00	83	48.50	9	Low

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. Seven (7) recovery residences in the state were not successfully geocoded due to lack of adequate address information, and thus were not assigned to a county.

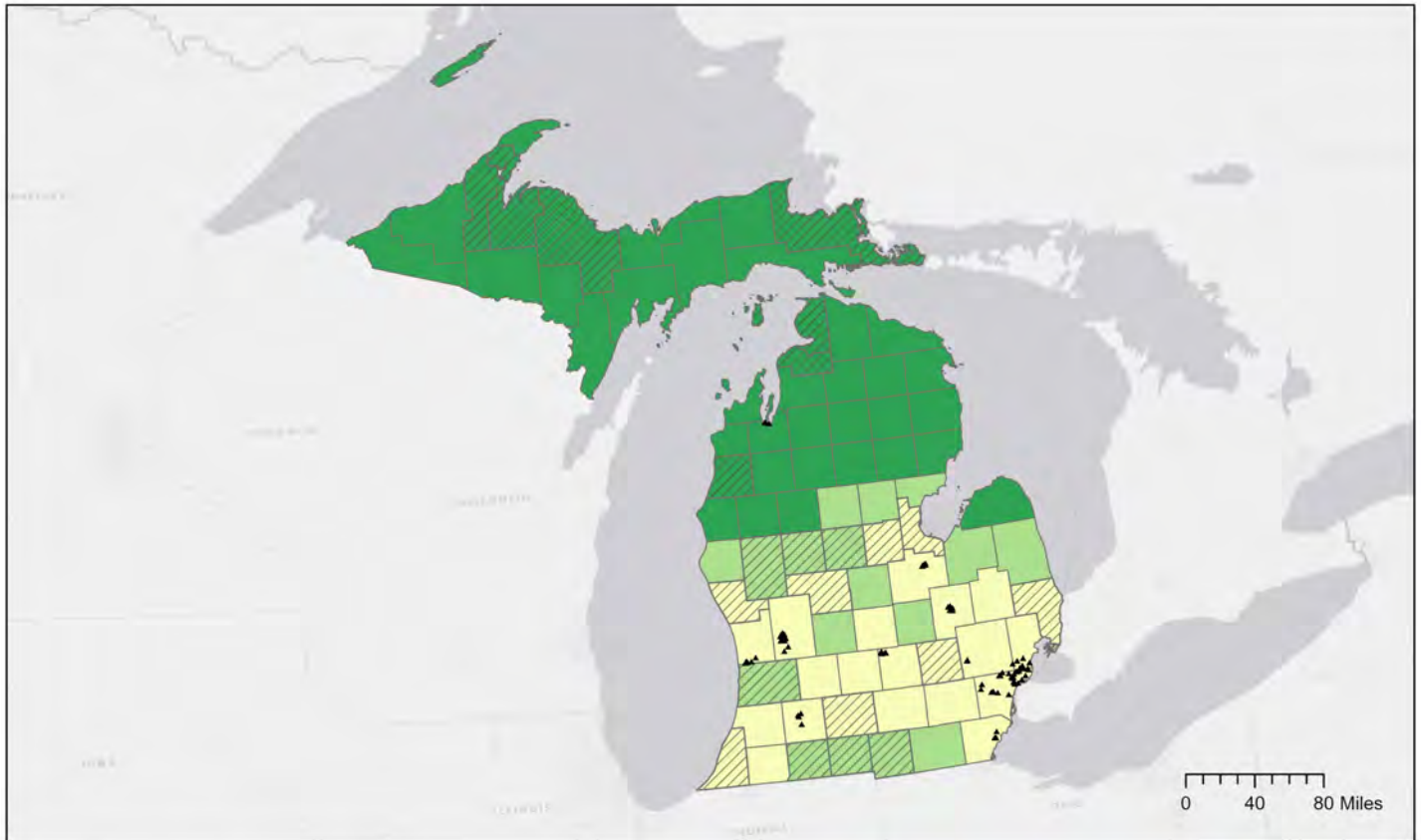
⁴Recovery residences availability per capita is ranked in order of decreasing recovery residence density per 100,000 population per county, with 1 (highest number of residences per 100,000) to 83 (lowest number of residences per 100,000 population). Counties without recovery residences were all assigned a tied rank of 83.

