

# National Study of Treatment and Addiction Recovery Residences Report Pennsylvania

**The National Study of Treatment and Addiction Recovery Residences (NSTARR)** constitutes the largest and most diverse study of recovery housing in the US 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 347 recovery residences (2.71 houses per 100,000 population) in Pennsylvania (see Table 1). Compared to other states (which include DC), Pennsylvania ranked 26 in terms of recovery housing availability per capita. Ninety-eight percent of residences in Pennsylvania could be geocoded for these analyses. Bucks County, an urban county, had the most recovery residences per 100,000 population, and 37 counties had no identified recovery residences, representing a mix of rural-urban classifications; 54 (81% of counties in the state) had fewer than 5 recovery residences (see Figure 1).

We used geographic information systems to identify hot and cold spots in Pennsylvania. 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 12.10 in Pennsylvania for the years 2009-2019. Pennsylvania ranked 46 on alcohol- and drug-involved mortality out of the 50 states and DC. Among the counties ranked, Fayette County had the highest alcohol- and drug-involved mortality rate and Centre County had the lowest alcohol- and drug-involved mortality rate. Of the three counties that had the highest mortality rates in Pennsylvania (i.e., Fayette, Philadelphia, and Cambria), all three 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. One county was classified as having very high vulnerability, and that 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).

347  
RESIDENCES  
TOTAL

26  
NATIONAL  
AVAILABILITY  
RANKING

37  
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>
<b>PENNSYLVANIA</b>	12,791,530		347	2.71	26	12.10	46	
<b>Adams</b>	102,470	Urban	0	0.00	67	23.20	57	Low
<b>Allegheny</b>	1,221,744	Urban	5	0.41	29	44.20	15	Low
<b>Armstrong</b>	65,867	Urban	1	1.52	17	46.40	7	Very low vulnerability
<b>Beaver</b>	165,833	Urban	2	1.21	21	45.50	9	Low
<b>Bedford</b>	48,337	Adjacent rural	0	0.00	67	28.60	47	Low
<b>Berks</b>	418,025	Urban	4	0.96	24	30.60	39	High
<b>Blair</b>	123,157	Urban	5	4.06	5	40.90	19	Low
<b>Bradford</b>	60,963	Adjacent rural	0	0.00	67	28.50	48	Low
<b>Bucks</b>	626,806	Urban	86	13.72	1	36.50	28	Low
<b>Butler</b>	186,899	Urban	6	3.21	7	36.90	27	Very low vulnerability
<b>Cambria</b>	133,009	Urban	2	1.50	18	51.40	3	Moderate
<b>Cameron</b>	4,611	Non-adjacent rural	0	0.00	67	Suppressed	-	Low
<b>Carbon</b>	63,887	Urban	1	1.57	16	45.20	12	Low
<b>Centre</b>	161,960	Urban	0	0.00	67	14.50	66	Low
<b>Chester</b>	519,560	Urban	6	1.15	22	27.40	50	Low
<b>Clarion</b>	38,715	Adjacent rural	0	0.00	67	28.80	46	Moderate
<b>Clearfield</b>	79,908	Adjacent rural	0	0.00	67	27.60	49	Moderate
<b>Clinton</b>	38,915	Adjacent rural	0	0.00	67	26.10	51	Low
<b>Columbia</b>	65,715	Urban	0	0.00	67	29.00	44	Low
<b>Crawford</b>	85,665	Adjacent rural	0	0.00	67	35.80	30	Moderate
<b>Cumberland</b>	249,328	Urban	1	0.40	30	25.40	54	Low
<b>Dauphin</b>	275,632	Urban	6	2.18	13	34.00	34	Moderate
<b>Delaware</b>	564,554	Urban	11	1.95	14	45.50	9	Moderate
<b>Elk</b>	30,340	Non-adjacent rural	0	0.00	67	37.60	26	Low
<b>Erie</b>	273,835	Urban	2	0.73	28	39.80	23	Moderate
<b>Fayette</b>	131,302	Urban	1	0.76	27	70.60	1	Moderate
<b>Forest</b>	7,313	Non-adjacent rural	0	0.00	67	24.20	56	Moderate
<b>Franklin</b>	154,147	Urban	3	1.95	15	25.20	55	Moderate
<b>Fulton</b>	14,506	Adjacent rural	0	0.00	67	29.60	42	Low
<b>Greene</b>	36,870	Adjacent rural	3	8.14	4	46.60	6	Moderate
<b>Huntingdon</b>	45,369	Adjacent rural	0	0.00	67	22.80	58	Low
<b>Indiana</b>	85,032	Adjacent rural	0	0.00	67	45.60	8	Low
<b>Jefferson</b>	43,846	Non-adjacent rural	0	0.00	67	33.20	35	Moderate
<b>Juniata</b>	24,624	Adjacent rural	0	0.00	67	18.30	62	Moderate
<b>Lackawanna</b>	210,652	Urban	2	0.95	25	40.30	21	Moderate
<b>Lancaster</b>	540,999	Urban	47	8.69	3	25.50	53	Moderate
<b>Lawrence</b>	86,727	Adjacent rural	1	1.15	23	47.50	5	Moderate
<b>Lebanon</b>	139,729	Urban	0	0.00	67	18.30	62	High
<b>Lehigh</b>	365,052	Urban	10	2.74	9	34.90	32	High
<b>Luzerne</b>	317,663	Urban	4	1.26	20	42.50	17	Moderate

