

State

of the Health Workforce in Rural America
Profiles and Comparisons

WWAMI
Rural
Health
Research
Center

Eric H. Larson

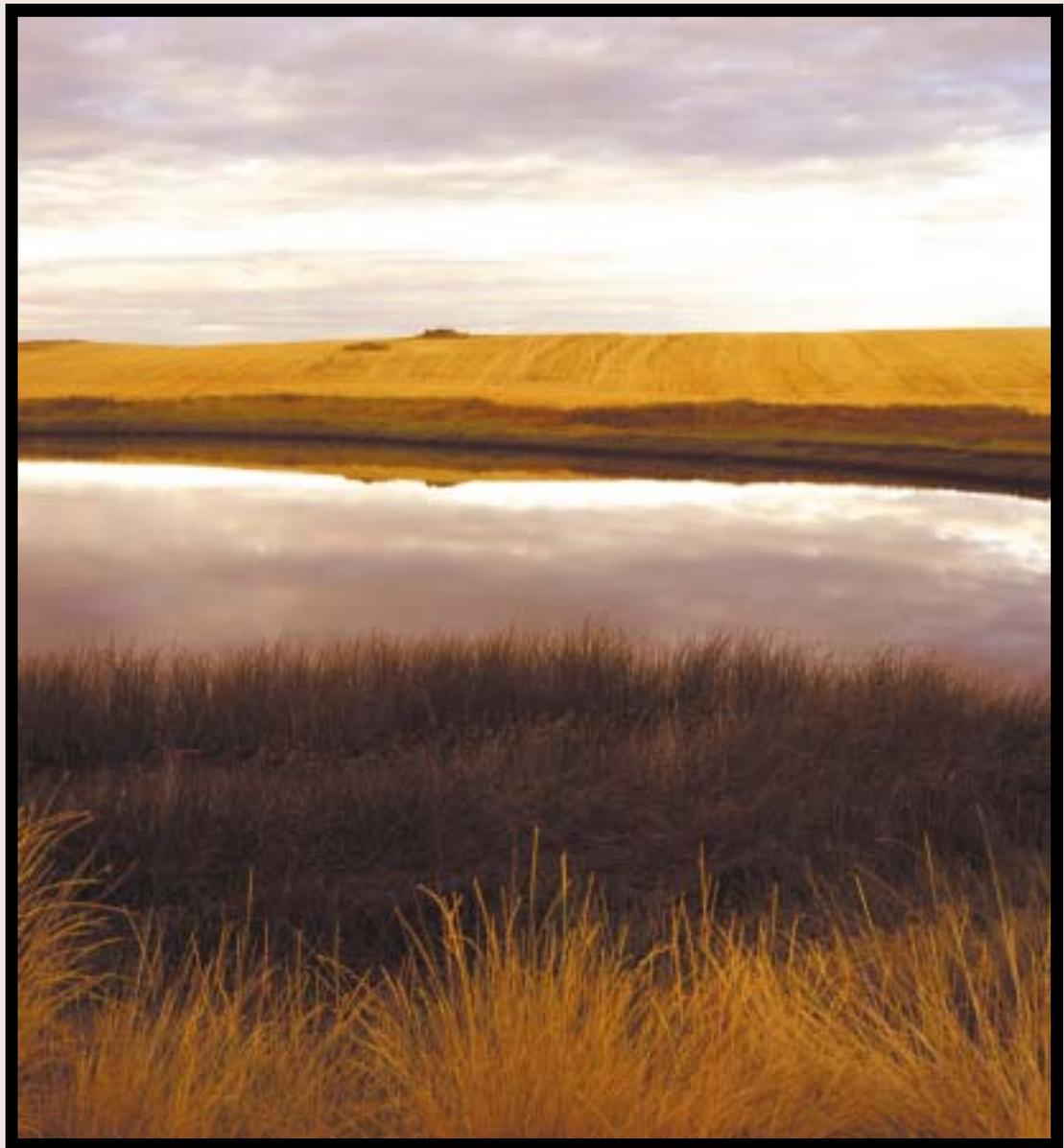
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The uneven distribution of health care providers across rural and urban areas of the United States continues to impede access to care for millions of rural residents. This book profiles that workforce with comparisons of the supply of health professionals across the fifty states and within the rural areas of each state. In addition to individual state workforce profiles, the book includes discussion of key policy and methodological issues in workforce analysis. The data and

analysis show that the nature and magnitude of rural health workforce problems vary substantially both across states and within them, suggesting the dangers of "one-size fits all" policy solutions. This book provides a picture of the rural health workforce that will serve analysts and policy makers well as they search for workable solutions to the problem of inadequate supply of health care providers in rural America.

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ABOUT THE WWAMI RURAL HEALTH RESEARCH CENTER

The WWAMI Rural Health Research Center (RHRC) is one of six centers supported by the Federal Office of Rural Health Policy, a component of the Health Resources and Services Administration (HRSA) of the Public Health Service. The major focus of the WWAMI RHRC is to perform policy-oriented research on issues related to rural health care. Specific interests of the Center include the training and supply of rural health care providers and the content and outcomes of the care they provide; the

availability and quality of care for rural women and children, including obstetric and perinatal care; and access to high-quality care for vulnerable and minority rural populations.

The WWAMI RHRC is based in the Department of Family Medicine at the University of Washington School of Medicine, and has close working relationships with the WWAMI Center for Health Workforce Studies, Programs for Healthy Communities, and the other health science schools at the University, as well as with other major universities in the five WWAMI states: Washington, Wyoming, Alaska, Montana, and Idaho. The University of Washington has over 30 years of experience as part of a decentralized educational research and service consortium involving the WWAMI states. The activities of the WWAMI RHRC are not only focused on national issues, but also the particular needs and challenges in these states. The WWAMI RHRC also works closely with the associated Area Health Education Centers and state departments of health.

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*For individual state-by-state
workforce profiles, go to page 45.*

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Chapter 1

Introduction

THOMAS E. NORRIS, M.D. • ERIC H. LARSON, PH.D.

The World Organization of Family Doctors recently observed that rural residents throughout the world “generally have reduced access to health care and less favorable health status and outcomes when compared to urban populations” (WONCA, 2003). This situation is common to both developing and developed countries, including the United States. Rural U.S. residents deserve the same health care access and quality available to people living in urban and suburban settings, but often, they don’t receive it.

This disparity results in large part from the difficulty in creating, supporting, and maintaining an adequate and appropriately trained rural health care workforce. Correcting the inequities in access to care across the rural-

urban divide requires an understanding of both the general issues that confront rural health care and of the substantial variations in the nature and severity of the problem across different rural communities. The specific needs of rural areas in the United States vary widely. Health workforce solutions require sensitivity to these issues of rural diversity. “One size fits all” rural solutions are unlikely to fit anybody very well.

More than 22 million rural Americans now live in federally designated Health Professional Shortage Areas, where fewer than one primary care physician serves 3,500 people or more. (In contrast, the average primary care physician-to-population ratio in the urban United States is about 1:1,285.) These Americans, who comprise more than 10

percent of the U.S. population, may not only have less access to medical care than their urban counterparts—they may lack it altogether.

Physicians illustrate the rural health workforce problems of shortage and maldistribution particularly well. However, nurses, nurse practitioners, physician assistants, dentists, pharmacists, and various allied health professionals are also in short supply in many rural areas (COGME, 1998; Hart et al., 2002).

Health policy makers who want to ensure better access to care for rural residents must find ways to improve the supply and distribution of providers willing to practice in rural settings. This requires knowledge of the unique environments in which care is delivered and of the demography and health care needs of rural populations. Rural hospitals and clinics are smaller than urban ones, so local access to specialty and sophisticated high-technology care may be limited. Rural poverty rates often exceed



Introduction

those in urban areas, a situation that contributes to high rates of uninsured and underinsured residents and limited capacity to pay out-of-pocket costs for care. In addition, rural populations are often older, sicker, and less educated than urban populations.

In this volume, we describe the rural health workforce within and across the 50 states and address concepts, trends, and issues that are important in rural workforce analysis. The book is organized as follows.

Chapter 2 introduces concepts and trends that are central to understanding and analyzing the status of the rural health care workforce. Topics include provider supply, quality of care, the effect of the increasing proportion of female physicians on the rural physician supply, recruitment and retention of providers, rural training and reimbursement, and managed care. The chapter provides an overview of national health workforce trends that influence the rural workforce, and it identifies critical emerging issues in the rural workforce.

Chapter 3 discusses key methodological issues in rural workforce analysis. These issues include defining rural areas and populations, regionalizing care, designating shortage areas, and estimating the supply of providers.

Chapter 4 provides selected state comparisons in demography and health workforce supply and training. Figures illustrate wide variations across the states on key indicators. Policy makers and analysts may use this chapter to compare their states with others in key health workforce

areas and to adopt its presentation methods to create their own comparisons using related data.

Chapter 5 is the heart of this book. It offers a two-page profile of the health workforce of each state and details both rural-urban and intrarural variations in the availability of health care providers. Policy makers, program managers, and analysts may use data from the state profiles to enhance their understanding of how each state's workforce varies across different areas and over time. The profiles also show how each state ranks compared to the other 49 states. The profiles present comparable data for all states, so readers may use this information to make selective comparisons of states and topics of interest.

In **Chapter 6**, the conclusion to this monograph, we highlight primary issues in rural health workforce research and policy.

At the end of this volume, we provide resources and Web sites with additional information on a variety of health workforce topics and issues.

The rural health care workforce serves a population that would constitute the 23rd largest nation in the world. Ensuring an adequate supply and appropriate distribution of health providers to serve this population is a complex and important policy issue at both the state and federal levels. The information and analysis we provide will assist those concerned with rural health workforce issues in seeking effective policy solutions and improving the state of health care in rural America.



Rural Health Workforce: Context, Trends, and Issues

L. GARY HART, PH.D. • DENISE M. LISHNER, M.S.W. • ROGER A. ROSENBLATT, M.D., M.P.H.

ACKNOWLEDGMENT: *Portions of this chapter draw upon Hart et al., 2002.*

INTRODUCTION

This chapter provides an overview of the current national health care workforce context, trends, and issues that shape the local rural health workforce. We focus much of our discussion on generalist physicians, recognizing their large numbers, widespread practices, and pivotal role in the rural health care delivery system. This emphasis is not intended to diminish the importance of other types of rural health care providers (Table 2-1). Some of the most acute workforce shortages facing rural areas are actually in the nonphysician workforce—dentists, technicians, nurses, and others. The provision of health care in rural places relies on a wide variety of health care professionals, and the effective delivery of health care is dependent on their ability to work as a team (Rosenthal, 2001).

Shortage amid surplus constitutes the great American health care system paradox (COGME, 1998). The rural health care setting has long been compromised by the uneven

distribution and relative shortage of medical care providers. More than 50 million of the U.S. population live in areas that are considered rural or nonmetropolitan by various definitions (Ricketts, Johnson-Webb, & Randolph, 1999). While selected communities across the nation experience surpluses of some physician specialties, rural communities often struggle to recruit and retain an adequate supply of health professionals. During the 1980s, many towns witnessed a loss of rural providers that accompanied rural hospital closures (Hart, Pirani, & Rosenblatt, 1994). Once local health care delivery systems are dismantled, few rural towns are able to resurrect them. Despite major attempts by federal and state policy makers and educational institutions to address rural provider shortages over three decades, both the shortages and misdistribution persist.

The challenge of providing medical care to rural populations of the United States is complicated by the higher level of needs among rural groups. Rural populations tend to be older, poorer, and less well insured than their urban counterparts (NRHA, 1999; Ricketts, Johnson-Webb, & Randolph, 1999). In addition, rural areas must confront issues that are part of the fabric of rurality: long travel distances to obtain health care, low population densities, diseconomies of scale, and high rates of fixed overhead costs (Hassinger & Hobbs, 1992).

Table 2-1: Number of Rural Providers¹ by Type

	Number ² (1,000s)	Percent
Registered nurses (RNs)	281.2	48.3
Licensed practical nurses (LPNs)	109.9	18.9
M.D. physicians (2000)	79.2	13.6
Pharmacists	31.4	5.4
Dentists	18.9	3.2
Nurse practitioners (2001)	10.7	1.8
Physical therapists	12.0	2.1
Dental hygienists	9.5	1.6
Physician assistants (2001)	9.2	1.6
Cert. reg. nurse anesthetists	5.7	1.0
Optometrists	5.1	0.9
D.O. physicians (2001)	7.3	1.3
Certified nurse midwives (1996)	1.3	0.2
Podiatrists	0.7	0.1
Total¹	582.1	100.0

¹ Only selected provider types are included. Many provider types are not included (e.g., chiropractors, dental assistants, psychologists, occupational therapists, home health aides, nurse aides, technicians, and social workers).

