Are Rural Residency Planning and Development Programs Finding the Sweet Spot of Rural Training?

THE CECIL G. SHEPS CENTER FOR HEALTH SERVICES RESEARCH

SCHOOL OF MEDICINE

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Background:
The rural-urban mortality gap tripled between 1999 and 2019. Recognizing that training physicians in rural communities helps bolster workforce supply and increase access to care, the Health Resources and Services Administration (HRSA) developed the Rural Residency Planning and Development (RRPD) Program. RRPD has provided start-up funding to 36 grantees to develop residency programs that train residents in 40 rural counties across 24 states. Because rural training programs face unique challenges including lower patient volumes, fewer rotation opportunities and fewer faculty preceptors, it is unclear how many potential places exist that: 1. do not currently have a residency program; 2. have the requisite infrastructure; and 3. would require public support to launch a program.

Funding:
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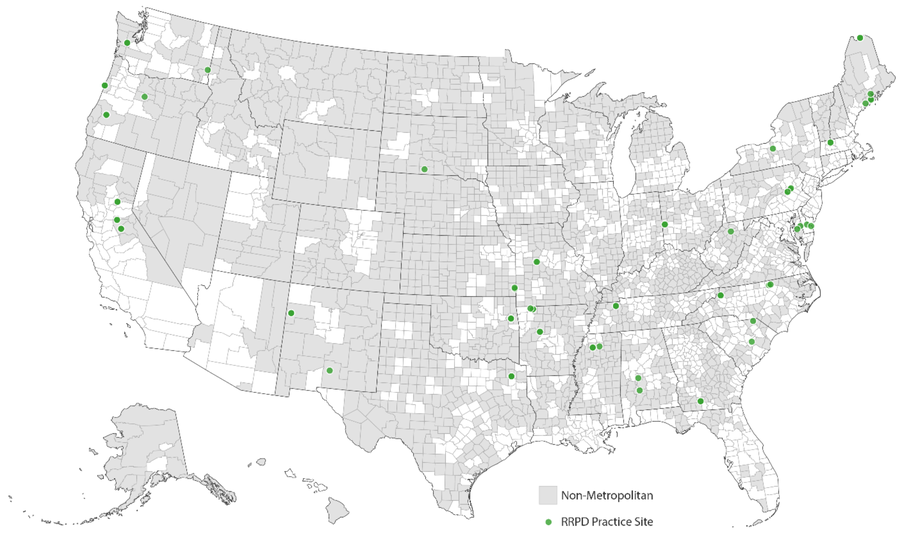
Goals:
This study aims to identify a "typology" of places where RRPD programs are located and use this information to find rural places with similar characteristics that do not currently have RRPD training programs.

Data:
County level data on population characteristics including population size (2017), population density (2010), % of the population in poverty (2017), Persistent Poverty Typology Code (2014) were drawn from the 2018-2019 Area Health Resource File. The percent of the population that is non-white or Hispanic (2017), % Medicaid eligible (2012), and the ratio of primary care physicians per 10K population (2017) were calculated based on 2018 – 2019 AHRF data.

Methods:
Logistic regression was used to predict whether the county was an RRPD site as a function of population, the ratio of primary care physicians per population, and the social vulnerability index (SVI from CDC). For each of the three continuous variables, we specified a quadratic model to allow for non-monotonic relationships between RRPD status and the predictor variables.

Location of Rural Residency Program Development Grantee Training Sites and Non-Metropolitan Counties in the United States



Population Characteristics of Non-Metro Counties with and without RRPD Programs

Population Characteristic	RRPD Counties	Non-Metro Counties without an RRPD Program
Average Population (2017)	53,767 (9,339-225,322)	22,654 (88-200,381)
Population Density/Sq. mile (2010)	73 (6.9-211)	43 (0-2,820)
% Non-white or Hispanic (2017)	30% (4-92%)	22% (2-97%)
% 65 & over (2017)	20% (7-28%)	20% (6-40%)

Results:
Higher population is a strong predictor of being an RRPD county ($p<0.01$). The PCP ratio that generates the highest probability of being an RRPD site is roughly 10.3 physicians per 10K population. Social vulnerability is not significant at 5% but is at 10%, providing weak evidence that SVI is correlated with being an RRPD county.

Areas of the country with substantial portions of counties having similar typologies as RRPD counties include New England, the Southwest, Pacific Northwest, and scattered counties throughout the Southeast, Appalachian, and Great Lakes regions.

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Population Studied:
40 counties with RRPD programs and 1,932 non-metro counties (2018 Office of Management and Budget CBSAs). Four metro counties that qualified for RRPD funding had a RUCA score >3.

Income Characteristics of Non-Metro Counties with and without RRPD Programs

Income Characteristic	RRPD Counties	Non-Metro Counties without an RRPD Program
Median Income (2013-2017)	$44,484 ($22,973-$65,595)	$45,500 ($13,462-$110,190)
Persistent Poverty (% of counties) (2014)	20%	15%
% of population in poverty (2017)	19% (9-50%)	17% (4-57%)

Health Insurance Characteristics of Non-Metro Counties with and without RRPD Programs

Health Insurance Characteristic	RRPD Counties	Non-Metro Counties without an RRPD Program
% <65 w/o health insurance (2017)	11.6% (10.1-13.1%)	12.3% (12.1-12.5%)
% Medicaid Eligible (2012)	28% (9-61%)	25% (3-67%)

Provider Facility Characteristics of Non-Metro Counties with and without RRPD Programs

Provider Facility Characteristic	RRPD Counties	Non-Metro Counties without an RRPD Program
% of counties w/no hospital (2010)	8%	24%
Average Hospital Bed Size (2017)	141 (25-524)	79 (2-1,064)
Primary Care Physicians per 10K pop (2017)	6.0 (2.0-11.5)	4.7 (0-43)

Key Takeaways:
- RRPD counties appear to represent a "sweet spot" of rural counties that could most succeed in launching rural training programs.
- Large enough infrastructure: RRPD counties have the population and existing physician supply to support a training program.
- Socioeconomic need: RRPD counties are more socially vulnerable.
- These findings can be utilized to identify additional counties fitting this "sweet spot"
- Additional counties could receive targeted funding for rural residency program development to address health disparities and health workforce maldistribution.