⁵Alcohol- 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.

⁶Mortality rate is ranked in order of decreasing alcohol- and drug-involved mortality from 1 (highest mortality per 100,000 population) to 82 (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 I 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

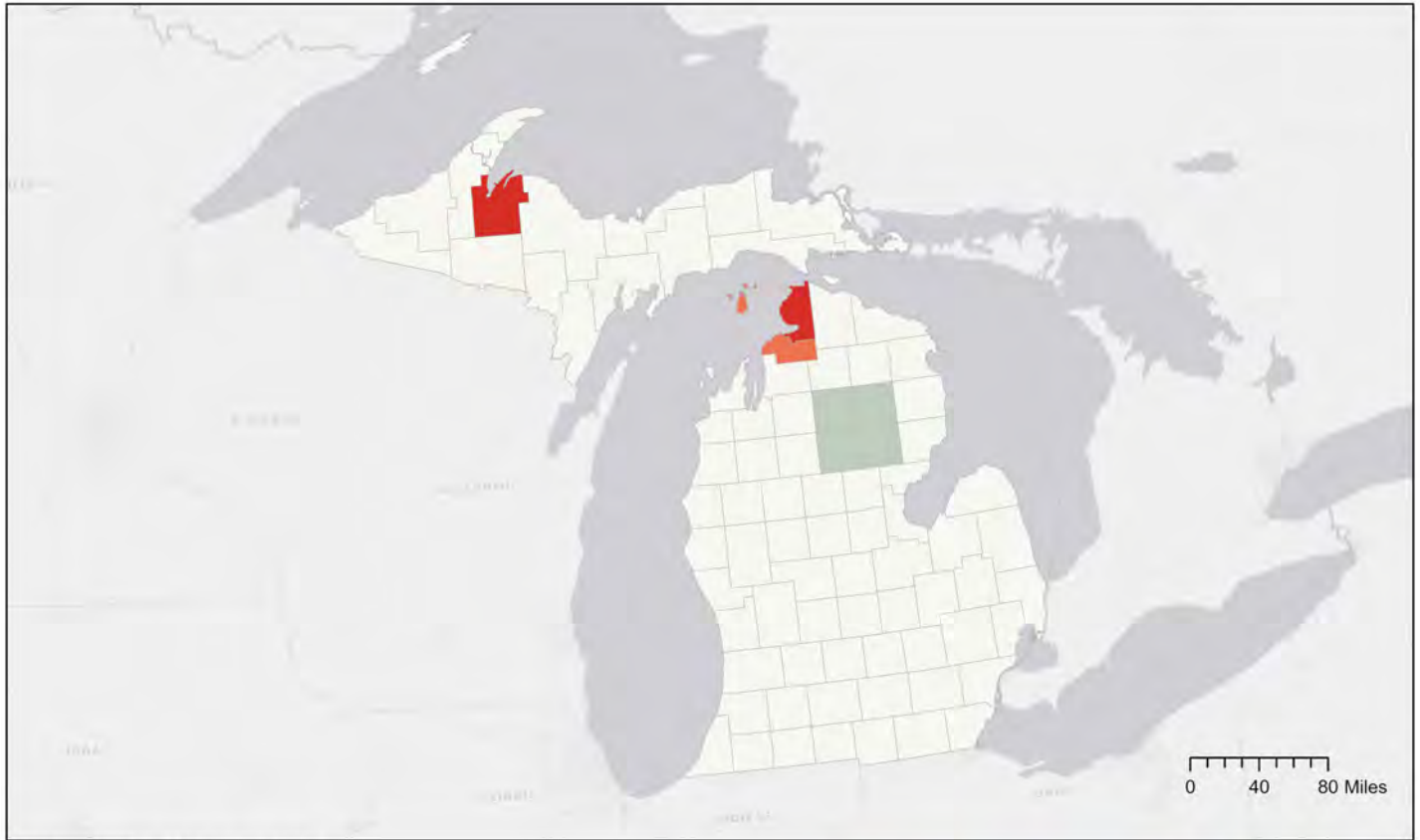
Counties with residence locations suppressed
(1-4 residences) to protect privacy



