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Choosing Rural Definitions: Implications for Health Policy

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Choosing Rural Definitions: Implications for Health Policy

By Andrew F. Coburn, A. Clinton MacKinney, Timothy D. McBride, Keith J. Mueller, Rebecca T. Slifkin, and Mary K. Wakefield

Key Facts

- *More than 15 definitions of rural are currently used by federal programs.*
- *30 million Census Bureau-defined rural people live in OMB-defined metropolitan areas.*
- *20 million Census Bureau-defined urban people live in OMB-defined nonmetropolitan areas.*

There is no single, universally preferred definition of rural that serves all policy purposes. The choice of rural definition affects who benefits from a policy and who does not. Key considerations for understanding the policy implications of different rural definitions include the following:

- Rural definitions can be built on different units of geography, each of which has distinct advantages and disadvantages.
- The two most commonly used classification systems, those of the Census Bureau and the Office of Management and Budget, result in very different sets of places defined as rural.
- Policies and programs can be targeted when rural definitions are combined with key demographic, economic, or health care provider characteristics.
- Rural designations can change with shifts in population distribution or commuting patterns, or as a result of changes in geographic boundaries.
- Data availability is essential to support the application of the rural definition.
- There are many resources that can help with understanding the complexities of rural definitions.

Introduction

There is no single, universally preferred definition of rural, nor is there a single rural definition that can serve all policy purposes. Rural definitions are used to identify rural people, places, and/or health care providers. Methods for defining rural are based on geographic units that are sometimes combined with population or provider characteristics. Rural definitions can result in different

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outcomes from those intended when target areas and populations have not have been carefully specified, data used to conceptualize the rural definition are unavailable, or consequences of applying the chosen rural definition are not fully considered.

The policy outcomes of a rural definition may be counterintuitive. A recent example is the use of the TRICARE definition of rural for applying access standards for Medicare Part D. Policy makers sought a broad, inclusive rural definition in hopes of ensuring Part D pharmacist availability across wide areas of rural America. The TRICARE definition defined rural so broadly that only central cities were excluded from the rural definition. Policy makers then mandated that pharmacies be available within 15 miles of 70% of the TRICARE-defined rural population. By including areas most people would consider suburban in the rural category, the residual 30% of the TRICARE-defined rural population not protected by the access standards is a number equal to the entire rural population under the most-used definition.

Common Rural Definitions

The most commonly used definitions of rural are based on either the Census Bureau Urbanized Area categorization of census blocks and block groups or the Office of Management and Budget (OMB) characterization of counties. The Census Bureau intentionally creates a definition of rural by designating census blocks and block groups as urban based on total population and population density, with all other areas being rural. The OMB classifies counties as *metropolitan*, when one or more county is the “core” and other counties are included based on commuting patterns into the core. The OMB *metropolitan* classification was not designed to create a definition of rural. However, many federal programs use the metropolitan designation to declare all other counties rural. Table 1 summarizes definitions commonly used by federal programs to delineate rural places eligible for program benefits.

Other definitions not included in Table 1 have been created for particular programs. Additional federally used rural definitions are available at http://www.raconline.org/info_guides/ruraldef/. These definitions often begin with the basic geographic building blocks described above and then apply other characteristics of people or providers to more narrowly target programs.

The Building Blocks for Defining Rural

Rural definitions are aggregations of one or more of the following units of geography: counties, ZIP code areas, and census tracts (see Table 1).

Counties

Counties are the most commonly used geographic component of rural definitions. Counties’ advantages are that they are simple to understand and their boundaries are very stable over time. In addition, many national health data sets, including economic data available through the Bureau of Labor Statistics, use counties as a core geographic unit. In most states, counties are political jurisdictions that distribute resources (e.g., county hospitals, public health agencies).

There also are disadvantages to using counties as building blocks of a rural definition. County size varies substantially across the United States. Some counties cover extremely large geographic areas and include both very urbanized and very rural areas. In addition, most county-level rural definitions are based on the OMB's categorization of a county as metropolitan or nonmetropolitan. Some counties are included in metropolitan areas based on commuting patterns but have many other characteristics that are typically associated with rural areas. Thirty million Census Bureau-defined rural people live in OMB-defined metropolitan areas, and 20 million urban people live in nonmetropolitan areas. Finally, in some states, political boundaries are based on aggregations of towns, or in the case of Alaska, boroughs, that do not correspond exactly to county boundaries.

Advantages: County boundaries represent political jurisdictions and remain stable over time.

Disadvantages: County size varies substantially across the United States, and larger counties include both urban and rural areas.

ZIP Code Areas

ZIP code areas consist of the geographic areas surrounding postal delivery routes. As such, their borders have no defined relationship to city and county boundaries. ZIP code areas usually allow for a finer level of geographic precision than do counties. Also, for programs targeting health care providers, using the ZIP code area to determine program eligibility makes programs relatively simple to implement. A major drawback of using ZIP code areas to define rural is that because their design is for postal purposes, ZIP codes change frequently from year to year. Unlike counties, ZIP code areas have little relationship to political boundaries.

Advantages: ZIP code areas are easy to implement with programs that rely on provider or beneficiary address.

