

Addiction-related treatment service disparities in Middle Atlantic counties: State and urban-rural availability comparisons



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Background

- New Jersey (NJ), New York (NY), and Pennsylvania (PA), states of the Middle Atlantic division (U.S. Census Bureau, 2008), have each been hit hard by addiction.
- In 2018, PA ranked 3rd, NY 5th, and NJ 7th for state-level drug deaths, and PA and NJ ranked 4th and 7th in the rate of drug deaths among all states (CDC, 2020).
- Each state was in the top 10 for new HIV diagnoses in 2018 (CDC, 2020), which when combined with addiction can hurt treatment outcomes (Ho et al., 2020; Kalichman et al., 2017), and be further aggravated by co-occurring psychiatric disorders (Lister et al., 2015; Lister et al., 2019), common in people with addiction.
- As an array of addiction-related treatment services (ARTS) are typically warranted, there are sufficient concerns for rural communities and their disparities in available services (Ellis et al., 2009; Kaufman et al., 2015; Lister et al., 2020; Rosenblatt et al., 2015).
- To date, however, studies have yet to investigate community-level supply of ARTS in the Middle Atlantic, or examine rural disparities in the division or its states.

Objectives

- Our objectives were to:
 - Examine ARTS disparities between states.
 - Conduct county-level comparisons of urban-rural ARTS disparities across the Middle Atlantic.
 - Conduct county-level comparisons of urban-rural ARTS disparities within NJ, NY, and PA, specifically.
- We hypothesized rural disparities across the division and within states. Due to their rural composition, we predicted state-level disparities for PA and NY (vs. NJ).