<b>Lycoming</b>	114,330	Urban	0	0.00	67	38.00	25	Moderate
<b>Mc Kean</b>	41,401	Non-adjacent rural	0	0.00	67	29.00	44	Moderate
<b>Mercer</b>	111,518	Urban	0	0.00	67	45.30	11	Moderate
<b>Mifflin</b>	46,276	Adjacent rural	0	0.00	67	25.70	52	Moderate
<b>Monroe</b>	168,032	Urban	4	2.38	11	34.40	33	Moderate
<b>Montgomery</b>	823,823	Urban	18	2.18	12	29.40	43	Low
<b>Montour</b>	18,259	Urban	0	0.00	67	36.30	29	Low
<b>Northampton</b>	302,809	Urban	4	1.32	19	33.00	37	Low
<b>Northumberland</b>	91,761	Adjacent rural	0	0.00	67	33.10	36	Moderate
<b>Perry</b>	46,053	Urban	0	0.00	67	30.40	41	Very low vulnerability
<b>Philadelphia</b>	1,579,075	Urban	48	3.04	8	55.80	2	Very high vulnerability
<b>Pike</b>	55,453	Urban	0	0.00	67	44.00	16	Low
<b>Potter</b>	16,806	Non-adjacent rural	0	0.00	67	22.60	59	Low
<b>Schuylkill</b>	142,674	Adjacent rural	0	0.00	67	41.10	18	Moderate
<b>Snyder</b>	40,483	Non-adjacent rural	0	0.00	67	17.30	64	Low
<b>Somerset</b>	74,361	Adjacent rural	0	0.00	67	30.60	39	Low
<b>Sullivan</b>	6,135	Adjacent rural	0	0.00	67	40.90	19	Low
<b>Susquehanna</b>	40,970	Adjacent rural	0	0.00	67	40.00	22	Low
<b>Tioga</b>	40,944	Adjacent rural	1	2.44	10	22.50	60	Low
<b>Union</b>	45,111	Adjacent rural	0	0.00	67	15.20	65	Low
<b>Venango</b>	51,818	Adjacent rural	0	0.00	67	35.00	31	Moderate
<b>Warren</b>	39,756	Adjacent rural	0	0.00	67	22.30	61	Low
<b>Washington</b>	207,212	Urban	7	3.38	6	44.90	13	Low
<b>Wayne</b>	51,422	Adjacent rural	0	0.00	67	39.20	24	Low
<b>Westmoreland</b>	352,590	Urban	3	0.85	26	48.60	4	Very low vulnerability
<b>Wyoming</b>	27,327	Urban	0	0.00	67	44.60	14	Very low vulnerability
<b>York</b>	445,565	Urban	45	10.10	2	32.00	38	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. Eight (8) recovery residences in the state were not successfully geocoded due to lack of adequate address information, and thus were not assigned to a county.