Disadvantages: Because ZIP codes areas are designed for postal purposes, ZIP codes change frequently from year to year.

Census Geography

Census geography is the smallest building block used to construct rural definitions (i.e., census block, block groups, and tracts). Census geography is more stable than ZIP code areas, since census geography is subject to change in 10-year intervals, not annually. Census geography is more consistent with county geography, while offering a smaller geographic unit. Policies based on census tract definitions can be hard to implement, because census geography information is not commonly used by programs and payers, including Medicare intermediaries, insurance companies, and Medicaid.

Advantages: Census geography represents the smallest and most precise geographic unit.

Disadvantages: Census tract definitions can be hard to implement, because census geography information is not commonly used by programs and payers.

Table 1. Commonly Used Rural Definitions

Definition	Definition Description	Geographic Unit Used
U.S. Census Bureau: Urban and Rural Areas	The Census Bureau's classification of rural consists of all territory, population, and housing units located outside of urbanized areas and urban clusters. Urbanized areas include populations of at least 50,000, and urban clusters include populations between 2,500 and 50,000. The core areas of both urbanized areas and urban clusters are defined based on population density of 1,000 per square mile and then certain blocks adjacent to them are added that have at least 500 persons per square mile.	Census Block and Block Groups
Economic Research Service, U.S. Department of Agriculture & WWAMI Rural Health Research Center: Rural-Urban Commuting Areas (RUCAs)	This classification scheme utilizes the U.S. Census Bureau's urbanized area and cluster definitions and work commuting information. The RUCA categories are based on the size of settlements and towns as delineated by the Census Bureau and the functional relationships between places as measured by tract-level work commuting data. This taxonomy defines 33 categories of rural and urban census tracts.	Census Tract, ZIP Code approximation available
U.S. Office of Management and Budget (OMB): Core Based Statistical Areas (i.e., Metropolitan and Nonmetropolitan areas)	A metropolitan area must contain one or more central counties with urbanized areas. Nonmetropolitan counties are outside the boundaries of metropolitan areas and are subdivided into two types, micropolitan areas and noncore counties. Micropolitan areas are urban clusters of 10,000 or more persons.	County
Economic Research Service, U.S. Department of Agriculture: Rural-Urban Continuum Codes (Beale Codes)	This classification scheme distinguishes metropolitan counties by the population size of their metropolitan area, and nonmetropolitan counties by degree of urbanization and adjacency to a metropolitan area or areas. All counties and county equivalents are grouped according to their official OMB metropolitan-nonmetropolitan status and further subdivided into three metropolitan and six nonmetropolitan groupings.	County
Economic Research Service, U.S. Department of Agriculture: Urban Influence Codes	This classification scheme subdivides the OMB metropolitan and nonmetropolitan categories into 2 metropolitan and 10 nonmetropolitan categories. Metropolitan counties are divided into two groups by the size of the metropolitan area. Nonmetropolitan-micropolitan counties are divided into three groups by their adjacency to metropolitan areas. Nonmetropolitan-noncore counties are divided into seven groups by their adjacency to metropolitan or micropolitan areas and whether they have their "own town" of at least 2,500 residents.	County
Office of Rural Health Policy, U.S. Department of Health and Human Services: RUCA Adjustment to OMB Metropolitan and Nonmetropolitan Definition	This method uses RUCAs 4-10 to identify small towns and rural areas within large metropolitan counties. In addition, census tracts within metropolitan areas with RUCA codes 2 and 3 that are larger than 400 square miles and have population density of less than 30 people per square mile are also considered rural.	Census Tract within OMB Metropolitan Counties

Key Considerations in Choosing Among Rural Definitions

What are the policy-relevant characteristics of rural people, places, and providers?

Few federal programs rely solely on core federal definitions. Most overlay characteristics of rural people, places, or providers that are central to the policy objective to create a more targeted program. Such characteristics include remoteness from urban center or distance to the nearest provider, low population density, or provider supply. For example, policies targeting certain types of providers needing assistance to join telehealth networks might use a definition that identifies more isolated rural places. A strategy might be to use the OMB definition in Table 1 but only target counties not adjacent to metropolitan areas. Similarly, policies supporting bonus payments to retain providers in low population density rural areas might use a subset of the RUCAs to capture the desired measure of population density (people per square mile). Other provider supply policies might be tied to the OMB definitions and measures of provider supply such as the physician to population ratio in those areas.

The rural definitions in Table 1 can be used to more narrowly target policy or program eligibility when combined with key demographic, economic, or provider characteristics, such as poverty rates, rates of insurance coverage, or provider supply.

Should the selected rural definition be narrowly targeted or widely inclusive?

While targeted, narrowly-defined definitions can direct resources to specific populations, they also have the potential consequence of eliminating from policy or program eligibility places or providers that should be covered. Conversely, more broadly defined definitions might result in the inclusion of areas with less need, with possible budgetary consequences. Financial constraints (for example, meeting budget neutrality or maintaining long-term program viability) are an important consideration when selecting both the rural definition to use and whether and how to more narrowly target policy by overlaying other characteristics.

