

The concepts of "rural" and "urban" exist as part of a continuum, but Federal policies generally rely on dichotomous urban/rural differences based on designations of the Office of Management and Budget (OMB) or the Bureau of the Census. OMB's MSA designation includes a large population center and adjacent counties that have a high degree of economic and social integration with that center. Census' urban areas include densely settled "urbanized areas" plus places with populations of 2,500 or more outside of urbanized areas. "Rural" areas are designated by exclusion: i.e., those areas not classified as either MSA or urban. About one-quarter of the U.S. population resides in nonMSAs and Census' rural areas. The identified populations are different but overlapping. Forty percent of the 1980 Census' rural population lived in MSAs, and 14 percent of the MSA population lived in rural areas.

"Nonmetropolitan area," "rural area," and "nonurbanized area" have all been used to display vital and health statistics or to implement Federal policies. These "rural" definitions can be analyzed in terms of how well they include "rural areas" and how well they exclude "urban areas." For example, we intuitively associate farming with "rural" but about one-fourth of farm residents live in MSAs (55). Some might argue that isolated towns with just over 2,500 residents are inappropriately excluded from the Census' rural definition. Others may argue that when non-MSAs are defined as rural, over 100 towns with populations of 25,000 or more are inappropriately included. Moreover, when MSAs are used to define "urban" in spatially large counties, small towns that are far from an urbanized area are inappropriately called urban.

Dichotomous measures of urbanity/rurality obscure important differences between urban and rural areas and wide variations within a rural area. Consequently, there

have been recommendations to implement a standard rural typology that would capture the elements of rural diversity and improve use and comparison of data. Nine county-based rural/urban topologies or classification schemes that incorporate one or more of the following measures are reviewed in this paper: population size and density; proximity to and relationship with urban areas; degree of urbanization; and principal economy. While a standard typology may seem desirable, it will be difficult to arrive at, because the different topologies are designed and have merit for various purposes, some of which conflict.

For purposes of health services planning and research, a typology based on largest settlement size is useful, because the level of available health resources is likely to be related to the size of a city. In spatially small counties, large settlements are likely to be quite accessible to all county residents. In the West, however, counties can be several times as large as in the East, and some measure of proximity would be useful. A measure of population concentration and dispersion, or distance to a large settlement, could serve as an indicator of access to those services. Of the topologies reviewed in this paper, the one likely to best measure both level of and **access to services is a** typology that incorporates a county's largest settlement and the county's adjacency to an MSA. Other topologies that categorize counties according to employment and commuting patterns could be used to refine the definition of labor market areas, an important component of the Medicare prospective payment system (PPS) formula.

Rural areas are not defined uniformly for purposes of Federal program administration or distribution of funds. Different designations may, in fact, be used by the same agency. For example, Congress has directed the Health Care Financing Adminis-

tration to use OMB's MSA designations to categorize hospitals as urban or rural for purposes of hospital reimbursement under Medicare, but to use Census' nonurbanized area designation to certify health facilities under the Rural Health Clinics Act.

The relative merits of county-based topologies for particular applications can be evaluated by using the Area Resource File (ARF), a county-level data base maintained by the Health Resources and Services Administration. In addition, visual aids such as maps can effectively serve as an analytic device to illustrate geographic variation in health status and access to health care resources and could further the development and evaluation of topologies. In the spatially

large Western counties, sub-county geographic units need to be employed to help identify health service areas with special characteristics such as those that are 'frontier' (i.e., have 6 or fewer persons per square mile).

The choice of definition for "rural" that is used to present demographic and health data can make a substantive difference. For example, whether a disproportionate number of rural residents are elderly depends on how rural is defined. Furthermore, wide variations in health status indicators within non-metropolitan areas will not be apparent unless nonmetropolitan data are disaggregate by region, urbanization, proximity to urban areas, or other relevant factors.