

National Study of Treatment and Addiction Recovery Residences Report IOWA

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 32 recovery residences (1.02 houses per 100,000 population) in Iowa (see Table 1). Compared to other states (which include DC), Iowa ranked 47 in terms of recovery housing availability per capita. All residences in Iowa could be geocoded for these analyses. Cass County, an adjacent rural county, had the most recovery residences per 100,000 population, and 84 counties had no identified recovery residences, representing a mix of rural-urban classifications; 97 (all but two counties) had fewer than 5 recovery residences (see Figure 1).

We used geographic information systems to identify hot and cold spots in Iowa. 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 but no cold spots within the state (see Figure 2).

The age-adjusted alcohol- and drug-involved mortality rate (per 100,000 population) was 19.40 in Iowa for the years 2009-2019. Iowa ranked 24 on alcohol- and drug-involved mortality out of the 50 states and DC. Among the counties ranked, Monona County had the highest alcohol- and drug-involved mortality rate and Sioux County had the lowest alcohol- and drug-involved mortality rate. Of the three counties that had the highest mortality rates in Iowa (i.e., Monona, Cerro Gordo, and Appanoose), all three of them also ranked in the bottom half recovery housing availability per capita, suggesting more recovery resources may be needed (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, but this county was located in an area ranked in the bottom half of recovery housing availability per capita, again suggesting that more recovery resources may be needed (see Table 1 and Figure 4).

32

RESIDENCES
TOTAL

47

NATIONAL
AVAILABILITY
RANKING

84

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
IOWA	3,139,508		32	1.02	47	19.40	24	
Adair	7,085	Adjacent rural	0	0.00	99	29.60	36	Very low vulnerability
Adams	3,670	Non-adjacent rural	0	0.00	99	Suppressed	-	Very low vulnerability
Allamakee	13,813	Adjacent rural	0	0.00	99	31.10	28	Low
Appanoose	12,452	Non-adjacent rural	0	0.00	99	43.40	3	Low
Audubon	5,571	Adjacent rural	0	0.00	99	39.80	9	Very low vulnerability
Benton	25,636	Urban	0	0.00	99	21.70	72	Very low vulnerability
Black Hawk	132,393	Urban	2	1.51	10	36.80	15	Moderate
Boone	26,370	Adjacent rural	0	0.00	99	26.80	44	Very low vulnerability
Bremer	24,864	Urban	0	0.00	99	20.60	75	Very low vulnerability
Buchanan	21,118	Adjacent rural	0	0.00	99	24.40	57	Very low vulnerability
Buena Vista	20,058	Non-adjacent rural	0	0.00	99	18.20	84	High
Butler	14,628	Adjacent rural	0	0.00	99	24.60	54	Very low vulnerability
Calhoun	9,744	Non-adjacent rural	0	0.00	99	15.60	90	Very low vulnerability
Carroll	20,281	Non-adjacent rural	0	0.00	99	24.50	56	Very low vulnerability
Cass	13,091	Adjacent rural	1	7.64	1	31.70	24	Very low vulnerability
Cedar	18,457	Adjacent rural	0	0.00	99	18.60	83	Very low vulnerability
Cerro Gordo	42,834	Non-adjacent rural	0	0.00	99	48.20	2	Low
Cherokee	11,343	Adjacent rural	0	0.00	99	25.70	48	Very low vulnerability
Chickasaw	12,026	Adjacent rural	0	0.00	99	15.40	91	Very low vulnerability
Clarke	9,360	Adjacent rural	0	0.00	99	36.90	14	Moderate
Clay	16,211	Non-adjacent rural	0	0.00	99	30.80	30	Low
Clayton	17,625	Adjacent rural	0	0.00	99	22.50	65	Very low vulnerability
Clinton	46,909	Adjacent rural	2	4.26	6	27.10	43	Low
Crawford	17,034	Non-adjacent rural	0	0.00	99	29.00	39	Very high vulnerability
Dallas	87,099	Urban	0	0.00	99	18.00	85	Low
Davis	8,920	Non-adjacent rural	0	0.00	99	Suppressed	-	Low
Decatur	7,979	Non-adjacent rural	0	0.00	99	42.00	4	Low
Delaware	17,183	Adjacent rural	0	0.00	99	19.40	82	Very low vulnerability
Des Moines	39,386	Non-adjacent rural	1	2.54	9	32.10	21	Moderate
Dickinson	17,127	Non-adjacent rural	0	0.00	99	24.70	52	Very low vulnerability
Dubuque	96,982	Urban	0	0.00	99	24.70	52	Low