² Data are for 1990 unless otherwise noted.

Federal laws and programs cannot adequately address health care issues in both rural and urban venues in the United States. Nor can “one size fits all” solutions address the health care needs of the nation’s diverse rural environment—across all of its economic, social, environmental, demographic, and epidemiological dimensions. For the most part, national policy is designed to solve urban health care delivery problems, with rural interests recognized only in times of crisis (Hart & Taylor, 2001). The prevailing national view sees the rural population as tied to urban areas for the vast majority of its medical care. In this time of dynamic health care delivery change, with its emphases on cost containment and, more recently, quality improvement, federal and state policy decisions may profoundly influence the viability of the rural health care delivery system (Hart & Taylor, 2001). Rural health workforce policies must be based specifically on rural data and research that reflect the particular needs and circumstances of this population.

RURAL PROVIDERS: KEY RURAL HEALTH WORKFORCE ISSUES

PHYSICIANS

PHYSICIAN SUPPLY

Health care is the largest single economic sector in the United States. It has grown dramatically over time, and the size of the workforce has increased in tandem. Figure 2-1

shows the growth in the physician supply over the past 50 years. More than 800,000 active physicians work in the United States—roughly 1 physician for every 350 people.

The crux of the rural workforce problem is that physicians are not distributed uniformly across the country. As seen in Figure 2-2, the density of physicians—the supply of doctors per capita—parallels the density of the population. In 2000, nearly five times as many physicians per capita practiced in

America's large cities as in its most rural counties. Importantly, the relative rural shortage has doubled in the 60 years we have been tracking the situation. The data suggest that health workforce policies implemented in the early 1970s—the height of the rural health care crisis—reversed the decline in the rural physician workforce. But it is only in more recent years that the per capita supply in our smallest towns has again reached the levels that were prevalent in the 1940s.

The issue of geographic maldistribution is intertwined with the process of specialization. In 1965, there were roughly the same number of generalist physicians (family physicians, general internists, and general pediatricians) per capita as there were specialists (Figure 2-3). By 2000, the per capita supply of generalist physicians had grown by a third, but the specialty supply had more than doubled. Figure 2-4 shows why this is an important cause of the relative paucity of rural physicians. Only general and family physicians are equally as likely to practice in rural as in urban locations. All other disciplines tend to settle in cities, and the more specialized the physician, the greater this trend. The smaller and more remote the rural place, the more likely that only family physicians will be practicing there. Despite federal and state programs to encourage physicians to practice as generalists, the share who do has not meaningfully changed since 1980.

Osteopathic physicians make up 5 percent of the rural physician workforce and are more likely than their allopathic counterparts to practice as generalists (COGME, 1998). Osteopaths are significantly more likely than allopathic physicians to settle and remain in rural areas (18.1% of

Figure 2-1
Total Physicians by Year

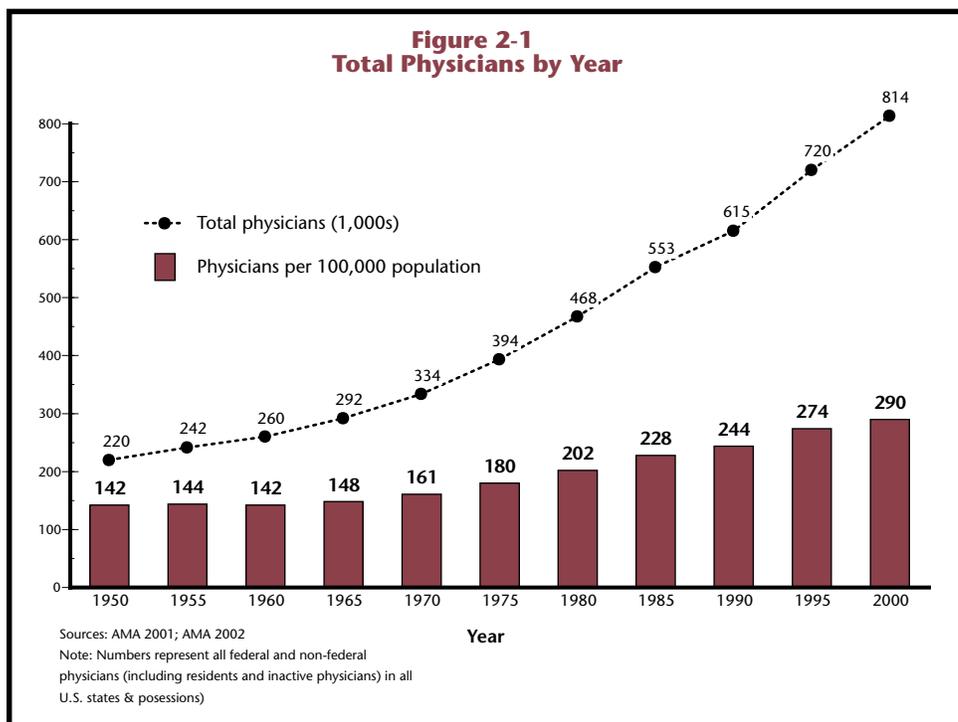
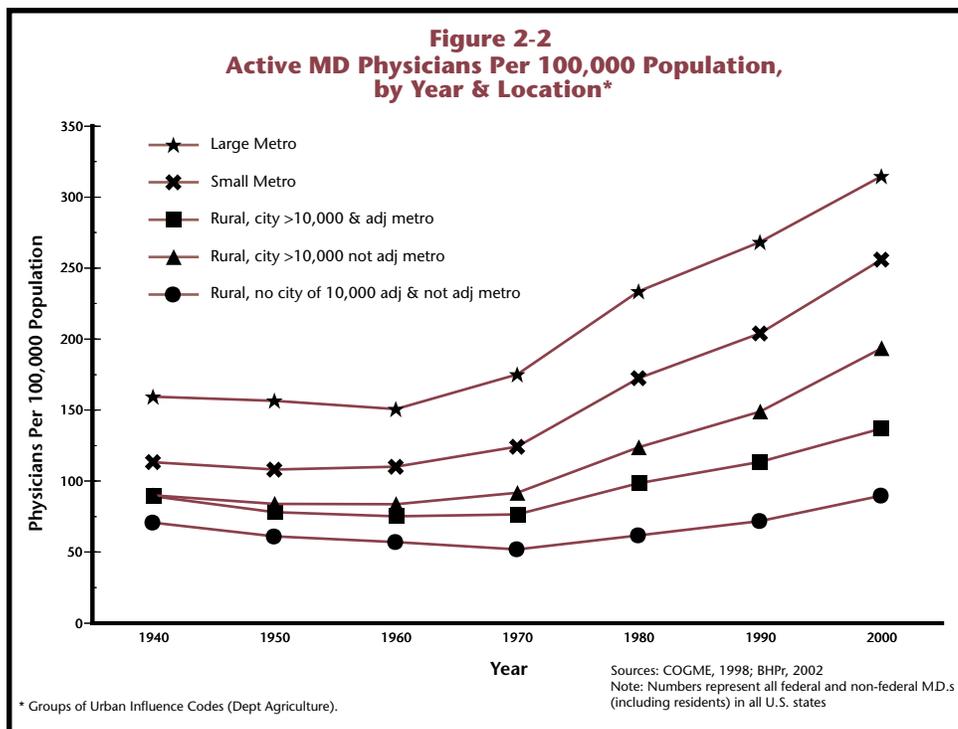


Figure 2-2
Active MD Physicians Per 100,000 Population, by Year & Location*



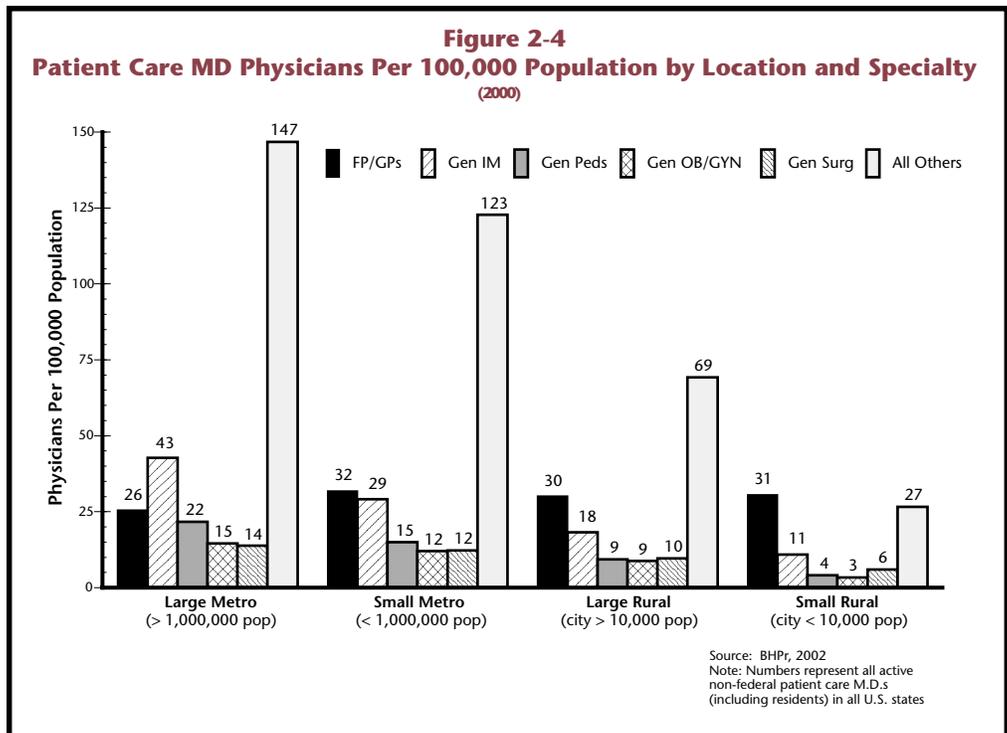
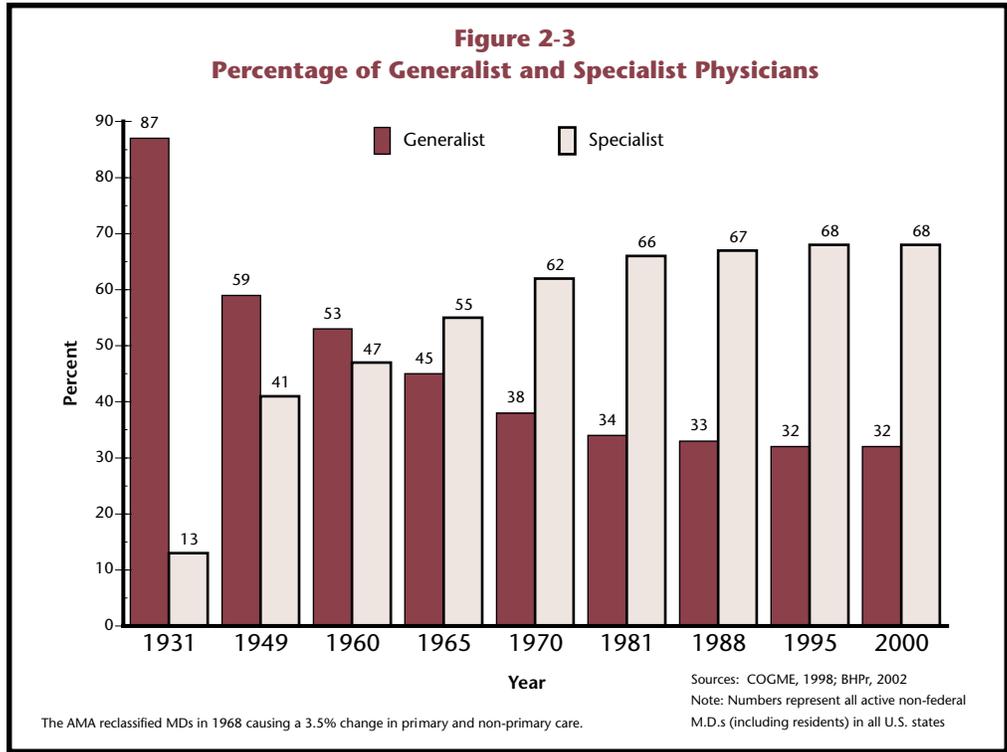
osteopaths versus 11.5% of allopaths). While osteopathic and allopathic family practitioners (FPs) are equally likely to select rural practice, 46 percent of osteopaths become family physicians compared to only 11 percent of allopathic physicians.