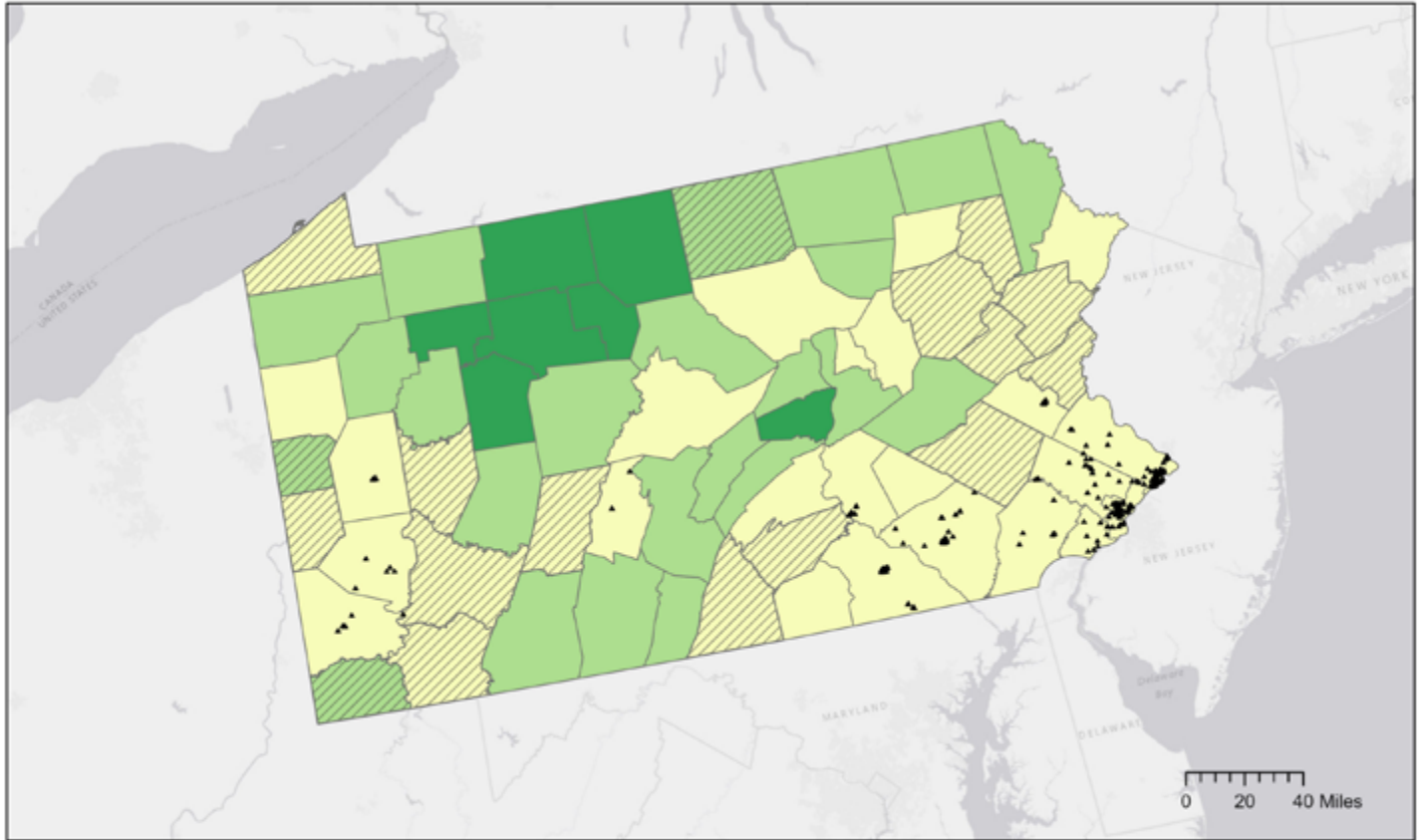
<sup>4</sup>Recovery residences availability per capita is ranked in order of decreasing recovery residence density per 100,000 population per county, with 1 (highest number of residences per 100,000) to 67 (lowest number of residences per 100,000 population). Counties without recovery residences were all assigned a tied rank of 67.