Emmet	9,438	Non-adjacent rural	0	0.00	99	30.60	31	Low
Fayette	19,803	Adjacent rural	0	0.00	99	27.50	42	Very low vulnerability
Floyd	15,786	Non-adjacent rural	0	0.00	99	20.20	78	Moderate
Franklin	10,162	Non-adjacent rural	0	0.00	99	21.40	73	Very low vulnerability
Fremont	6,946	Adjacent rural	0	0.00	99	40.10	7	Very low vulnerability
Greene	8,950	Adjacent rural	0	0.00	99	28.00	41	Very low vulnerability
Grundy	12,299	Urban	0	0.00	99	22.20	66	Very low vulnerability
Guthrie	10,669	Urban	0	0.00	99	21.40	73	Very low vulnerability
Hamilton	14,997	Adjacent rural	0	0.00	99	22.00	68	Low
Hancock	10,802	Non-adjacent rural	0	0.00	99	23.10	62	Very low vulnerability
Hardin	17,061	Adjacent rural	0	0.00	99	24.60	54	Low
Harrison	14,089	Urban	0	0.00	99	30.00	33	Very low vulnerability
Henry	19,941	Adjacent rural	0	0.00	99	20.00	79	Low
Howard	9,226	Adjacent rural	0	0.00	99	20.40	77	Very low vulnerability
Humboldt	9,554	Non-adjacent rural	0	0.00	99	17.40	88	Very low vulnerability
Ida	6,901	Adjacent rural	0	0.00	99	Suppressed	-	Very low vulnerability
Iowa	16,189	Adjacent rural	0	0.00	99	23.00	63	Very low vulnerability
Jackson	19,401	Adjacent rural	0	0.00	99	28.20	40	Very low vulnerability
Jasper	36,971	Adjacent rural	2	5.41	5	33.10	20	Very low vulnerability
Jefferson	18,148	Non-adjacent rural	0	0.00	99	26.00	46	Low
Johnson	148,577	Urban	2	1.35	11	25.40	50	Low
Jones	20,559	Urban	0	0.00	99	21.90	69	Very low vulnerability
Keokuk	10,188	Adjacent rural	0	0.00	99	17.80	86	Very low vulnerability
Kossuth	14,978	Non-adjacent rural	0	0.00	99	15.10	93	Very low vulnerability
Lee	34,227	Non-adjacent rural	0	0.00	99	36.00	17	Low
Linn	223,861	Urban	1	0.45	15	31.80	23	Low
Louisa	11,178	Adjacent rural	0	0.00	99	21.90	69	Low
Lucas	8,583	Adjacent rural	0	0.00	99	29.30	37	Low
Lyon	11,776	Adjacent rural	0	0.00	99	16.40	89	Very low vulnerability
Madison	16,012	Urban	0	0.00	99	19.70	80	Very low vulnerability
Mahaska	22,164	Non-adjacent rural	0	0.00	99	25.50	49	Low
Marion	33,172	Adjacent rural	0	0.00	99	25.90	47	Low
Marshall	39,964	Adjacent rural	0	0.00	99	40.40	6	High
Mills	15,034	Urban	0	0.00	99	22.90	64	Very low vulnerability
Mitchell	10,608	Non-adjacent rural	0	0.00	99	12.60	94	Very low vulnerability