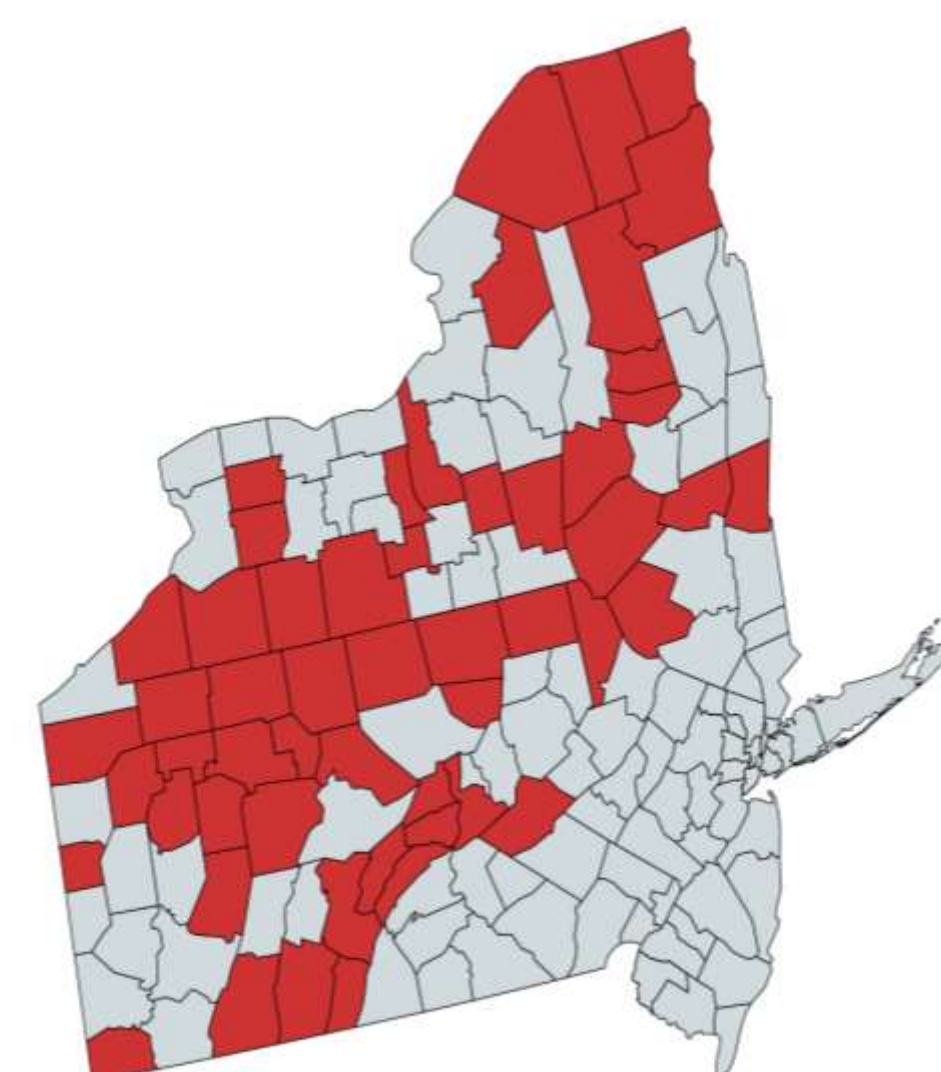
Methods

- In May 2020, we calculated supply statistics per 100,000 residents after extracting data on the seven ARTS measures below.
 - SAMHSA:** opioid treatment programs (OTPs), non-OTP specialty substance use disorder treatment facilities, mental health facilities.
 - CDC:** specialty and non-specialty treatment locations for HIV, HCV, and HBV.
 - NCPG:** certified gambling counselors.
- We removed duplicate locations, deleted OTP facilities from the substance use disorder list, and categorized facility addresses using Rural-Urban Continuum Codes (USDA, 2019).
- An established scheme (Lister et al., 2020) of urban (RUCCs=1-3) and rural (RUCCs=4-9) counties was used in statistical analyses with one exception. The NJ-specific analysis used the SORH scheme, which categorized seven of the 21 counties as rural, to mitigate the lack of RUCC-defined rural counties.

Results

- Of the 150 Middle Atlantic counties, 36.0% ($n=54$) were rural (using RUCCs). PA ($n=67$; 44.8% rural) had the most counties, followed by NY ($n=62$; 38.7% rural), and NJ ($n=21$, 0% rural).

Figure 1: Rural and Urban Counties of the Middle Atlantic Division



Note. Urban (RUCCs=1-3) and rural counties (RUCCs=4-9) are displayed in gray and red colors above, respectively.

Results (cont.)

- In state comparisons, PA demonstrated disparities (vs. NJ & NY) for infectious diseases. States also differed in their mental health and gambling supply.

Table 1: County-level comparisons of ARTS by Middle Atlantic states

| Service type | NJ counties (n=21) | NY counties (n=62) | PA counties (n=67) | Test | P |
|---------------|--------------------|--------------------|--------------------|------------------|-------|
| OTPs | 0.36 (0.58) | 0.00 (0.87) | 0.47 (0.88) | $H(2,147)=1.72$ | .423 |
| Non-OTP SUD | 3.43 (2.61) | 3.88 (2.05) | 4.40 (2.38) | $H(2,147)=4.77$ | .092 |
| Gambling | 0.00 (0.21) | 0.00 (0.00) | 0.00 (0.00) | $H(2,147)=12.12$ | .002 |
| HIV | 0.80 (0.72) | 0.89 (1.83) | 0.00 (0.59) | $H(2,147)=21.10$ | <.001 |
| HCV | 0.40 (0.83) | 0.00 (1.04) | 0.00 (0.24) | $H(2,147)=13.22$ | .001 |
| HBV | 0.38 (0.72) | 0.00 (0.43) | 0.00 (0.00) | $H(2,147)=20.86$ | <.001 |
| Mental health | 2.65 (1.25) | 3.75 (2.74) | 4.02 (3.68) | $H(2,147)=6.46$ | .039 |

Note. Medians, Interquartile Range (IQR), and non-parametric test statistics reported due to skew. Data presented per 100,000 residents.

- Urban-rural disparities across Middle Atlantic counties were identified for all ARTS (below), five and two of which were rural and urban, respectively.
 - Rural: OTPs, gambling, HCV, HBV ($P_s<.001$); HIV ($P<.01$)
 - Urban: Non-OTP SUD ($P<.001$); mental health ($P<.01$).
- State-specific urban-rural disparity patterns were similar, though rural disparities were greatest in PA.

Conclusion

- This analysis highlights nuanced patterns for urban-rural and state availability of ARTS in the Middle Atlantic. As predicted, rural disparities were common, though urban disparities were identified.
- Service expansion to underserved rural counties, particularly in PA, are needed. We recommend future research compare other barriers (access, affordability) to ARTS in the Middle Atlantic.

Contact & Acknowledgments

- For information about this research, contact Jamey Lister at jlisters@ssw.rutgers.edu. References available upon request.
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