<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 66 (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 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



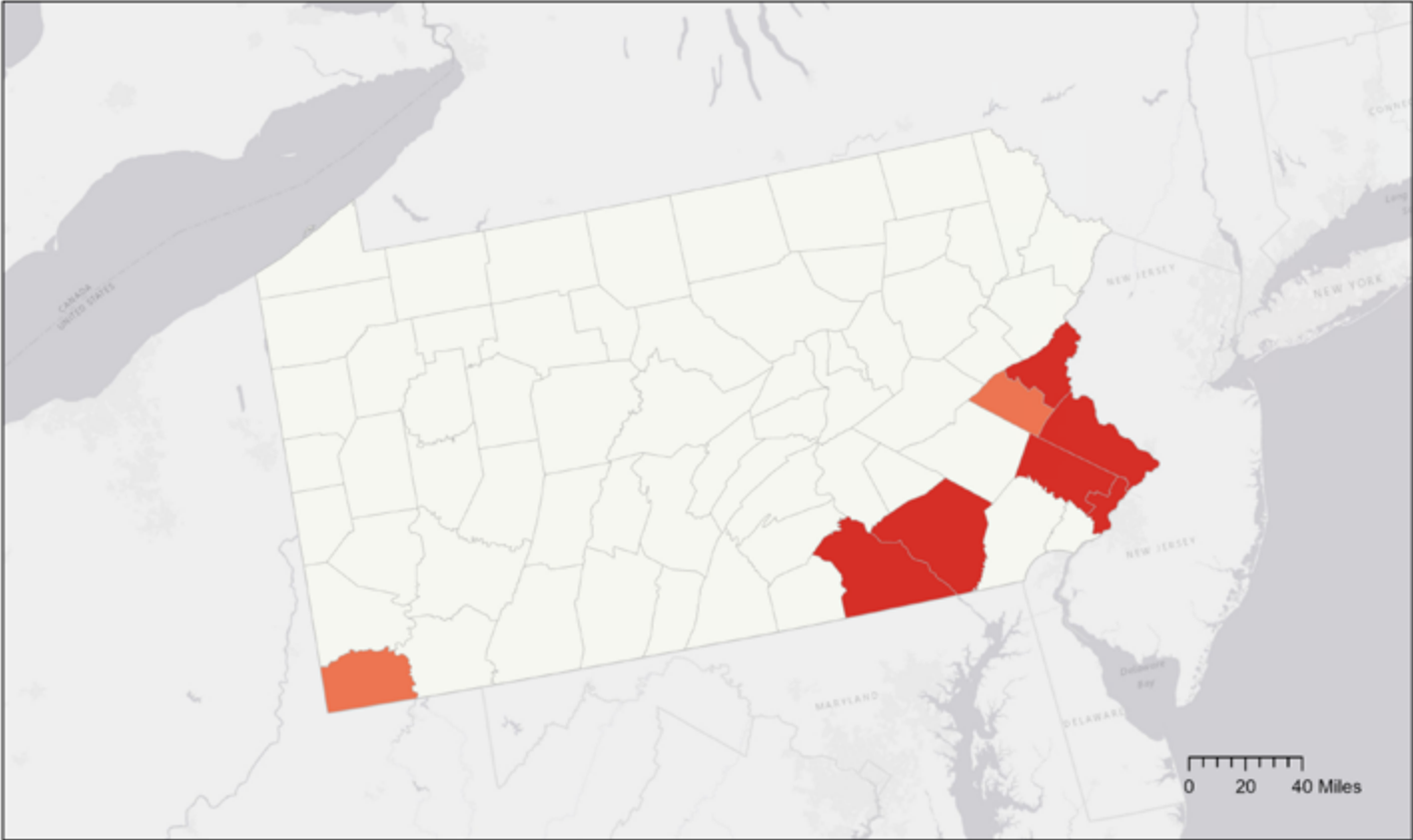
- ▲ Recovery residences
- Rural-Urban Classification Code (RUCC)**
- Urban
- Adjacent rural
- Non-adjacent rural
- Counties with residence locations suppressed (1-4 residences) to protect privacy