Monona	8,730	Adjacent rural	0	0.00	99	50.00	1	Very low vulnerability
Monroe	7,807	Non-adjacent rural	0	0.00	99	31.20	26	Low
Montgomery	10,053	Adjacent rural	0	0.00	99	29.90	34	Low
Muscatine	42,889	Adjacent rural	0	0.00	99	25.00	51	Moderate
O'Brien	13,835	Non-adjacent rural	0	0.00	99	17.60	87	Low
Osceola	6,052	Non-adjacent rural	0	0.00	99	29.80	35	Very low vulnerability
Page	15,268	Adjacent rural	0	0.00	99	24.20	59	Low
Palo Alto	9,003	Non-adjacent rural	0	0.00	99	31.50	25	Very low vulnerability
Plymouth	25,068	Urban	0	0.00	99	24.30	58	Low
Pocahontas	6,797	Non-adjacent rural	0	0.00	99	20.50	76	Very low vulnerability
Polk	479,612	Urban	5	1.04	12	38.40	11	Moderate
Pottawattamie	93,393	Urban	3	3.21	7	35.10	19	Moderate
Poweshiek	18,388	Non-adjacent rural	1	5.44	4	32.10	21	Very low vulnerability
Ringgold	4,964	Non-adjacent rural	0	0.00	99	29.20	38	Very low vulnerability
Sac	9,802	Non-adjacent rural	0	0.00	99	21.90	69	Very low vulnerability
Scott	172,446	Urban	1	0.58	14	41.10	5	Moderate
Shelby	11,606	Adjacent rural	0	0.00	99	31.00	29	Very low vulnerability
Sioux	34,827	Non-adjacent rural	0	0.00	99	11.50	95	Low
Story	96,941	Urban	1	1.03	13	22.10	67	Low
Tama	17,032	Adjacent rural	0	0.00	99	36.20	16	Low
Taylor	6,167	Non-adjacent rural	0	0.00	99	Suppressed	-	Low
Union	12,358	Adjacent rural	0	0.00	99	37.40	13	Low
Van Buren	7,150	Non-adjacent rural	0	0.00	99	23.70	61	Low
Wapello	35,141	Non-adjacent rural	2	5.69	3	35.20	18	High
Warren	50,076	Urban	0	0.00	99	24.20	59	Very low vulnerability
Washington	22,100	Urban	0	0.00	99	19.50	81	Low
Wayne	6,429	Non-adjacent rural	0	0.00	99	31.20	26	Low
Webster	36,545	Non-adjacent rural	1	2.74	8	38.70	10	Low
Winnebago	10,534	Non-adjacent rural	0	0.00	99	30.60	31	Low
Winneshiek	20,262	Non-adjacent rural	0	0.00	99	15.20	92	Very low vulnerability
Woodbury	102,586	Urban	7	6.82	2	37.60	12	High
Worth	7,445	Non-adjacent rural	0	0.00	99	39.90	8	Very low vulnerability
Wright	12,739	Non-adjacent rural	0	0.00	99	26.40	45	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.