THE INCREASING PROPORTION OF FEMALE PHYSICIANS—IMPLICATIONS FOR THE RURAL PHYSICIAN SUPPLY

The proportion of female physicians has dramatically increased during the past two decades. The number of female allopathic physicians more than quadrupled between 1979 and 1991 and has continued to rise (COGME, 1995). In 1997, women made up 43 percent of the first year enrollment of U.S. medical schools (Schmittiel & Grumbach, 1999). Due to the increasing percentage of women graduating from medical schools and residency programs, it is estimated that women will represent 30 percent of the physician workforce by 2010 (Schmittiel & Grumbach, 1999). Colwill & Cultice (2003) predict that the family physician workforce (excluding residents) will increase to 40 percent women by 2020. This transformation has far-reaching implications for rural areas. The fact that women are more likely to choose to train as generalists than men means good news for the rural communities that need generalist providers. Unfortunately for those communities, female generalists appear less likely than men to choose rural practices (Doescher, Ellsbury, & Hart, 2000). Consequently, the recent increase in the number of female physicians may ultimately exacerbate physician shortages in rural areas. Successful recruitment and retention of female providers thus poses a major challenge for rural communities.

QUALITY OF CARE

Equally important to the supply of the health workforce is the quality of care that a workforce provides. Research literature is scant and mixed concerning the quality of rural health care providers compared to urban ones. A few studies have demonstrated substantial differences in clinical prenatal and intrapartum practice styles between rural and urban physicians for similar low-risk



patients, without apparent differences in outcome (Hart et al., 1996). Women who received prenatal care from rural physicians were at no greater risk of bad outcomes than were those who visited urban physicians (Larson, Hart, & Rosenblatt, 1997). It is important to distinguish between scope of service and quality of care (i.e., the types of services a physician provides versus how well those services are provided). In many small and remote rural towns, the scope of local services is limited by factors such as low patient volumes, high personnel costs, and lack of health insurance. While positive outcomes appear associated with procedural volume, those procedures commonly performed by rural physicians have been shown to have little or no such relationship once a minimal number of the procedures are performed.

Although difficult to implement, quality of care research, performance-based evaluations, and quality assurance and improvement programs are critical to improving the health care of rural individuals (Coombs, 2001; Moscovice & Rosenblatt, 2000). Rosenblatt (2000) suggests that, just as for urban populations and providers, it is crucial to examine issues related to quality of care and the selection of appropriate scope of medical services to maximize local health outcomes. Such analyses are complicated within rural areas by the small numbers of cases, severe environmental constraints, and the scarcity of adequate data.

RECRUITMENT AND RETENTION

To correct the persistent difficulties in recruiting physicians to rural and underserved areas, rural health advocates have for several decades emphasized rural-focused recruitment and retention research, programs, and training. Studies have identified a combination of physician factors that increase success in recruiting physicians to practice in a rural areas. These include rural background, family physician specialty, rural training, proximity of family and professional opportunities that match aspirations, and such community factors as good local K-12 schools. Crandall, Dwyer, and Duncan (1990) classify factors important to rural recruitment and retention in terms of *affinity* (e.g., rural background of physician), *economic incentive* (e.g., Medicare shortage area bonus payments), *practice characteristics* (e.g., telehealth continuing medical education programs), and *indenture* (e.g., National Health Service Corps [NHSC] obligations) models. Other factors shown to encourage recruitment and retention of physicians to rural locales include creation of a stable and financially sound rural health care delivery system; and provision of opportunities for physicians to live rewarding professional and personal lives. It should be emphasized that recruitment and retention are not synonymous and that factors that affect one do not necessarily relate to the other (Conte, Imershein, & Magill, 1992; Pathman, Konrad, & Agnew, 1994; Pathman, Williams, & Konrad, 1996; Rabinowitz et al., 1999a).

RURAL TRAINING

The production of rural physicians by U.S. medical schools varies widely, from 2 percent to 41 percent of graduates (Rosenblatt et al., 1992). High proportions of the graduating classes of publicly owned medical schools in rural states—particularly those that see their mission as training future family physicians—ultimately practice in rural areas. By contrast, research-intensive private schools in metropolitan areas with no commitment to family medicine have virtually no rural graduates (Rosenblatt et al., 1992).

Encouraging students from rural communities to become physicians (or other types of health providers) begins as early as middle school with experience such as “Career Days” and continues with mentoring and opportunities for work experience in high school. Once in medical training, it is important to provide opportunities throughout medical school and residency to work in rural settings, and supports physicians in practice after they settle in rural areas. Talley (1990) asserts that (1) students with rural origins are more likely to train in primary care and return to rural areas, (2) residents trained in rural areas are more likely to choose to practice in rural areas, (3) family medicine is the key discipline of rural health care, and (4) residents practice close to where they train. Thus, rural training increases interest in rural practice at all stages of medical education. This interest, coupled with a medical school and residency training environment that values generalism, community-responsive practice, and rural life, is a recipe for improving the flow of medical practitioners to underserved rural areas.

Federal and state governments and medical education programs have implemented a variety of educational strategies to ameliorate rural physician maldistribution problems and to promote the choice of rural practice by physician graduates. Federal and state investments in these areas have been very effective, a fact reflected in their popularity and numbers. In many states, medical schools, Area Health Education Centers (AHECs), and state offices of rural health create a synergy as they work together.

Studies have demonstrated that the medical school programs that are most likely to produce rural physicians admit medical students with rural backgrounds and interest; work with a rural-focused mission; have a family medicine department; offer visible, credible faculty role models with rural experience; require sequential educational experiences in rural settings; provide advising programs to create a bridge to residency training, and require a family medicine curriculum of some length (Blackman, 2001; Geyman et al., 2000; Rabinowitz et al., 1999b).

Characteristics of graduate medical education (GME) training programs that successfully prepare physicians for rural practice include: creation of rural training tracks, fellowships, rural mission, rural location, procedural orientation, and a director with rural experience. Effective programs emphasize training in advanced obstetric care,

emergency care, general trauma care, pre- and postoperative care, surgical assisting, geriatrics, medical specialties, counseling, practice management and informatics, and community assessment (Geyman, 2001; Geyman, Norris, & Hart, 2001).

Three overriding barriers to rural residency training are inadequate reimbursement, stringent accreditation requirements, and an unhealthy rural health care delivery environment (Saver et al., 1998). Although the United States has thousands of rural hospitals, many of which have hundreds of beds and are located in communities of more than 20,000, only 70 of them received Medicare GME reimbursement in 1994, and their combined reimbursement amounted to less than 1 percent of all such reimbursement (Slifkin, Popkin, & Dalton, 1998). During 2000, only 7 percent of the nation's rural training took place in rural communities (Rosenblatt et al., 2002).

PRODUCTIVITY AND INCOME

Nonmetropolitan FPs and general practitioners (GPs), on average, earned \$130,000 per year in 1996 (net income after expenses but before taxes), as compared to \$131,000 for their metropolitan counterparts (AMA, 1998). This rural-urban parity of salaries is shown across all physician specialties. But in 1996, nonmetropolitan FP/GPs worked on average six hours more per week than large metropolitan FP/GPs, and they reported nearly 20 percent more patient visits (AMA, 1997). Thus, rural providers worked substantially more hours and performed more visits for about the same net income, even before taking into account the heavier on-call burden of rural practice. Rural physician incomes vary considerably, with the income of some physicians limited by small population bases, low reimbursement levels, low levels of insurance coverage, and high insurance discount levels (Wright, 2001). A critical issue is the extent to which the Balanced Budget Act of 1997 (BBA97) and managed care will curtail the real income of rural generalist and specialist physicians. This issue goes beyond the direct payments to physicians, to the fiscal health of local facilities with whom the local physicians often are strongly tied both financially and by their clinical scope of services. Furthermore, the business of rural physician practice is a difficult one that requires significant expertise and business acumen (Larimore & Rehm, 2001).

REIMBURSEMENT AND MANAGED CARE

Medicare and Medicaid reimbursement policies may represent half or more of the incomes of rural physicians (FORHP, 1997). The BBA97, the Balanced Budget Refinement Act of 1999 (BBRA99) and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) are dramatically altering the fiscal realities of rural clinical practice and the rural health care delivery system environment, including the training of physicians. These changes are playing out in an environment in which managed care and network development have also come

into place, as described extensively elsewhere (see managed care: Casey, 1999; see network development: Wellever, 1999; see Medicare: Mueller, Schoenman, & Dorosh, 1999; see Medicaid: Slifkin & Casey, 1999; see BBA97 and BBRA99: RUPRI, 1999a, 1999b, 1999c; see HIPAA: Hart et al., 2003; and see GME funding: Slifkin, Popkin, & Dalton, 1998; Henderson, 1999). Rural physicians and other providers now practice in a hostile fiscal environment where their reimbursement and that of other rural facilities is complicated, uncertain, and often lower than that of their urban counterparts.

Managed care has diffused into rural areas much more slowly than into urban areas, and its share of the rural market varies greatly from state to state (McBride et al., 2003; Rural Health Research Center, 1997). In 2001, Medicare+Choice enrollment in rural counties was estimated to be 9 percent (compared to 50% nationally). To survive in the business side of rural practice, physicians must deal with payment discounts, staff, changing federal reimbursement schemes, negotiating and participating in networks, risk evaluation, and managed care guidelines, often without the specialized staff that handle these issues in urban settings. Physicians must choose between the advantages of networks and managed care (e.g., economies of scale and better on-call coverage) versus loss of local independence and control (e.g., cutbacks in local charity care and scope of service) (Larson & Hart, 2001).

FEDERAL AND STATE RURAL POLICY AND AMELIORATIVE PROGRAMS

Federal and state governments have sponsored numerous programs designed to improve health workforce supply in rural areas. Indirect programs such as Medicare and Medicaid provide insurance financing that reimburses rural practitioners for services that otherwise would go unpaid or would neither be sought nor provided. Federal programs also provide supplementary Medical Incentive Payments to providers in designated rural health shortage areas and cost-based reimbursement for authorized Rural Health Clinics. Direct service programs include AHECs, Community Health Clinics (CHCs), NHSC scholarship and loan programs, Title VII and VIII health professional training funding, the Rural Outreach Grant Program, the Indian Health Service, and rural Network Development grant programs (Geyman, Norris, & Hart, 2001; Ricketts, 1999b). These programs significantly affect the distribution and other aspects of rural physician supply. For instance, the current federal initiative to increase the number and coverage of the nation's CHCs has significant physician workforce consequences. The NHSC places health care providers in rural shortage areas in an effort to provide care where it otherwise might not be available. In addition to providing scholarships and loans to students and medical care in shortage areas, the NHSC encourages retention of physicians in underserved rural areas, with varying degrees of success (Pathman, Konrad, & Ricketts, 1992; Rosenblatt

et al., 1996). Any general tightening of federal funding for rural programs and facilities will undermine efforts to promote recruitment, retention, and effective practice within rural areas.

Numerous and varied state programs are designed to facilitate the production, recruitment, and retention of generalist physicians within rural towns (Slifkin, 1999). Among the largest are state-funded scholarship and loan repayment programs that require recipients to make repayment by practicing in a rural town designated by the state. In their national study, Pathman and colleagues (2000) found that in 1996, 41 states operated such programs with a field strength of 1,676 physicians, nurse practitioners, and physician assistants.

INTERNATIONAL MEDICAL GRADUATES

The supply and distribution of rural physicians is also influenced by federal policies regarding international medical graduates (IMGs). Foreign-born IMGs are physicians who enter the United States via the Physician Exchange Visitor Program to receive residency and other medical training. The number of foreign-born IMGs increased during the 1990s. Many settle permanently in the United States, with all IMGs now representing 24 percent of the patient care physician workforce (AMA, 2001). IMG physicians come from all over the world, but in 2000, nearly half had received their medical school training in just seven countries: India (which sends a full 20% of IMGs), the Philippines, Mexico, Pakistan, China, the Dominican Republic and Egypt.

Graduates of foreign medical schools who complete residency training in the United States can participate in federal and state “incentive” programs designed to bring physicians to underserved rural areas, in some cases in exchange for permanent residence status at the conclusion of several years of service. At least in part because of these programs, almost 12,000 IMGs (excluding residents) worked in rural areas of the United States in 2000. While IMGs play a significant role in providing care in small rural communities (Hagopian et al., in press), many do not stay in the underserved areas that originally recruited them. The future direction of IMG policies and programs is clouded, given the cap on U.S. residency slots, the Council on Graduate Medical Education’s recommendations to limit federal funding of IMGs through Medicare, and concerns about national security.