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



Figure 2. Hot/Cold Spot Analysis of Recovery Residence Locations



Hot Spot Analysis (Getis-Ord GI*)

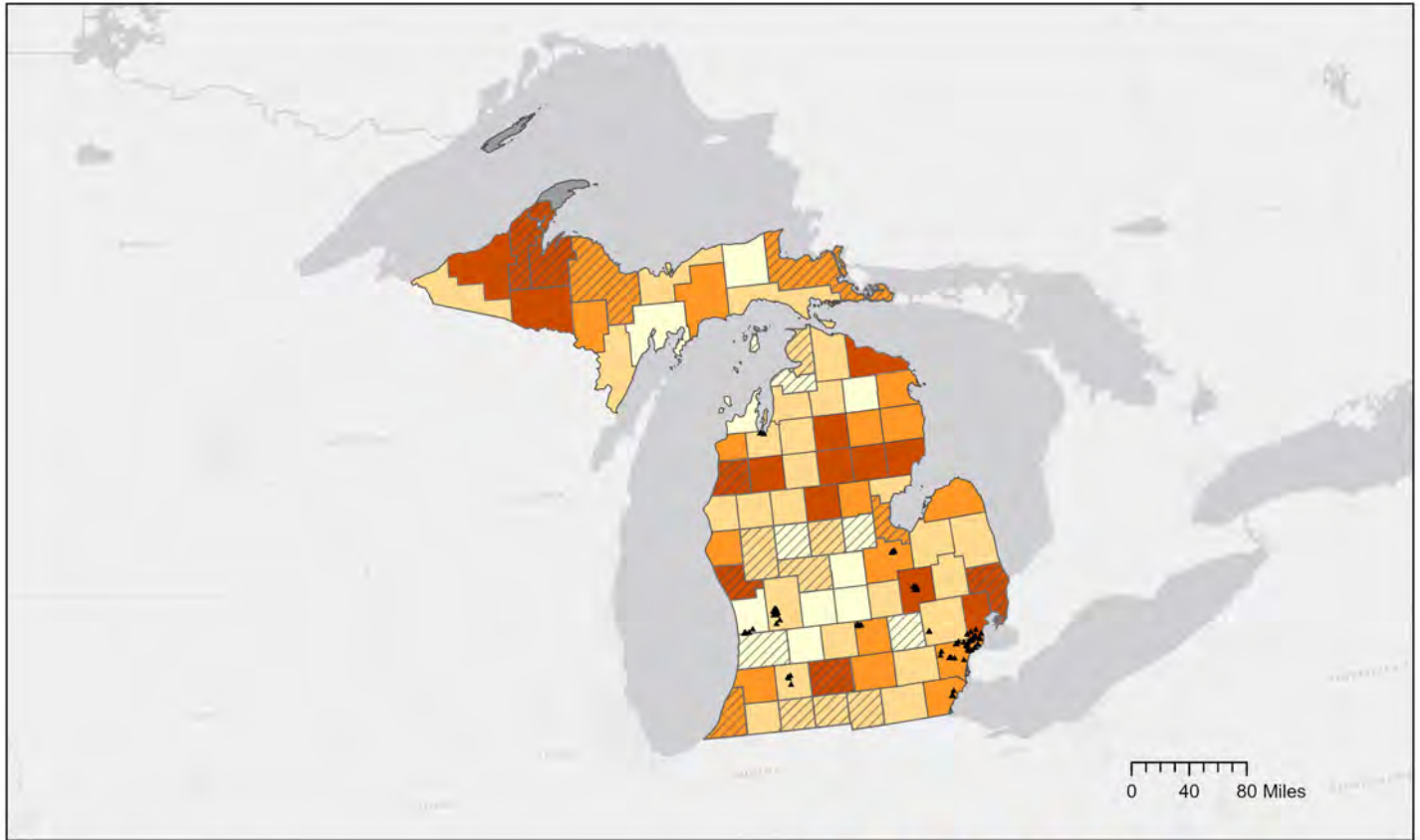
- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence



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



Figure 3. 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

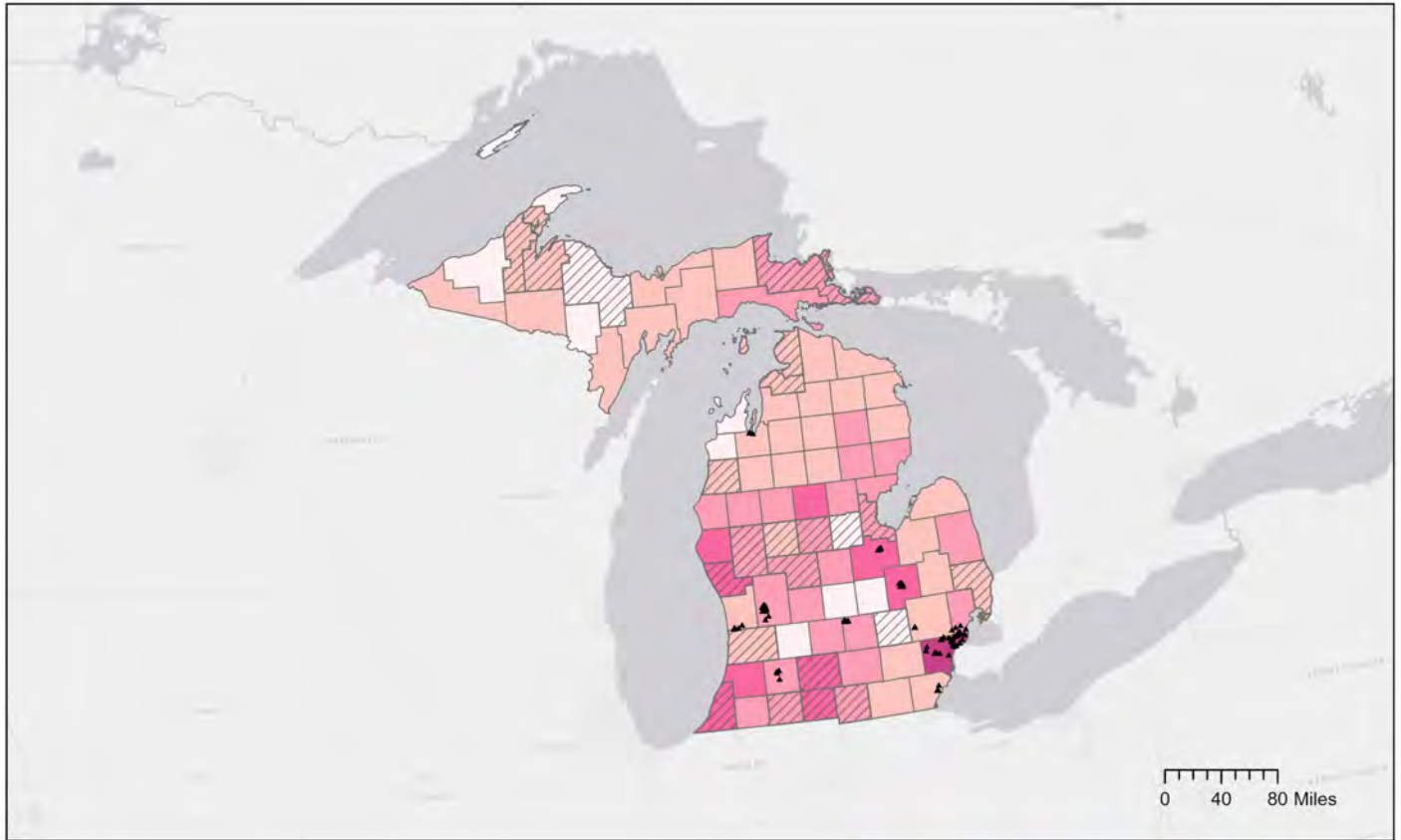
- 9 - 18
- 19 - 28
- 29 - 52
- 53 - 79
- Suppressed/Unreliable
- Counties with residence locations suppressed (1-4 residences) to protect privacy



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



Figure 4. 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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