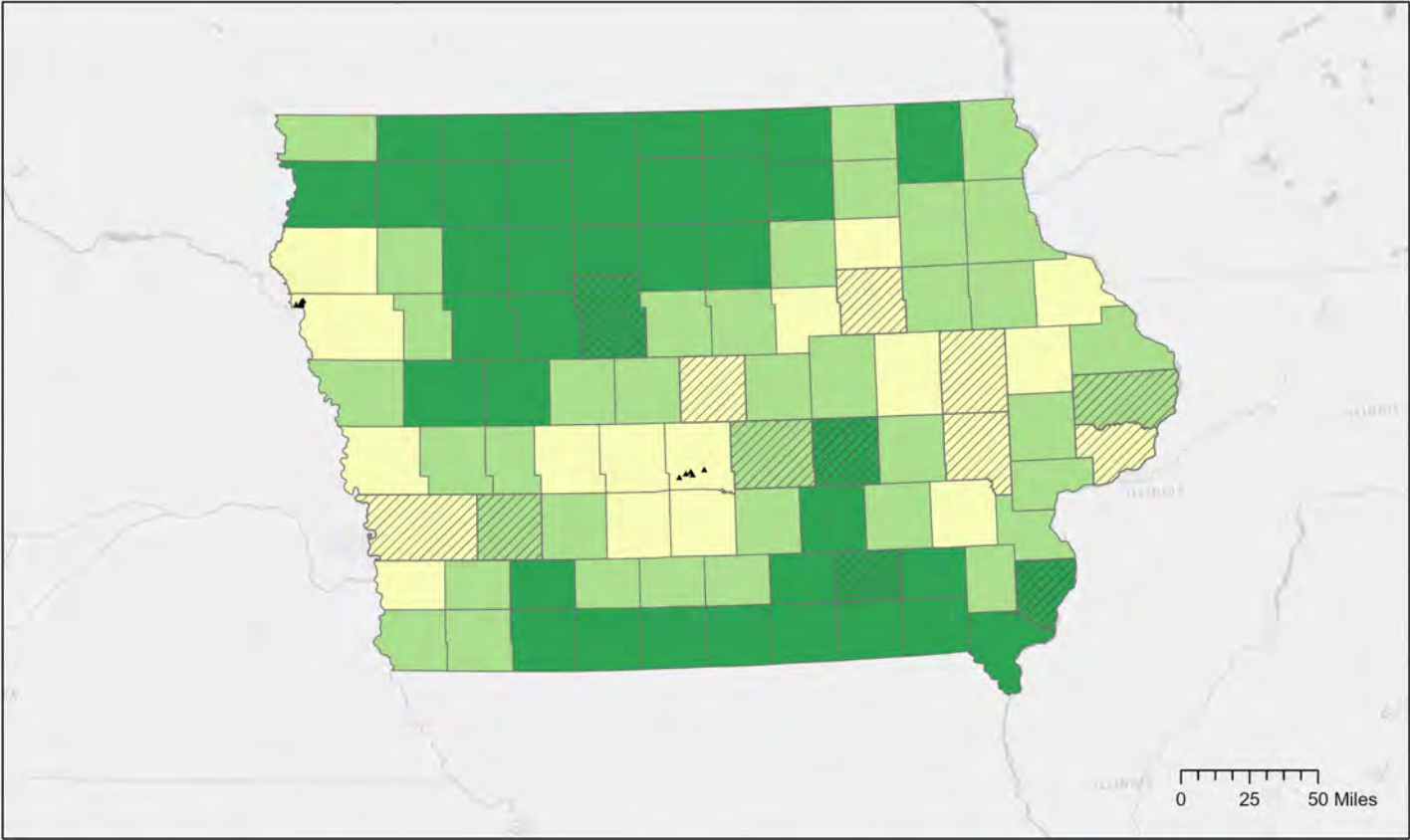
⁴Recovery residences availability per capita is ranked in order of decreasing recovery residence density per 100,000 population per county, with 1 (highest number of residences per 100,000) to 99 (lowest number of residences per 100,000 population). Counties without recovery residences were all assigned a tied rank of 99.

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 95 (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. [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