DESIGNATION OF SHORTAGE AREAS

A key issue related to improved configuration of the rural health workforce is the designation of areas for the targeting of program interventions (e.g., shortage areas in which NHSC obligator physicians can be placed). Health Professional Shortage Areas (HPSAs) and Medically Underserved Areas/Populations (MUA/Ps) are used for this purpose. Many federal programs in rural areas are tied to

Table 2-2: Number of Nonmetropolitan Primary Care Shortage Designations

Year	Number of Shortage Designations	Approximate Number of Providers Needed to Remove Designations
1980	1,350	2,587
1981	1,401	2,548
1982	1,423	2,313
1983	1,478	2,421
1984	1,323	2,081
1985	1,360	2,094
1986	1,304	1,887
1987	1,302	1,797
1988	1,307	1,794
1989	1,343	1,884
1990	1,440	1,970
1991	1,510	1,998
1992	1,613	2,052
1993	1,746	2,051
1994	1,843	2,206
1995	1,776	2,238
1996	1,808	2,259
1997	1,832	2,303
1998	1,885	2,343
1999	1,916	2,489
2000	1,847	2,382
2001	2,229	3,293
2002	2,278	3,432
2003	2,294	3,467

Sources: BPHC, 1997, 2000; Richard Lee, BPHC, personal communication, July 5, 2003.

HPSA and MUA/P designations, often in combination with Office of Management and Budget metropolitan/nonmetropolitan status (Rosenblatt & Hart, 1999). The number of nonmetropolitan shortage designations increased during the 1990s from 1,440 in 1990 to 1,916 in 1999 (BPHC, 1997, 2000, 2003) (Table 2-2). It is estimated that in 2003, the designated areas had a rural population of more than 28 million and that nearly 3,500 physicians would be needed to reach a ratio of 1 physician per 3,000 population. The Bureau of Primary Health Care proposed a major methodological change for shortage/need designation in 1998, and other federal programs are considering alternative designation criteria. Accurate revisions of the current short-age/need designation system are critical to ensure the appropriate targeting of government resources. It is important that researchers, policy analysts and policy makers address issues such as the varied purposes of shortage designations, their methodological premises, and how expansive or restrictive they are. Subtle methodological

distinctions may cause enormous differences in federal resource allocation, with significant consequences for rural physicians and populations.

SAFETY NET PROVIDERS

The formal and informal rural safety net—which tries to ensure a minimal level of health care to people who need it, even if they cannot afford it—is under stress from the growing numbers of rural residents who are uninsured and underinsured, rising health care costs, difficult economic times, and the fiscal realities that BBA97 and BBRA99 are causing providers. In many rural agricultural towns, local farmers and ranchers have either dropped their health insurance or have converted to policies with high deductibles. For local generalist providers, these policies are tantamount to no insurance. CHCs and Medicaid play essential roles in providing care for rural indigents, as do many other formal government, private, and foundation endeavors. Some 3.9 million rural residents received CHC services in 1996 (COGME, 1998). In small and remote rural towns, much of the safety net workload is informal, dependent on care delivered by a few local physicians and other providers with little or no reimbursement. Despite the fact that rural residents are increasingly in need of safety net medical services, researchers and policy makers have inadequate information on the magnitude of unmet need or the amount of care that is already provided at no or low cost.

TELEHEALTH

Telehealth is a technology with enormous potential for changing rural physician practice and increasing access to sophisticated medical care for rural residents. During the 1990s, technology developed rapidly to produce more economical, reliable, and higher quality telehealth services, and the federal government has funded numerous demonstration projects (Norris, 2001). But few private and government medical care payers provide reimbursement for telehealth services, and physician-related uncertainties include problems associated with interstate licensure and standardization/quality criteria. It will likely take years before we learn whether the technology can help overworked primary care physicians better serve their local community, or whether it will be used primarily as an access point for specialty care.

OTHER ISSUES

Many other national and rural health care issues dramatically influence the rural physician workforce. The implementation of HIPAA both directly and indirectly influences the rural workforce through its control over how care is provided and the cost of care. Reimbursement levels, scope of clinical coverage, and breadth of subpopulation coverage from the Centers for Medicare and Medicaid Services and its state partners influence the ability of providers to keep practicing in rural communities. An especially critical current issue is the dramatic increase in provider malpractice premiums, which can price providers

out of rural practice and cripple training programs. Health policy makers should examine all proposed policies and programs carefully for their intended and unintended workforce influences.

NURSE PRACTITIONERS (NPs)

Of more than 63,000 trained NPs nationwide in 1996, about 56,000 were employed in nursing. Of these, 33,000 used the title NP, and 24,000 of this group were state licensed as advance practice nurses (Baer & Smith, 1999). The number of NPs has grown rapidly and is expected to double by 2015 (Cooper, Laud, & Dietrich, 1998). It is not known what number of licensed NPs apply their added NP authorities substantially in their practices. Licensing authority for independent practice and prescriptive authority varies widely from state to state (Sekscenski et al., 1994). Nor is it known what percent of NPs practice as generalists, despite the fact that the majority of NPs provide primary care.

About 20 percent of NPs practice in nonmetropolitan areas, and many of the training characteristics described for successful rural physician production are characteristic of NP programs (Baer & Smith, 1999). Factors negatively influencing the supply of NPs in rural practice include many of those mentioned for physicians (e.g., longer hours, more isolation, and fewer colleagues) as well as those more specific to NPs (e.g., prescription-writing restrictions, low Medicaid reimbursements, and private insurance policies) (Anderson & Hampton, 1999). NPs have been shown to be present during 37 percent of rural hospital outpatient visits, compared to 5 percent of urban visits (Anderson & Hampton, 1999). In Washington State, NPs provided 10.3 percent of all the outpatient rural generalist care (Larson et al., 2003).

PHYSICIAN ASSISTANTS (PAs)

Slightly more than 39,000 clinically active PAs practiced in the United States in 2000 (AAPA, 2001). About 18 percent of PAs practice within nonmetropolitan areas. Of the full-time rural PAs, 69 percent identified with generalist clinical care (Larson et al., 1999a). The most recent graduating PA cohorts are less likely to practice in rural areas than those PAs who graduated earlier (Larson et al., 1999b). Only 10 percent of PAs who graduated during the past four to seven years were practicing as generalists in a rural area, compared to 37 percent of those who graduated 12 or more years ago. There is also evidence that generalist PAs are attracted to states with favorable PA practice laws. In terms of ambulatory visits, full-time rural generalist PAs are nearly as productive as family physicians (Larson & Hart, 2001).

A significant issue for both NPs and PAs is how their clinical scopes of practice overlap with generalist physicians and other providers such as registered nurses. Clinical scope

of practice turf battles are a longstanding issue, as are questions related to the degree to which various provider types act as substitutes and complements. Some recent research indicates that the quality of NP and PA care may be comparable to generalist physician care where there is an overlap in scope of practice (Mundinger et al., 2000; Rosenblatt et al., 1997), but these findings are controversial and need further investigation. The overall cost, access, and quality implications of different personnel type configurations of NPs, PAs, and generalist physicians are not well understood. Issues such as physician acceptance of NPs and PAs, the role of state practice laws, and the characteristics of those providers and provider types who render care for the rural poor and elderly should be investigated further. In Washington State, PAs provide 14.4 percent of outpatient generalist rural care.

NURSES

The largest single group of rural health care providers is registered nurses, accounting for nearly two-thirds of all providers. In 1996, more than 420,000 nurses practiced in rural areas. Employment of registered nurses is expected to grow faster than the average for all occupations through 2006, a trend that will create many jobs. The 1996 National Sample Survey of Registered Nurses found that 80 percent of all registered nurses were working in metropolitan areas, and 20 percent were in nonmetropolitan counties. The northeastern states had the highest number of nurses per population and the southern states the lowest. Ratios of registered nurses to population varies substantially by region and county size and follows physicians distribution (Movassaghi et al., 1992; HRSA, 1996).

One study demonstrated that those nurses most likely to be working in rural locations were rural high school graduates with rural clinical experience during nursing school (Gordon & Denton, 1992). Further studies are needed to understand more about the reasons for the variations in availability of nurses and to develop standards of adequacy of nursing support for counties with different characteristics. Defining nursing workforce need and requirements is a necessary step in developing a long-term nursing national strategic plan (Movassaghi et al., 1992). Planning for nursing recruitment must be linked to examination of retention factors. Improving the job environment (Pan et al., 1995), minimizing paperwork requirements (Congdon & Magilvy, 1995), addressing inequality of salaries (Pan & Straub, 1997), and offering continued professional education development (Farmer & Richardson, 1997) are workforce policy areas to be addressed. In many cases, restraints on the scope of local rural clinical care are limited as much by the availability of experienced local clinic and hospital nursing staff configurations as by the physician mix. It is clear that the United States is experiencing a national nursing shortage that puts exceptional stress on the rural health care delivery system and limits local access to care.

OTHER HEALTH CARE PROFESSIONALS

Many other types of rural health professionals play an important role in the delivery of health care to rural populations. These include, but are certainly not limited to, certified nurse anesthetists, certified nurse midwives, chiropractors, public health professionals, pharmacists, mental health professionals, naturopaths, dentists, and physical therapists. We know surprisingly little about these provider groups, including, for example, the workforce configuration and needs of rural local health districts and mental health services (Hartley, Bird, & Dempsey, 1999; Richardson, Casey, & Rosenblatt, 2001; Woolf, Dewar, & Ruditer, 2001). Further research is necessary to determine the need for, supply, and distribution of these professionals in rural America.

CONCLUSIONS

Providing accessible, high quality health care to rural Americans requires a sufficient number of health care providers, with training appropriate to the population they serve. Rural areas have historically struggled to recruit and retain well-trained health professionals. The smaller and more remote the area, the more difficult the challenge. The data presented in this chapter demonstrate that the problem is exacerbated as the health care enterprise becomes larger and more specialized, because rural areas have trouble sustaining capital-intensive health care structures and attracting and retaining specialized providers.

The inadequate health workforce supply in rural areas is of broad public policy importance because a significant proportion of Americans live in rural areas, and they are on average older, poorer, and less well-insured than their urban counterparts. Efforts to constrain health care costs, declining physician interest in generalist disciplines, the tendency for female physicians to practice in urban settings, and chronic shortages of many categories of health professionals make the problems seem at times to be intractable. But federal and state policies have had a powerful influence in the past, and with governmental support, training institutions have demonstrated their ability to respond to rural health workforce shortages.

In the chapters that follow, we will explore these issues in more depth and provide detailed state-by-state data on various aspects of the rural health workforce. Timely, accurate, and comprehensible data are a prerequisite to both the diagnosis and treatment of the chronic health workforce problems confronting rural communities. The problems are large, but they are not insoluble.

Rural Health Workforce Methods and Analysis

ERIC H. LARSON, PH.D. • L. GARY HART, PH.D.

INTRODUCTION

In the preceding chapter, we described trends and issues in the rural health workforce. To make sense of that information, it is important to understand how these trends and statistics are derived. In this chapter, we discuss key methodological issues that underpin rural health workforce analysis. We begin with the problem of defining what is “rural.” No single definition of rural areas or populations exists. Therefore, any classification we use to separate rural areas from urban areas—or more rural areas from less rural ones—is limited. Variations can alter policy decisions, such as the designation of health workforce shortage areas, which determine whether a rural area is eligible for government programs. Indeed, different sets of rural classifications are often the reason why rural statistics from different sources seem to contradict each other. Therefore, we review the rationale, strengths, and limitations of several rural classifications used in policy work and health services research.

In the second part of this chapter, we outline important issues to keep in mind when undertaking rural health workforce analysis. These methodological issues include who is counted as a rural resident, who is counted as a rural provider, how providers should be counted, comparisons of shortage area designation strategies, and rural/urban comparisons versus intrarural comparisons. We also direct attention to some issues of data interpretation related to the regionalization of specialty care and provider recruitment and retention.

DEFINING RURAL

The term rural suggests many things: landscape types, unique demographic structures or settlement patterns, isolation, economic activities such as farming, forestry and mining, and a unique socio-cultural milieu. Taken singly or together, however, these *aspects* of rurality never completely *define* rurality. Rural cultures exist in urban places. Farming occupies only a tiny fraction of the rural population. Urban places and populations often differ more from each other than they do from their rural “hinterlands.” Generations of rural sociologists and rural geographers have struggled with the concept, not always with success. Charles Galpin, the American “father of rural sociology,” suggested in 1918 that the terms “rural” and “urban” might be abandoned as theoretically hopeless (Gilbert, 1982).

Despite the theoretical limitations of the concept of rurality from the perspective of sociology or academic geography, it remains a practical analytic and policy tool. But the theoretical weakness of the concept has an important ramification for its use in policy, research, and data analysis. We must specify which aspects of rurality are relevant to the phenomena being examined and employ a definition that at least partially captures those aspects. Thus, the definition of rurality employed for one purpose may be inappropriate or inadequate for another. If one asks the question, “What’s rural?” the answer must be, “It depends on the question being asked.”

In addition to thinking about which aspects of rurality are important for any given policy issue or research question, the investigator must also contend with the geographical level of available data. The strengths and weaknesses of any given classification are strongly rooted in its underlying geographic unit. While smaller geographic areas allow for more detailed analyses, less information is collected at this scale due to cost and methodological difficulties. Typical units used for the collection of health and demographic data in the United States include states, counties, municipalities, census tracts, and ZIP codes. The county is a convenient and frequently used unit of analysis. Its boundaries remain fairly stable over time, and many health-related data are collected at the county level. The large geographic size of counties (compared to, for example, census tracts) and the demographic and economic heterogeneity that often exists within counties, however, can weaken some kinds of analyses.