Data Credits: Esri, HERE, Garmin, USGS, EPA, 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\*)**

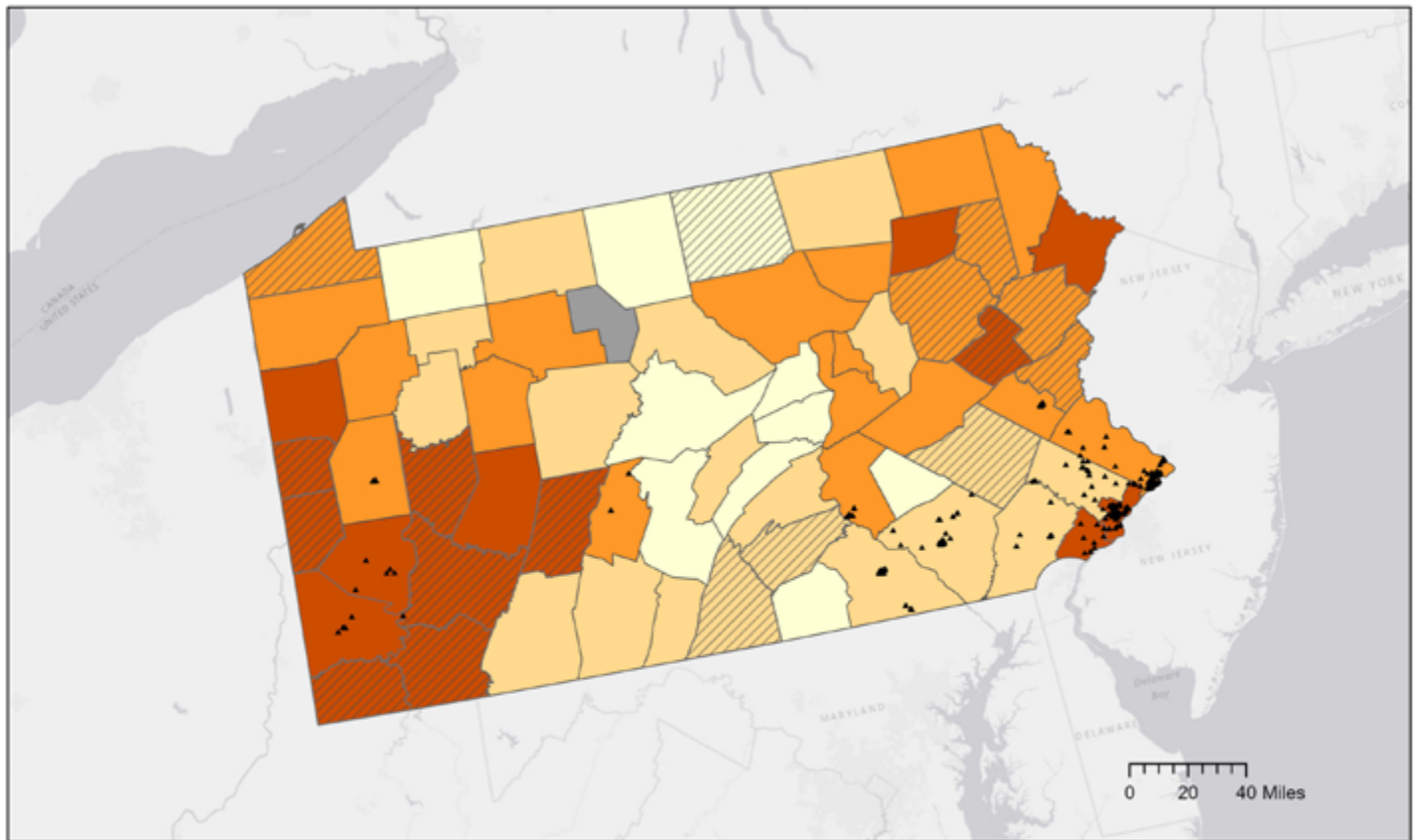
- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence