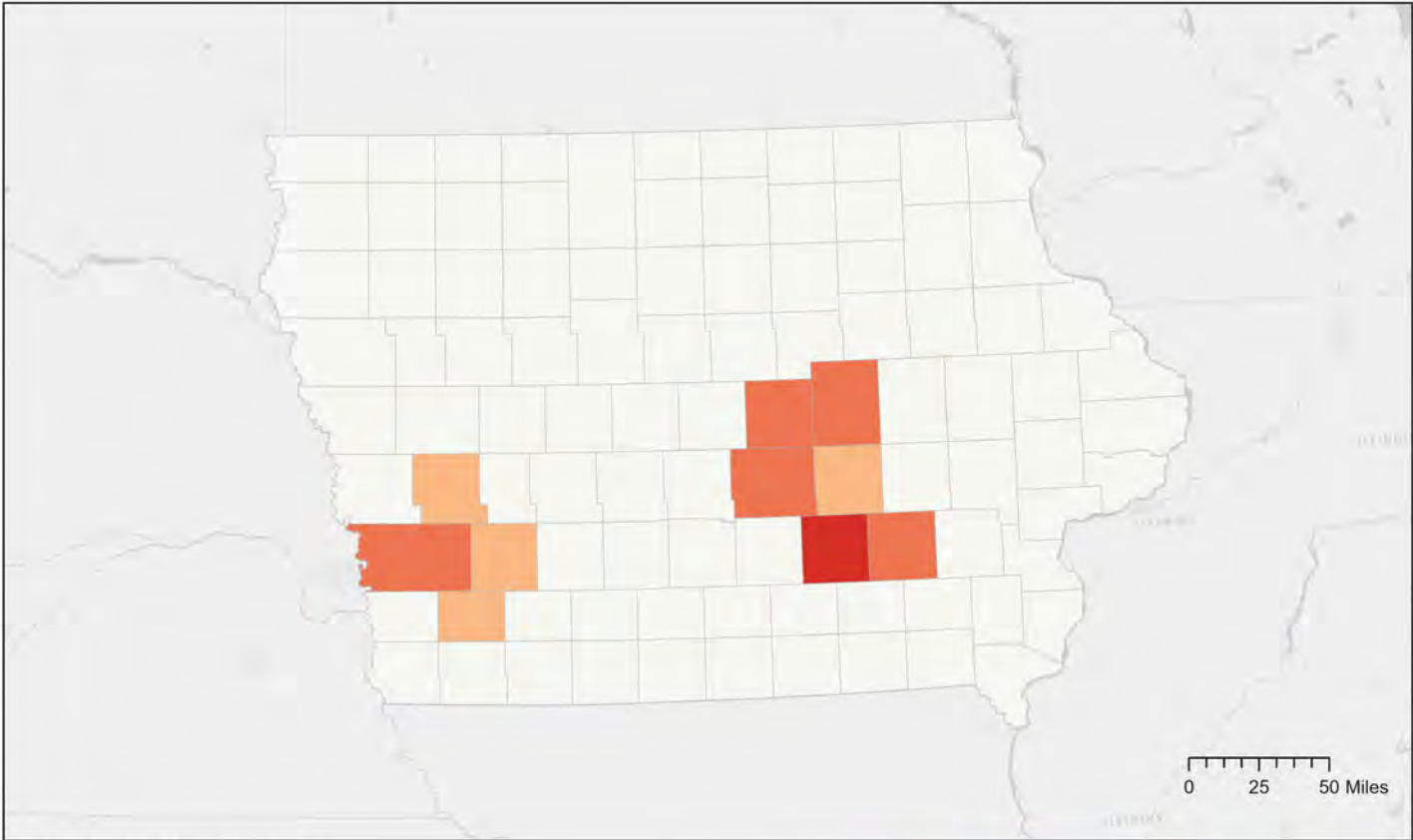
- ▲ Recovery residences
- Rural-Urban Classification Code (RUCC)
 - Urban
 - Adjacent rural
 - Non-adjacent rural
 - Counties with residence locations suppressed (1-4 residences) to protect privacy