UNDERBOUNDING AND OVERBOUNDING

One way to evaluate the usefulness of a rural classification is to consider the extent to which it “underbounds” or “overbounds” rural areas. Some large counties, especially in the west, contain both large cities and less densely settled areas that can be considered rural in terms of economy, landscape, and level of services. Due to their urban cores, these counties are usually defined as metropolitan. In such a case, the rural areas are underbounded—that is, areas that “should” be considered rural are being counted as urban. At the same time, in this example, urban areas are being overbounded. In other definitions, small towns within counties may be classified as rural when, for some purposes, they are more usefully understood as urban centers. In this case, rural is being overbounded and urban is being underbounded. Some degree of over- and underbounding

Table 3-1: Comparison of Some Common Rural Definitions

Definition	Geographic Unit	Characteristics	Strengths/Weaknesses
Metropolitan/ Nonmetropolitan	County	Dichotomous definition used by OMB. Counties that are part of Metropolitan Areas (MA) are metropolitan. All others are considered nonmetropolitan. About 19.7% of 2000 population lived in nonmetropolitan areas. USDA taxonomy.	Strengths: Useful as a dichotomous definition of rurality. Fairly stable over time for examining longitudinal data. Underlying geographic unit (county) very stable over time. Weaknesses: Does not differentiate nonmetropolitan counties. Significant underbounding of rural in many large metropolitan counties. Some overbounding of rural in nonmetropolitan counties with larger cities.
Rural Urban Continuum Codes (RUCCs)	County	Metropolitan counties are categorized into four groups, based on size of county population. Nonmetropolitan counties are categorized into six groups, based on total urban population of the county and whether it is adjacent or nonadjacent to a metropolitan county. USDA taxonomy.	Strengths: Differentiates metropolitan and nonmetropolitan counties by important demographic differences within each group. Adjacency criteria may suggest degree of economic integration with metropolitan county. Weaknesses: Over and underbounding as in metropolitan/nonmetropolitan. Use of total urban population to classify nonmetropolitan counties may tend to mask differences between counties with several small urban centers versus one or two larger centers.
Urban Influence Codes (UICs)	County	Metropolitan counties are grouped into two groups based on size of urban population. Nonmetropolitan counties are grouped into seven categories based on size of largest city in county and adjacency/nonadjacency to a metropolitan county. USDA taxonomy.	Strengths: Use of largest city criterion for grouping nonmetropolitan counties may be better than RUCC method for suggesting level of locally available services by differentiating counties with several small towns from those with one or two large towns. Adjacency criteria may suggest degree of economic integration with metropolitan county. Weaknesses: Over- and underbounding occurs as in metropolitan/nonmetropolitan. Does not differentiate metropolitan counties as well as RUCCs.
Economic Research Service Typology	County (non- metropolitan only)	Classifies non-metropolitan counties into one of six mutually exclusive categories based on primary economic activity. Counties may also be assigned nonexclusive policy classifications. USDA taxonomy.	Strengths: Very useful for differentiating among non-metropolitan counties according to economic activities, rather than demography or geography. Weaknesses: No classification or differentiation of metropolitan counties. County unit creates over- and underbounding problems. Economic categories may not be specific enough for many uses.
Goldsmith Modification	County and census tract	Identifies metropolitan counties with large land areas and large rural populations (using census tract data). Based on the OMB metropolitan/nonmetropolitan definition. HRSA taxonomy.	Strengths: Enhances the metropolitan/nonmetropolitan definition by addressing the problem of overbounding urban in large area MA counties. Weaknesses: Continued underbounding of urban in nonmetropolitan counties. No differentiation of nonmetropolitan counties or small area metropolitan counties. Difficult to use with data based on counties. No plans to be updated.
Urban/Rural	Census tract	U.S. Bureau of the Census definition. Rural census tracts are those outside of places with >2,500 population and lying outside of “urbanized areas” (usually found in MA counties in and around central cities). About 24.8 % of the 1990 population lived in rural areas.	Strengths: Significantly reduces problems of under- and overbounding associated with use of county-based definitions. Weaknesses: Data other than census data are not collected by census tract. Difficult to apply to health data that are often collected at the county or ZIP code level. Most data consumers lack familiarity with census tract geography and definitions. Not stable across census years—there were substantial changes for the 2000 census.
Rural Urban Commuting Areas (RUCAs)	Census tract	Multi-tiered definition developed by HRSA, WWAMI RHRC and USDA. Employs census commuting data to classify census tracts based on census geography and commuting activity between places.	Strengths: Use of commuting data strongly differentiates rural areas according to their economic integration with metropolitan areas and other rural areas. Very sensitive to demographic change. The structure of the codes allows for many levels of generalization—from 2 groups (rural/urban) to 30. Weaknesses: Difficult to apply to health data that are often collected at the county or ZIP level. Will not be stable over time—very sensitive to demographic change. Complex structure of codes not easy to master for casual users.
Rural Urban Commuting Areas (RUCAs-ZIP approximation)	U.S. Postal Service (USPS) ZIP codes	Approximates the census tract RUCA codes for ZIP codes.	Strengths: Use of commuting data strongly differentiates rural areas according to their economic integration with metropolitan areas and other rural areas. Very sensitive to demographic change. The structure of the codes allows for many levels of generalization—from 2 groups (rural/urban) to 30. Use of the ZIP code unit makes them useful with a wide variety of data collected at that level. Weaknesses: Will not be stable over time—very sensitive to demographic change. Complex structure of codes not easy to master for casual users. The underlying geographic unit is subject to substantial change by the USPS over time.

is inherent to any definition of rurality. One simply has to understand which way the “error” goes and keep it in mind when evaluating data and policy.

COMMONLY USED DEFINITIONS

In the United States, most definitions of rurality use the census tract or the county as the basic geographic unit. A detailed discussion of the census tract-based U.S. Census Bureau definition of rurality, as well as four commonly used county-based definitions, follows. In addition, we discuss a recently developed taxonomy based on postal ZIP codes that has been adopted by the Federal Office of Rural Health Policy (FORHP) for some of its grant programs. The various definitions discussed below are compared in Table 3-1. While individual state-based definitions are not reviewed here, some states have developed rural definitions relevant to their particular geography and policy issues. The Washington State Department of Health, for example, has used 124 aggregated ZIP code Health Service Areas (HSAs). For further information on any of these definitions, please see the Rural Health Resources section at the end of this volume.

CENSUS DEFINITION

The U.S. Census Bureau definition of rural begins with what is urban. Urban areas are defined as the territory in places of 2,500 or more population (Census Designated Place) or in the built-up “urbanized area” around a Census Designated Place with a population exceeding 50,000. The Census Bureau considers all other territories rural. Twenty-one percent of the U.S. population lived in census tracts designated as rural in 2000 (U.S. Census Bureau, 2003). This census tract-based number slightly exceeds the 19.7 percent living in nonmetropolitan counties. Populations living in small towns of greater than 2,500 in very remote counties are considered urban under the Census Bureau definition, but they are considered nonmetropolitan under the Office of Management and Budget (OMB) definition discussed below. At the same time, populations living in the more remote areas of large metropolitan counties are designated rural under the census definition. In fact, it has been shown that about 36 percent of the OMB nonmetropolitan population is designated as urban by the Census Bureau definition, and 15 percent of the OMB metropolitan population is designated as rural by the census definition (Ricketts, 1999c). This explains why, in many instances, “rural” figures in publications seem to be at odds with one another. At first glance, the relatively fine level of geographical detail offered by the use of census tracts as a unit of geography appears to be a major advantage over the somewhat coarse county unit (3,142 counties compared to 65,433 census tracts). However, except for decennial demographic data, very little

information is collected at the census tract level. (For more details, see U.S. Census Bureau, 2003.) With the 2000 census, the Census Bureau has added to its taxonomy by subdividing rural into larger and smaller places.

COUNTY-BASED DEFINITIONS

METROPOLITAN/NONMETROPOLITAN

Health services researchers and policy makers commonly use dichotomous definitions of rurality. Of these, the OMB’s county-based metropolitan/nonmetropolitan taxonomy is used most frequently. It also forms the basis for more detailed taxonomies such as the Department of Agriculture’s (USDA’s) Urban Influence Codes (UICs), Rural Urban Continuum Codes (RUCCs), and the Economic Research Service’s county typology codes (referred to as the ERS codes—see below). The OMB defines Metropolitan Areas (MAs) as areas containing a (census-defined) central city of at least 50,000 population, a total (census-defined) urbanized area population of at least 50,000, and a total metropolitan population of at least 100,000 (75,000 in New England) (Ricketts, Johnson-Webb, & Taylor, 1998). Counties that include a central city or have at least 50 percent of their population in the urbanized area of the central city are classified as metropolitan. All other counties are considered nonmetropolitan. There are 3,142 counties in the United States. In 1999, 2304 of the counties were non-metropolitan. Based on 2000 census data, 19.7 percent of the population of the United States lived in them¹. (For more details see OMB, 2003.)

RURAL URBAN CONTINUUM CODES (RUCCS)

Taking the metropolitan/nonmetropolitan distinction as its basis, the RUCC codes subdivide metropolitan counties into four groups based on the size of their populations. Each nonmetropolitan county falls into one of six categories based on the total size of its population and whether it is adjacent to a metropolitan county. To qualify as adjacent to a metropolitan county, a nonmetropolitan county must share a boundary with a metropolitan county, and there must be a minimum of commuting to the metropolitan county. This is a much more graduated definition of rurality than the metropolitan/nonmetropolitan definition. For example, if one is most interested in very isolated rural counties with small urban settlements, the RUCC taxonomy makes it possible to distinguish those counties quite easily. One important aspect of the RUCC scheme is that it uses total urban population in the county as a criterion, not the size of the largest settlement. In the RUCC taxonomy, for example, a nonmetropolitan county with three urban centers of 4,000 population is not distinguishable from a nonmetropolitan county with a single population center of

¹ Analyses using the metropolitan/nonmetropolitan classification in this volume use the 1999 definition. It is expected that increasing urbanization will increase the number of counties classified as metropolitan in the near future.

12,000 population. (For more details on RUCCs see ERS, 2003.)

URBAN INFLUENCE CODES (UICs)

The UIC taxonomy is another county-based definition based on the metropolitan/nonmetropolitan dichotomy. In this system, counties are classified into nine groups, two metropolitan and seven nonmetropolitan. Metropolitan counties are divided into those with populations of greater and less than one million. Nonmetropolitan counties are grouped according to adjacency and nonadjacency to metropolitan counties and according to the size of the largest urban settlement in the county. As with the RUCC taxonomy, physically adjacent nonmetropolitan counties are considered adjacent only if a minimum level of commuting occurs between the metropolitan and the nonmetropolitan county. The UIC system is often employed in the analysis of rural health services. Its use of the size of the largest town in a county as a taxonomic criterion is often helpful because the size of the largest town in a county often relates to the likelihood of the local availability of hospitals, clinics, and specialty services. A collapsed version of these codes is used in Chapter 5 of this monograph to describe the workforce profiles of the 50 states. (For more details, see ERS, 2003; Ghelfi & Parker, 1997.)

ECONOMIC RESEARCH SERVICE (ERS) TYPOLOGY OF NONMETROPOLITAN COUNTIES

The USDA has also developed a taxonomy for nonmetropolitan counties that is quite distinct from UICs, RUCCs, and other county-based definitions. The ERS taxonomy relies on the primary economic activity of each county rather than demographic characteristics. This typology assigns one of six mutually exclusive economic categories—farming dependent, mining dependent, manufacturing dependent, government dependent, services dependent, and nonspecialized—to each county. In addition, a county may receive one or more policy classifications: retirement destination, federal lands, commuting, persistent poverty, and transfers dependent (Ricketts, Johnson-Webb, & Taylor, 1998). Taken together, the economic classification with any policy classification may help the researcher or policy maker form an understanding of the socio-economic context of health services and policy issues in a county or group of counties. The ERS typology can be a useful tool for moving beyond demographic and geographic characteristics alone as basis for understanding rural issues. (For more details, see ERS, 2003.)

RURAL URBAN COMMUTING AREAS (RUCAs)

A recently developed rural/urban definition uses census tract-level demographic and work commuting data to define 30 categories of rural and urban census tracts. The categories are based on the size of cities and towns and the functional relationships between places as measured by census-level

journey to work data. For example, in the RUCA scheme, a small town where the majority of commuting is to a large city is distinguished from a similar sized town in the same county with commuting connectivity primarily to other small towns. Thirty categories can be unwieldy, and the codes were designed to collapse in various ways to highlight different aspects of connectivity, urban settlement, and isolation and to facilitate better targeting of program interventions. The FORHP has adopted RUCA codes to determine eligibility for certain federal grant programs in rural areas, the ERS is using the codes in their studies, and researchers are using this scheme (Phillips et al., 2003).