What are the potential unintended consequences of relying on commonly used, easily understood definitions, such as those for nonmetropolitan counties?

Differences between definitions, such as those of OMB and Census Bureau, must be clearly understood to anticipate potential unintended consequences. OMB's definition of counties as metropolitan or nonmetropolitan is often used as a proxy for urban and rural. When comparing definitions, thirty million Census Bureau-defined rural people live in OMB-defined metropolitan areas.

Therefore, if a program is based on nonmetropolitan status, rural people or providers within metropolitan counties would not be eligible. ORHP addressed this problem by using a blended approach of the OMB and RUCA methodologies by identifying rural census tracts within metropolitan counties that are RUCA 4 and higher (see Table 1 for definition).¹

Rural Areas Are Sometimes Included In Urban-Defined Places

For example, San Bernardino County, California, is a metropolitan county (OMB-defined) that covers over 20,000 square miles. In the county's southwest corner lie densely populated areas, like the city of San Bernardino, that are part of California's Los Angeles-Long Beach region. However, the majority of the county is dominated by mountains and desert with small, unincorporated communities. In Minnesota, St. Louis County is included in the metropolitan area of Duluth because residents in the southeastern corner of the county commute to Duluth, which is not located in the county. However, the county encompasses 6,737 square miles, 98% of which are designated rural by the Census Bureau.

How will the policy deal with changes in areas designated as rural?

Rural designations can change with shifts in population or commuting patterns, or as a result of changes in geographic boundaries. For example, many Rural Health Clinics are located in areas no longer considered rural according to the definition used by that program.

Population or boundary changes can generate two competing political pressures: to retain eligibility even after a place no longer qualifies, or to "tighten" the rules to prevent expansion of eligibility. It can be politically very difficult to revoke program eligibility, even if participation criteria are no longer met. In some circumstances, it may be worth considering whether policy goals justify grandfathering some or all program participants, regardless of changes in their designation. Alternatively, it may be appropriate to periodically redesignate areas in order to eliminate from participation those whose rural status has changed. If so, a decision must be made as to how often redesignation is desirable and practical.

Are data available to support the use of the rural definition?

Data availability is essential to support the application of the rural definition. The unit of geography in some rural definitions is not available in the data used by those implementing the policy. For example, using a county definition of rural in a provider bonus payment policy would be difficult to implement because provider claims only include ZIP codes, which do not parallel county borders.

Conclusions and Policy Implications

Differences between rural definitions can produce dramatically different policy results. The desire of congressional offices to tailor policies to reflect the needs of their constituencies should be balanced against the need for more consistent, equitable application of rural definitions.

The policy implications of rural definitions are as follows:

- There is no single rural definition to serve all policy purposes.
- Choice of a rural definition can result in unintended policy consequences.
- Rural definitions can be used to more narrowly target policy or program eligibility when combined with key demographic, economic, or provider characteristics.
- Policy makers should consider consulting experts when designing or assessing rural definitions for policy.

Resources

Maps of Common Rural Definitions

North Carolina Rural Health Research and Policy Analysis Center

Available at http://www.shepscenter.unc.edu/research_programs/rural_program/maps/maps.html

Rural Assistance Center in partnership with the Community Informatics Resource Center

Available at <http://www.raconline.org/maps>

Published Articles and Papers

Definition of Rural: A Handbook for Health Policy Makers and Researchers (1998).

Technical Issue Paper prepared for Federal Office of Rural Health Policy.

Ricketts, T. C., et al., North Carolina Rural Health Research and Policy Analysis Center

Available at http://www.shepscenter.unc.edu/research_programs/rural_program/ruralit.pdf

Rural Definitions for Health Policy and Research (2005).

Journal Article in *American Journal of Public Health*, 97(7), 1149-1155

Hart, L. C., et al., WWAMI Rural Health Research Center

Available at http://depts.washington.edu/uwrhrc/rhrc_findings.php

Rural by the Numbers: What is Rural? (2004).

Information Brief

Miller, K. K. Rural Policy Research Institute

Available at <http://www.rupri.org/resources/rnumbers/rbtn1.pdf>

Organizations for Additional Support

Community Informatics Resource Center (Rural Policy Research Institute)

Director: Chris Fulcher

Attn: Erin Barbaro

Phone: (573) 884-8721 E-mail: fulcherc@rupri.org

<http://circ.rupri.org/>

Economic Research Service - Resource & Rural Economics Division (USDA)

Contact: John Cromartie, Geographer

Phone: (202) 694-5421 E-mail: jbc@ers.usda.gov

<http://www.ers.usda.gov/Briefing/Rurality/WhatisRural/>

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http://www.shepscenter.unc.edu/research_programs/rural_program/

Rural Assistance Center

Director: Kristine Sande

Phone (1-800) 270-1898 E-mail: info@raconline.org

<http://www.raconline.org/>

WWAMI Rural Health Research Center

Director: L. Gary Hart

Phone: (206) 685-0402 E-mail: rhrc@fammed.washington.edu

<http://depts.washington.edu/uwruca>

Note

¹ The term “Goldsmith” may still appear in some agencies’ references to the ORHP definition, but this term is no longer in use by ORHP.