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



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



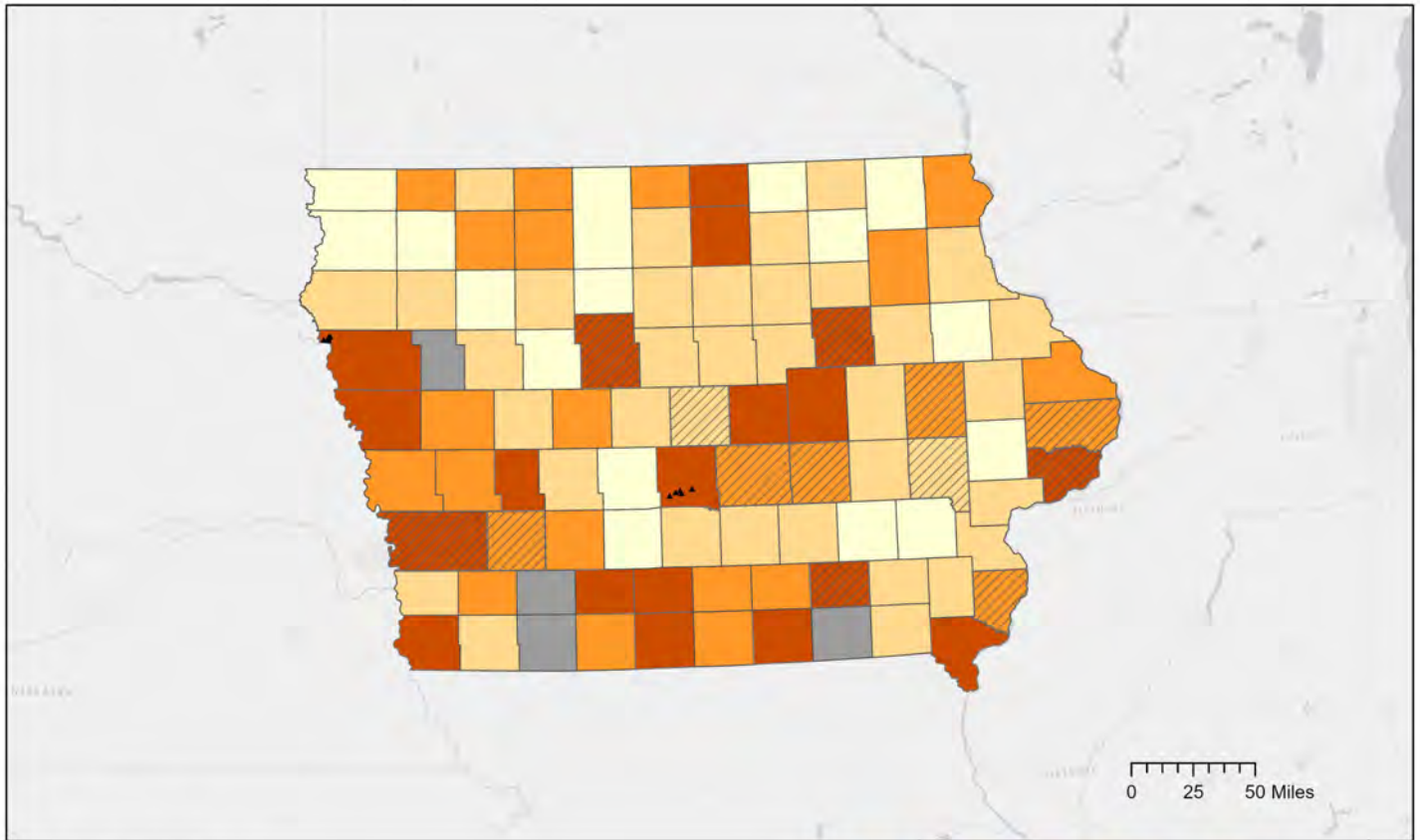
- Hot Spot Analysis (Getis-Ord GI*)**
- Cold Spot with 99% Confidence
 - Cold Spot with 95% Confidence
 - Cold Spot with 90% Confidence
 - Not Significant
 - Hot Spot with 90% Confidence
 - Hot Spot with 95% Confidence
 - Hot Spot with 99% Confidence