The census tract-level RUCAs have the advantage of being demographically precise, but they have the disadvantage of the census tract unit—namely, that very few health data are collected at the census tract level. To address this issue and enhance the utility of the RUCA taxonomy, researchers at the University of Washington, working with the USDA ERS, developed an approximation of the census tract RUCAs for postal ZIP codes. The researchers used a census tract-ZIP code crosswalk table to match census demographic and commuting data as closely as possible to ZIP codes, and then assigned a RUCA code to every residential and commercial ZIP code in the United States. While slightly less precise than the census tract version, the ZIP code RUCAs are an important tool in rural taxonomy because a plethora of health and economic data include ZIP codes. It becomes possible to examine data at a fine level of geographic detail from such sources as vital statistics, disease registries, Medicare and Medicaid, insurance claims, and a host of others. Because the RUCA code areas are smaller than counties and thus have more geographically homogeneous characteristics, their use to examine such phenomena as physician-to-population ratios in this monograph would reveal greater disparities than are reported using county-based definitions. (For more information on census tract RUCAs, see ERS, 2003. For more information on ZIP code RUCAs, see WWAMI RHRC, 2003.)

Definitions of rurality are limited and approximate. Rurality is multidimensional, with many sociologic, demographic, economic, and geographic facets. The various rural concepts are often imprecise and occasionally contradictory. Sometimes, rurality is usefully understood as a continuum. Other times, it is better understood as a dichotomy. To choose a definition of rurality that helps the health policy maker or health researcher make useful distinctions between rural and urban, or within rural areas, it is important to understand which aspects of rurality matter for health, health workforce, and the delivery of health services to rural populations. We address these issues in the next section of this chapter.

SPECIAL ISSUES IN RURAL HEALTH WORKFORCE METHODS AND ANALYSIS

Health workforce policy and research are concerned primarily with assessing the adequacy of the supply and distribution of health care providers with respect to the requirements for health care services of a given population. In most cases, workforce analysis is performed to obtain a clear snapshot of the composition of the current health workforce and identify the location and magnitude of shortages, and in some cases, surpluses of providers. Increasingly though, policy makers and researchers are interested in forecasting such shortages. Accurate forecasts would, of course, greatly facilitate policy development and implementation. Unfortunately, while the statistical tools for forecasting shortages are improving, there is often little agreement about the assumptions that should go into such models, and accurate data are often unavailable. Accurate forecasting of rural shortages and population requirements for health is particularly difficult because of small populations and small numbers of providers. In this section, we review the methodological issues involved in measuring the rural workforce.

Generally, the discussion below addresses key issues in measuring the rural health workforce—measurement that would be a necessary prelude to any attempts to forecast and address workforce supply or population requirements for health services. Using almost any definition of rurality, an examination of the size and composition of the rural health workforce reveals important differences between the rural and urban health care systems. These differences raise important methodological and policy considerations that health policy makers and workforce researchers need to keep in mind.

DATA AVAILABILITY

Rural data from federal surveillance systems and surveys have been extremely limited (Ricketts, 1999a), and funds for rural surveys have been scarce. While there has been some progress in making more rural data available, the shortage of rural data continues to impede production of relevant, effective, and policy-relevant research. Workforce analysis, including methods for designating health provider shortage areas, is important to research, policy, and the targeting of resources to the rural communities most in need of providers. To make meaningful progress, researchers need better methods and tools to describe and compare quality of care for small numbers of providers and for providers practicing under unusual circumstances. Likewise, intrastate small area health provider workforce modeling and analysis methods are rudimentary and need to be further refined. Substantial progress has been made recently, primarily because of center funding from the FORHP, the Bureau of Health Professions (BHP), and the Bureau of Primary Health Care (BPHC). To maximize the development and utility of these methods, they will need to be widely disseminated to state offices of rural health, Primary

Care Offices, and analysts, among others (e.g., see Ricketts et al., 1994).

ESTIMATING PROVIDER SUPPLY—WHO GETS COUNTED?

Estimating provider supply usually begins with the question, “Whom should we count?” This question deserves serious attention for anyone interested in meaningful comparisons and analysis. The simplest comparison of rural versus urban physician supply is a case in point. In 2000, about 204 physicians (excluding residents) actively provided patient care per 100,000 population in the United States. In nonmetropolitan counties, the number was 119, and in metropolitan counties, 225 (BHP, 2002). This difference is, of course, deceptively large. As noted in Chapter 2, rural areas often do not have the population base to support specialists, and so specialists tend to concentrate in cities.

We can achieve a better sense of the difference in health workforce between metropolitan and nonmetropolitan areas by comparing the generalist physician-to-population ratios of metropolitan and nonmetropolitan parts of the country. (Generalists are defined here as physicians practicing in family practice, general internal medicine, general pediatrics, and general practice.) In 2000, 78 generalist physicians practiced per 100,000 population in metropolitan areas compared to 57 in nonmetropolitan areas, a large difference to be sure, but not nearly the magnitude of the previous comparison (BHP, 2002).

This illustration also applies to other types of health care providers. In rural areas, physician assistants are about 70 percent generalists; in urban areas, only about 40 percent work as generalists (Larson et al., 2001). Specialist dentists (oral surgeons, orthodontists, etc.) tend to concentrate in urban areas as well. When estimating rural provider supply, it is imperative to ensure that comparisons are meaningful.

ESTIMATING PROVIDER SUPPLY—HOW SHOULD WE COUNT PROVIDERS?

After deciding whom to count, another deceptively simple question that should be asked is, “How should we count providers?” While this question applies equally to rural and urban providers, the ramifications of a wrong answer may be much more severe for rural estimates of supply. In short, counting individual providers (head counts) without determining their medical specialty, level of clinical activity, or type of practice is likely to lead to substantial overestimates of the amount of care available to a population.

A recent study of the productivity of generalist physicians in Washington State (Larson et al., 2003) showed substantial variation in physician productivity. Using a standard full-time equivalent (FTE) metric of 105 outpatient visits per week, the study determined that 4,124 generalist physicians produced only 2,781 FTEs of care. In a large population of

physicians, it is possible to use such information to adjust estimates of available care from head counts.

The special issue that arises in estimating available care in small rural areas is that very high or very low productivity by one or two providers may severely bias estimates of available care based on head counts, even with a productivity adjustment applied. Conversion to FTEs will yield much better estimates of available care than simple head counts. But in areas served by only a few providers, such as a remote rural county, great care must be taken to obtain accurate estimates of provider productivity.

INTERPRETING ESTIMATES— SHORTAGE OR MALDISTRIBUTION?

We noted above that the generalist physician-to-population ratio for nonmetropolitan counties of the United States was 57 per 100,000 population in 2000 and 78 per 100,000 population in metropolitan counties. Does this discrepancy indicate a rural shortage of generalist physicians? A rural county may qualify for federal Health Professional Shortage Area (HPSA) designation at a ratio of 1:3,300 (30 generalist physicians per 100,000). Fifty-seven generalist physicians per 100,000 translates to a generalist physician-population ratio of about 1 generalist physician per 1,754 rural residents. Thus, it is difficult to claim that nonmetropolitan America overall is suffering from a severe shortage of generalist physicians. Even the state with the lowest nonmetropolitan generalist physician-to-population ratio (Louisiana) has 42 generalists per 100,000 population (1 generalist per 2,380 population). Closer investigation often reveals substantial intrarural and state-to-state variation in the supply of health care providers—both of which are evident in the interstate comparisons of provider supply shown in Chapter 4 and the state profiles in Chapter 5.

SHORTAGE DESIGNATION

The geographic maldistribution of health care providers in the United States is a longstanding problem, and many federal programs are designed to help mitigate provider shortages in rural areas. Eligibility for these programs is often based on the formal designation of a geographic area (usually a county or part of a county) as a shortage area, and this designation may significantly affect the number and type of health care providers available to a rural population. To grasp how shortages can be measured and mitigated, it is important to understand the two basic federal shortage designation types, the Health Professional Shortage Area (HPSA) and the Medically Underserved Area (MUA). Certain underserved populations are sometimes eligible for designations as population HPSAs or MUAs, but we discuss only geographic-based designations here.

HPSA DESIGNATION

The HPSA concept, under a different name (Critical Health Manpower Shortage Area), was originally developed to designate areas that would be eligible for providers serving

in the National Health Service Corps (NHSC). The NHSC program offers scholarships and loan repayment to health care providers in exchange for two to four years of service in underserved communities. HPSA status can be granted on the basis of shortages of medical or dental providers. HPSA designation is now used as a criterion for eligibility for several programs designed to enhance the rural health care workforce and increase access to care for rural residents. These programs include eligibility for 10 percent Medicare Incentive Payments, Medicare reimbursement for telehealth services, Rural Health Clinic certification, and of course, NHSC providers. HPSA designation criteria vary somewhat, but HPSA status is usually granted to a county or part of a county (usually an agglomeration of census tracts or minor civil divisions within the county) with fewer than 1 primary care physician per 3,500 residents in the area. (Areas with less than 1 physician per 3,500 but greater than 1 per 3,000 population may qualify in some circumstances; see BHP, 2003). NHSC physicians already in service, international medical graduates (IMGs) with J-1 visa waiver status, nurse practitioners, and physician assistants are not included in the count of providers used to determine the ratio of primary care physicians-to-population. The BPHC is currently considering changes to these criteria, including one that would recognize nurse practitioners and physician assistants in the provider count. Each nonphysician clinician would be counted as 0.5 of a primary care FTE. Such a change, along with others currently under consideration, could have a substantial effect on the eligibility of currently designated HPSAs (COGME, 1998; Federal Register, 1998; BHP, 2003).

MUA DESIGNATION

As with HPSA designation, Geographic MUA designation is granted to whole counties or parts of counties. MUA status is required for eligibility for establishment of Community Health Centers and Federally Qualified Health Centers and for eligibility for IMGs practicing under J-1 visa waiver status (IMGs with J-1 visa waiver status may also practice in HPSAs). Status as a MUA is granted based on a score assigned from a combination of four criteria: physician-to-population ratio, the proportion of the population 65 and older, the proportion of the population living on incomes below the federal poverty level, and the infant mortality rate. (For more information, see BHP, 2003.)

RECRUITMENT AND RETENTION

As noted in Chapter 2, recruitment and retention of health care providers in rural areas is both an important theme and a persistent problem in rural workforce policy and research. While the effects of programs to increase provider counts can be straightforward to measure, understanding long-term retention of providers in rural settings can be complicated. Studies of retention have yielded mixed results and raised the issue of what is meant by the term “retention.” For example, Pathman, Konrad, and Ricketts (1992) found very low rates of long-term retention of NHSC physicians in

their NHSC locations. Rosenblatt et al. (1996), on the other hand, found that while NHSC alumni did leave their original sites at a high rate, many continued to serve other underserved communities long after their service obligations had expired. In a study of the long-term locational behavior of physician assistants, Larson et al. (1999b) noted that there are several geographic dimensions of retention. From the perspective of a single community, the loss of a provider is a failure to retain a needed health professional. From the perspective of a state government that may have paid for training a rural provider, a move from one underserved community to another in the state is not necessarily a failure. If an NHSC dentist finishes her obligation in a small, underserved Appalachian community and moves to a small town in Montana with a shortage of dental providers, this is a loss to a particular community and state but not to the overall supply of providers caring for underserved rural populations. When evaluating programs or planning policy to enhance retention of rural providers, it is important to be clear about what is meant by retention in the particular programmatic or policy context.

REGIONALIZATION AND SPECIALTY CARE

A particularly complex issue that confronts rural health care is maintaining reasonable access to specialty care for rural residents. As already noted above, the base population required for some specialty areas of care is simply not present in many rural areas, and services become concentrated in tertiary centers. Even when the base population is large enough to support a specialty, other problems may impede the safe and efficient delivery of specialty care. Technological resources may be inadequate, and the long hours and lack of backup can be problematic for specialty care providers. Providing dependable specialty services often presents a complex health workforce problem, one that cannot be resolved just by obtaining the services of a physician specialist. It may be as difficult to recruit and retain ancillary providers such as radiology technicians, laboratory technicians, nurse anesthetists, and others with the training to support the delivery of specialty care as it is to recruit and retain specialist physicians.