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



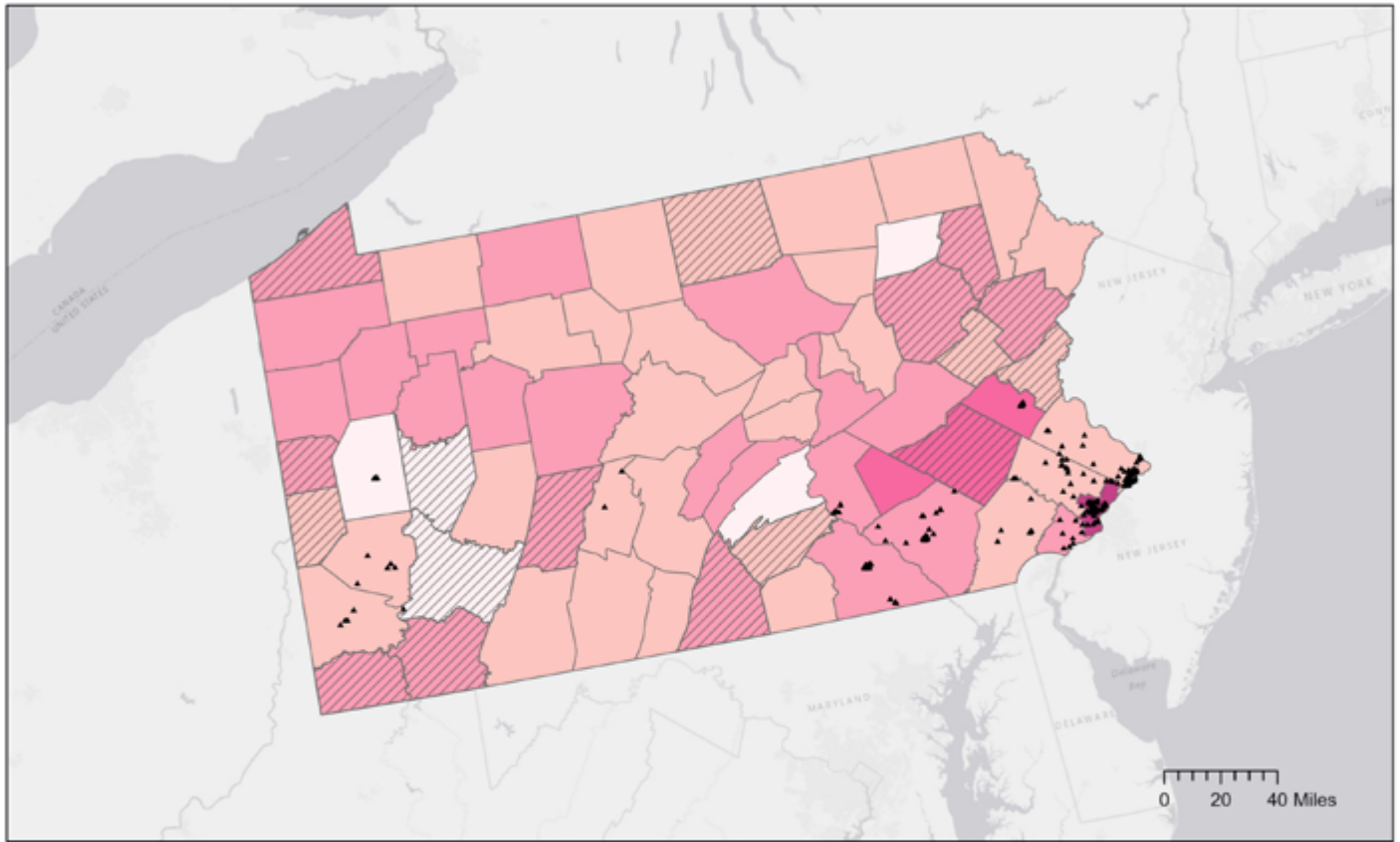
- ▲ Recovery residences
- Age-adjusted alcohol and drug mortality rate per 100,000 population
- 14 - 23
- 24 - 32
- 33 - 42
- 43 - 70
- Suppressed/Unreliable
- Counties with residence locations suppressed (1-4 residences) to protect privacy



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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