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



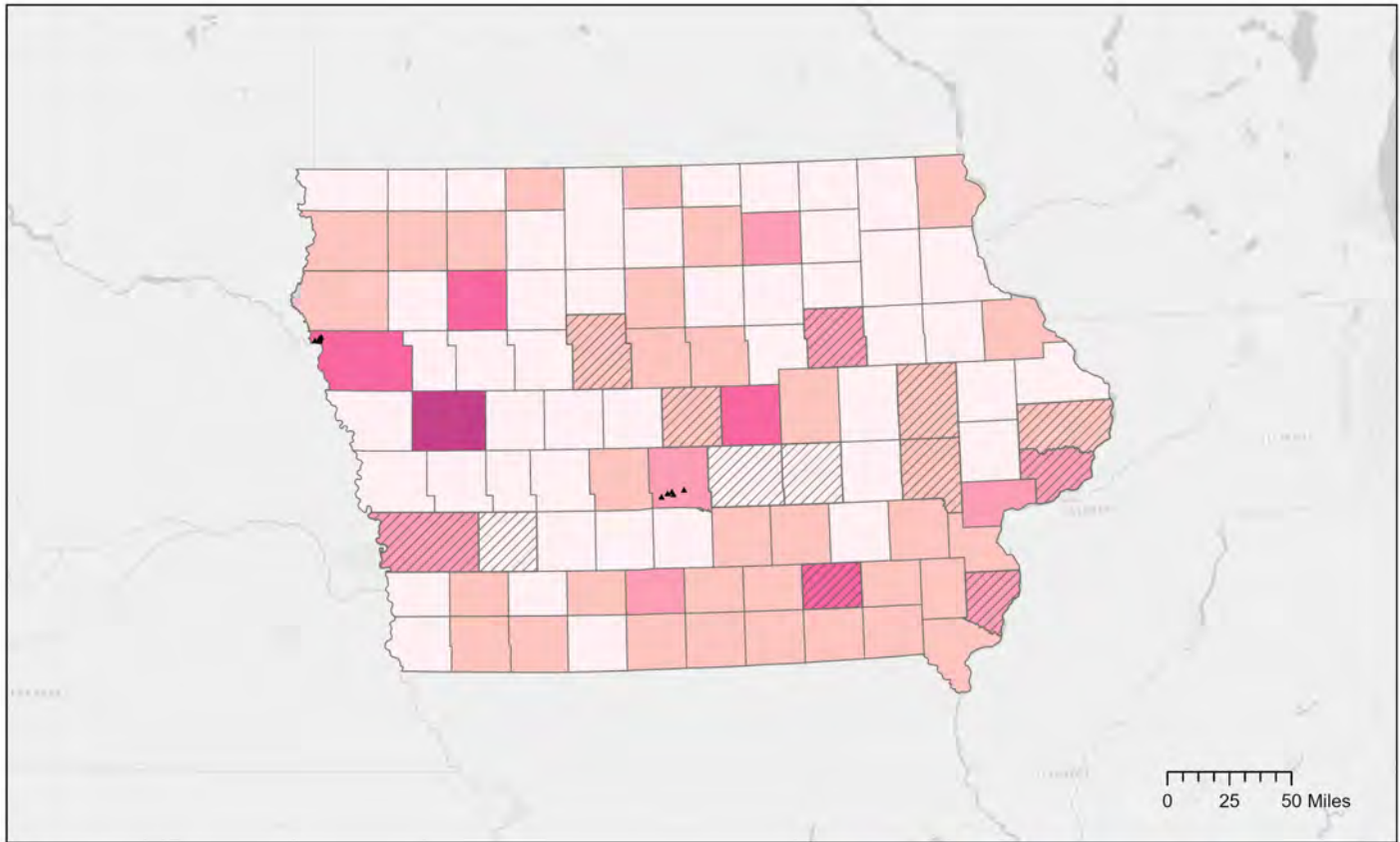
- ▲ Recovery residences
- Age-adjusted alcohol and drug mortality rate per 100,000 population
- 9 - 18
- 19 - 28
- 29 - 52
- 53 - 79
- Suppressed/Unreliable
- Counties with residence locations suppressed (1-4 residences) to protect privacy



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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