Rural surgical services, for example, can be very difficult to retain even if a population is large enough to generate sufficient volume to keep a rural surgeon busy. Surgical services have become increasingly dependent on the availability of expensive technology and an infrastructure of support personnel including technicians, nurses, radiologists, pathologists, surgical assistants, and anesthesiologists. While nurse anesthetists perform a substantial amount of anesthesia services in rural settings, many rural general surgeons are reluctant to perform more complex procedures without an anesthesiologist (Lynge, 2001).

In the absence of local specialist providers, rural residents must rely on regionalized networks to receive specialist care. Regionalized care may require us to rethink who counts

as a rural provider. The case of the regionalization of rural obstetrics illustrates the critical tension between local care and regionalized care. It is well established that having local obstetrical care is associated with better neonatal outcomes (Nesbitt, 2002). At the same time, it has long been abundantly clear that the survival of high-risk infants is significantly enhanced by having early and efficient access to the neonatal intensive care unit (NICU) and the specialist nurses and pediatricians who practice there. An adequate obstetrical workforce to serve rural populations includes local providers who practice obstetrics on a regular basis and refer higher-risk women to tertiary centers at an appropriate time; it also includes the staff of NICUs in tertiary centers. When thinking about rural access to specialty care, workforce policy and analysis must move beyond the town, county, or local health service area and consider the larger regions in which many specialty services are delivered and the potential of telehealth to strengthen such regionalized systems.

COMPARISONS—LOOKING BEYOND AGGREGATE DATA

In a society in which 80 percent of the population lives in metropolitan areas, it is understandable that the remaining 20 percent of the population often gets lumped into a group called “rural.” While rural/urban comparisons are usually the right place to start, policy makers and researchers may tend to accept the dichotomous classification as primary and tacitly assume that intrarural variations in health, health care, and the health workforce are not as important as rural versus urban variation. Sometimes this is the correct approach; significant rural/urban variation in health status, health outcomes, or access to health care often marks differences best dealt with as a rural/urban issue. For example, during the late 1970s and early 1980s, researchers noted high rates of neonatal mortality among rural residents. Research and policy efforts were directed at understanding and addressing the rural/urban gap in neonatal survival chances, efforts that eventually eliminated those rural/urban differences (Hein & Lathrop, 1986; Rosenblatt, Reinken, & Shoemack, 1985; Larson, Hart & Rosenblatt, 1997).

Sometimes the rural/urban difference in health status, outcomes or workforce resources is not the most important one; substantial intrarural variation in outcomes, health status, health care provider supply, and workforce composition may also exist. The workforce in large rural towns is usually very different in composition and capability from the workforce found in small and remote towns of the same state. Overall rural averages (and rural/urban comparisons), while useful as a starting point in understanding rural workforce issues, should always be examined carefully to determine how much variability underlies the average. In workforce analysis, averages may hide as much as they reveal. For example, while the statement that rural care is oriented toward primary care is generally

true, it is also important to understand that some specialists are available in many rural areas and that they do tend to concentrate in larger regional (but rural) centers, leading to very different rural workforce profiles within states. This is explained at the state-by-state level in Chapter 5.

The importance of rurality as a distinguishing factor may vary from state to state as well. In Montana, the rural and urban generalist-to-population ratios are quite similar: 69/100,000 and 72/100,000. In Nebraska, the corresponding numbers are 59 and 73. State to state and region to region variation in rural workforce supply can be substantial too. Rural generalist supply per 100,000 population varies from 88 in Maine to 42 in Louisiana. New Hampshire has 15 general surgeons per 100,000 rural population, while rural Nevada has 4. The underlying socio-economic milieu varies too. Rural per capita income is \$17,591 in New Mexico and \$26,295 in Wyoming. In Kentucky, 16 percent of rural families live on incomes below the federal poverty level, while in Iowa, only 6 percent of rural families did so. Just as counting all providers equally in workforce analyses is problematic, counting local populations as head counts also can produce serious biases in results. For example, counting 20 boys of 11 years old in an area as equivalent to 20 older men of 80 is clearly not appropriate when estimating the health care needs of a community. Newer models of need (and alternative demand models) take the sex and age distribution and their estimated need and use of medical care into consideration. As these models become more sophisticated, disease-specific needs will be integrated

into them. All of these factors come to bear on workforce analysis, forecasting, and policy efforts to enhance the availability of providers to rural residents. Rural workforce policy must take into account both intrarural variation and regional variation in supply, demand, requirements, and socio-economic context.

SUMMARY

Rural workforce analysis often begins with selecting a definition of rural. The definition of rural that is employed is crucial. The selection of an appropriate definition for use in policy analysis depends on the questions being asked and on practical considerations of data availability. In addition to the issue of an appropriate rural definition, rural health workforce analysis presents unique methodological challenges. The different provider mix in rural areas, the regionalization of specialty care, the estimation of shortages, and the amelioration of shortages are all areas that require special analytic attention from policy analysts, policy makers, and researchers. Perhaps most important is the need to guard against assuming that all rural areas are similar or even that all rural areas in a single state are similar and face similar workforce problems. The next two chapters explore interstate and intrastate variation in the availability of rural health care resources extensively in a series of interstate comparisons and individual state rural health workforce profiles.



Rural Demography and the Health Workforce: Interstate Comparisons

ERIC H. LARSON, PH.D. • THOMAS E. NORRIS, M.D.

INTRODUCTION

There is an old saying, “If you have seen one rural place, you have seen one rural place.” Rural demography, economic status, and access to health services vary significantly across the United States. Thus, generalization from one rural place or region to another can be fraught with error. This variation occurs both across rural regions within single states (intrastate) and also between the 50 states (interstate). In this chapter, we address interstate variations in rural demography, economic status, and the availability of health care providers in rural settings. In Chapter 5, we present intrastate variation, although interstate comparisons can easily be made using the state profiles presented there.

To understand interstate variability in the workforce and supply of health care providers, it is useful to start with a portrait of the demographic and economic variation across the 50 states. In the pages that follow, we compare the 50 states according to the proportion of their population that is rural, size of the rural population, age structure, and economic status. This information gives demographic and economic context to the variation in the state-by-state per capita supply of health care providers. Finally, we provide interstate information on medical school and residency training. In this chapter, we examine interstate health care provider variation in detail, with an emphasis on the supply of physicians. (More comprehensive data on the supply of other types of health care professionals appear in the state health workforce profiles in Chapter 5.) Comparisons include interstate differences in rural/urban distribution of physicians, international medical graduates (IMGs), female physicians, dentists, nurses, and physician assistants.

RURAL POPULATION—PROPORTIONS VERSUS COUNTS

The fact that the U.S. Senate’s Rural Health Caucus Web page currently lists 86 members from 48 states highlights the importance of rural populations in states and state politics. By any definition, the majority of the U.S. population is urban (about 80% by the Office of Management and Budget [OMB] definition). Numerically, however, the rural population of the United States—about 55 million using the OMB metropolitan/nonmetropolitan definition—approaches the size of the entire population of Italy (see Chapter 3 for details). While the nation as a whole may be urban, many states are largely rural. In addition,

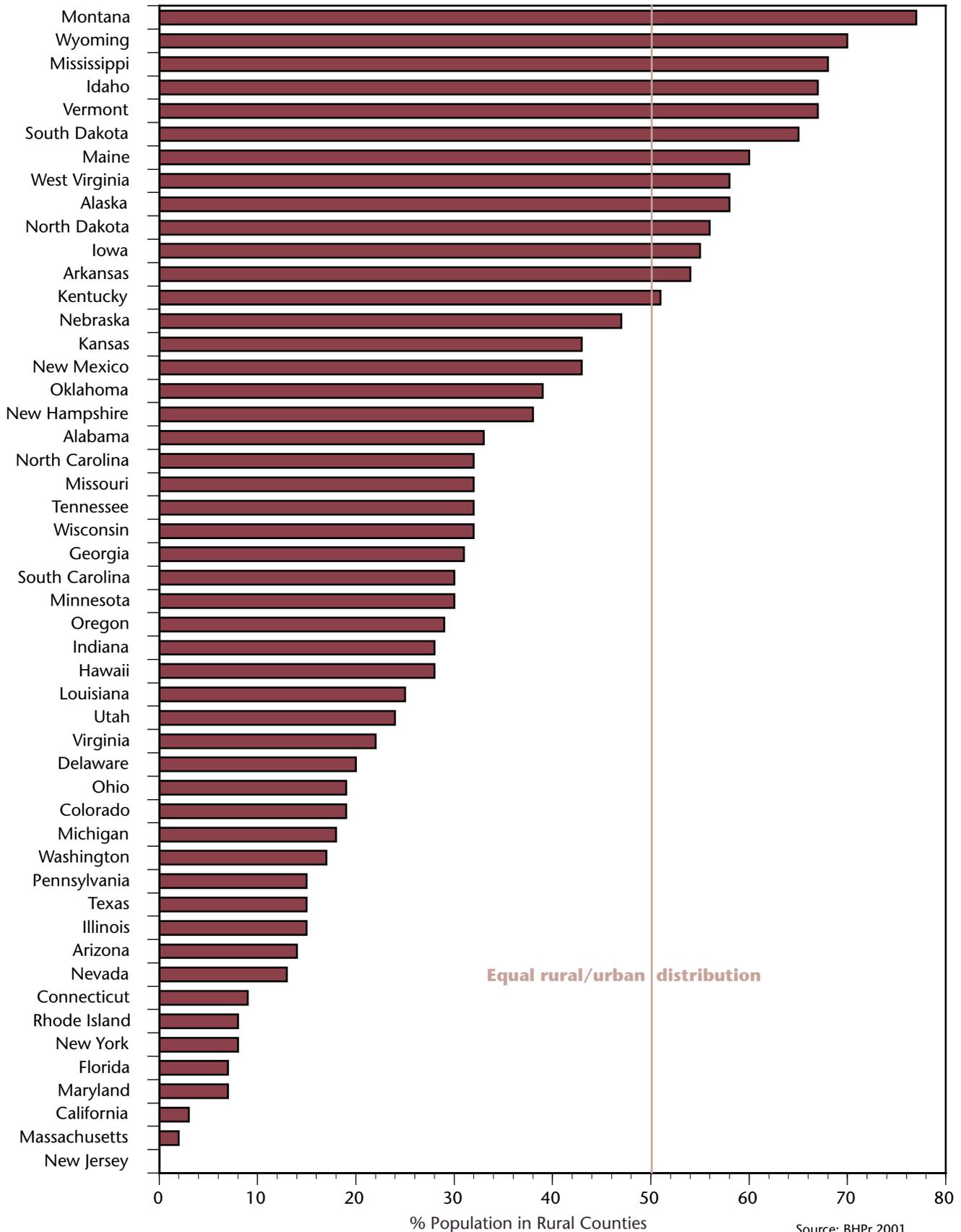
rural populations in several states number into the millions, even though they form a small proportion of the total population.

Rural population as a proportion of total state population is shown in Figure 4-1. In 13 states, more than 50 percent of the population resides in nonmetropolitan counties. Considered from this proportional perspective, Montana has the largest rural population in the nation, with more than 76 percent of its population living in nonmetropolitan counties. Twenty-nine states have nonmetropolitan populations that make up at least 25 percent of their total population.

Some states typically considered urban in nature actually have large numbers of rural residents. Figure 4-2, which ranks states according to the number of rural residents, illustrates this point clearly. For example, Texas has the most nonmetropolitan residents, 3.1 million, though it ranks 39th in proportion of residents in nonmetropolitan areas (15.1%). California ranks 24th in size of rural population but 48th in proportion of residents who are rural. By contrast, the most rural state by proportion of population, Montana, ranks only 35th in terms of count of rural residents. Twenty-six states have more than a million residents in rural areas. The fact that Figure 4-2 is based on a census-based definition should be noted. As discussed in Chapter 3, using a different classification could present a different picture of the number of rural residents in a state. For example, if a state has geographically large counties that are of both rural and urban character, using RUCAs instead of the OMB definition to define rural areas would result in huge increases in the population counted as rural (e.g., California, which gains hundreds of thousands of rural residents).

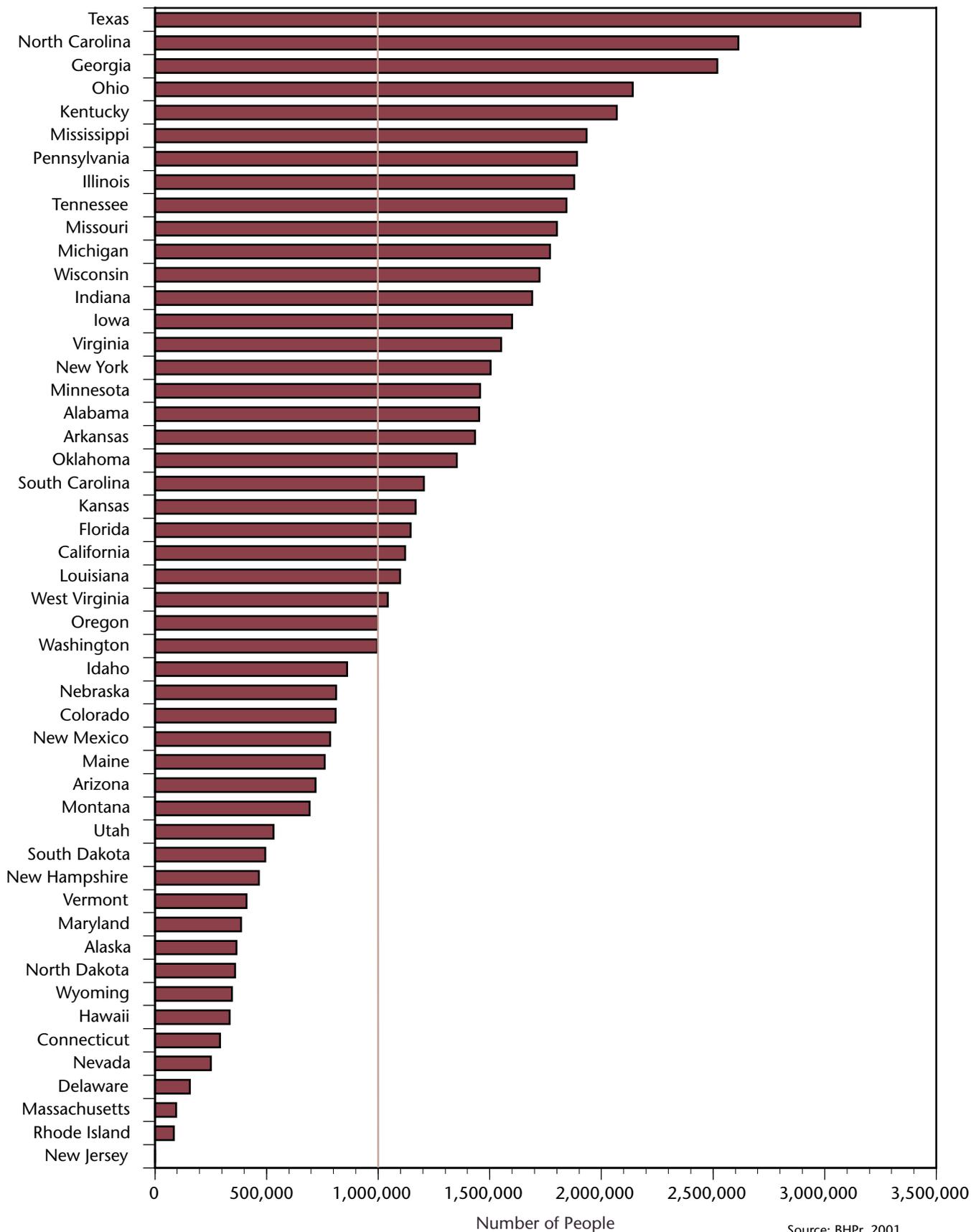
To address each state’s rural health care workforce needs, it is important first to understand the nature of rurality in the state. Providers, insurers, and governments in states with large proportions of rural residents, such as those in the mountain regions of the western United States, work in a very different health services context than do those in states such as California, with very large *numbers* of rural residents but a small *proportion* of them. The rest of this chapter is devoted to interstate comparisons of rural demography and rural health workforce resources that will help provide the national context for understanding the state-specific demographic and workforce data that are presented in Chapter 5.

Figure 4-1
Percentage of Population in
Rural Counties in 2000, by State



Source: BHP, 2001

Figure 4-2
Number of Residents in Rural Counties in 2000, by State



Source: BHP, 2001

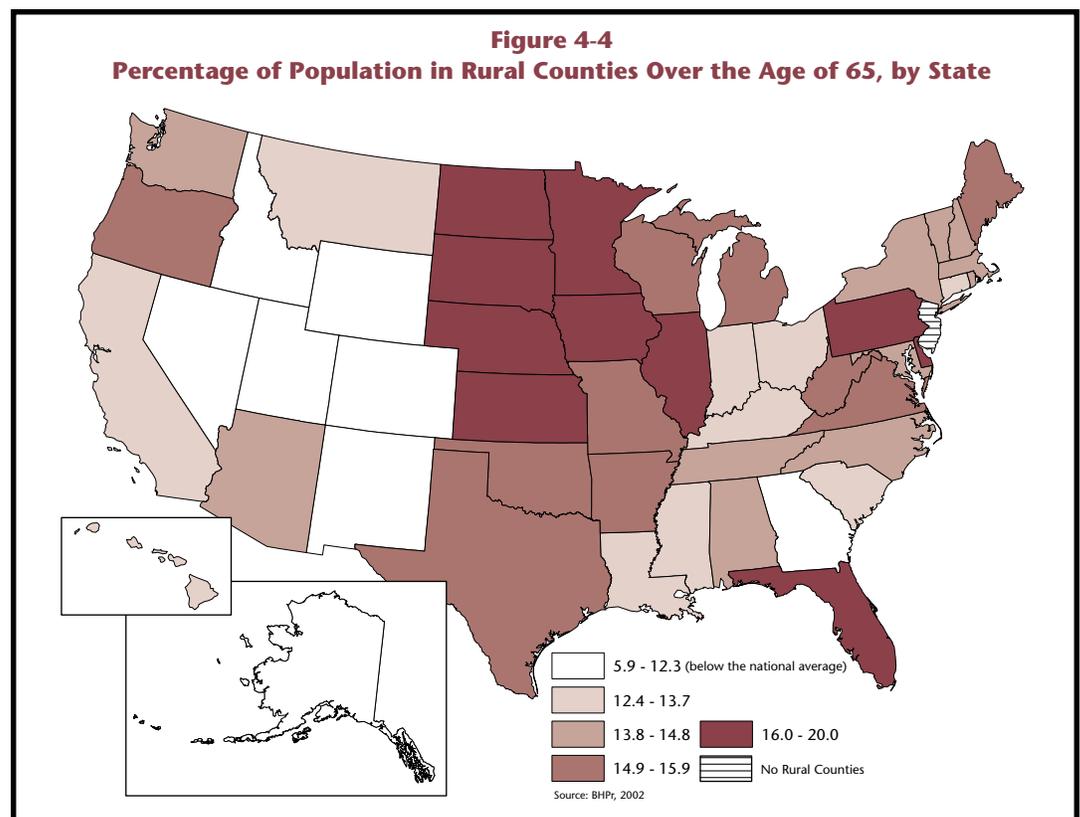
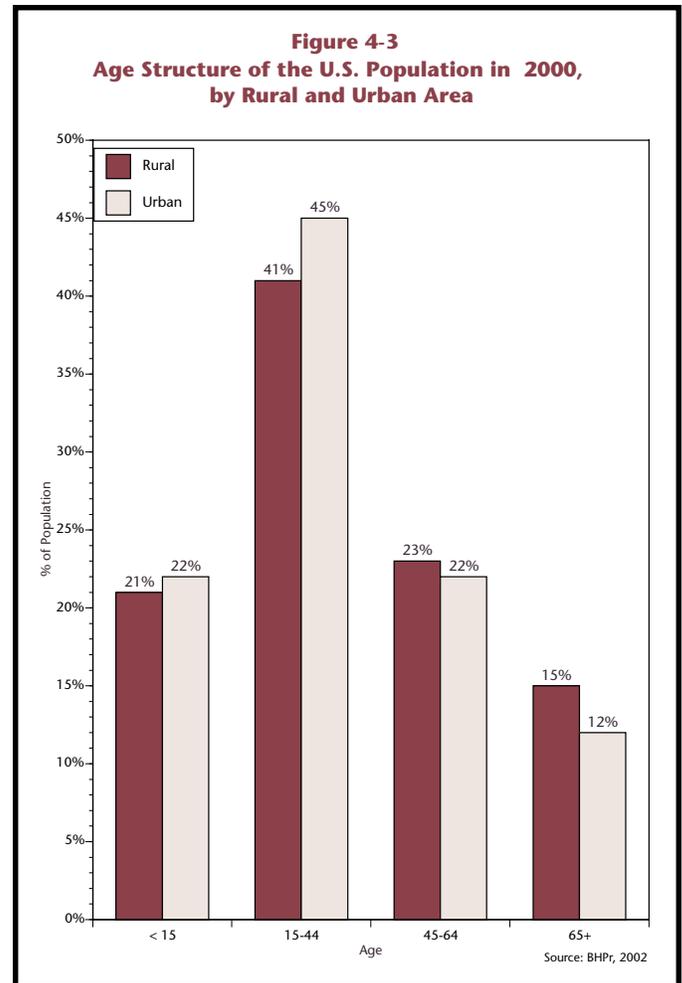
**AGE AND INCOME —
KEY RURAL DEMOGRAPHICS**

A complete interstate comparison of rural demographic trends is beyond the scope of this monograph. Randolph et al. (2002) recently published a thorough and useful review. Instead, we focus in this section on two key demographic issues that bear directly on the rural health workforce and access to care for rural residents: age and income. Rural health advocates often remind their audiences that rural residents are generally older, sicker, and poorer than urban residents. National data support this contention. As Figure 4-3 shows, 15 percent of rural residents are age 65 or older, compared to 12 percent in urban areas¹. Rural areas also have fewer residents in the healthiest and most economically productive age cohort—the 15 to 44 group. The implications of these demographic characteristics for rural health systems are myriad and include:

- A higher level of dependency on Medicare reimbursement for rural hospitals and providers.
- Greater than average prevalence of the chronic diseases associated with aging.
- A need for nursing home resources on a per capita basis beyond that usually seen in urban areas and a subsequent dependency on Medicaid dollars that pay for a significant amount of nursing home care in the United States.
- A high degree of unmet need for the local specialist care that an elderly population requires.
- Impaired access to health care of all sorts because of transportation problems associated with long distances to care and lack of public transportation, especially among the frail elderly.
- Limited options for end-of-life care such as hospice service.

The older age structure of the rural population is common across the 50 states. In the United States as a whole, 12.4 percent of the population is over the age of 65. As shown in Figure 4-4, only eight states have rural populations in which less than 12.5 percent of the population is 65 or older.

¹ Technical notes at the end of the volume describe how such summary statistics as these were derived.



Nationally, the rural population of the United States has a lower per capita income than the urban population. Additionally, rural families are more likely to live in poverty than are urban ones. Average per capita income in the United States in 2000 was \$29,296. In urban counties, the mean per capita income was \$31,175, while in rural counties, it was only \$21,780. Rural per capita income ranges from \$17,591 in New Mexico to more than \$30,000 in some New England states (see Figure 4-5). Only four states (Rhode Island, Connecticut, Massachusetts, and New Hampshire) have rural populations with incomes greater than the national average.

The proportion of rural families with household incomes below the federal poverty level also varies substantially across the states. In the United States as a whole, 9.2 percent of families live on incomes below the poverty threshold, which varies according to family size. Families living under the poverty level in urban and rural counties number 8.7 percent and 10.9 percent, respectively. Across the states, rates of rural poverty range from 19 percent in Louisiana to less than 6 percent in Wisconsin, New Hampshire, and Connecticut (see Figure 4-6).

As noted in Chapter 2, rural areas with older populations, lower incomes, and higher rates of poverty face substantial barriers in recruiting and retaining health professionals. Higher rates of dependency on Medicare and Medicaid payments, coupled with the higher rates of uninsurance and underinsurance in poor populations, make it difficult to sustain financially viable practices. Consequently, practices may offer low salaries, which hinder recruitment of new doctors who often face high medical school debt. Low rates of reimbursement cause many physicians to limit or exclude Medicare and Medicaid patients from their practices and impede their ability to pay sharply rising malpractice premiums. In the face of these financial challenges and their smaller bed capacity, rural hospitals may be unable to afford technological upgrades and other improvements necessary to provide services in an efficacious and economic manner. This financial and scope of service “death spiral” may lead to hospital closure, leaving rural residents without a local hospital and often without local physician services, as most physicians prefer to practice in settings that include access to a hospital for their patients. The federal Critical Access Hospital program, with its cost-based reimbursement for such small rural hospitals, has been one step in the right direction in an effort to prevent rural hospital closures.

RURAL PHYSICIAN SUPPLY—A BASIC MEASURE OF THE ADEQUACY OF RURAL HEALTH WORKFORCE

In 2000, 204 physicians were active in patient care per 100,000 population in the United States. The

distribution of physicians varied greatly between metropolitan counties (225 per 100,000 population) and nonmetropolitan counties (119 per 100,000 population). As noted in Chapter 3, much of this difference is explained by the fact that many medical specialty practices cannot sustain themselves in rural areas. To measure the adequacy of patient care in rural areas, it is therefore more indicative to compare the rural versus urban supply of generalist physicians only (family practitioners, general internists and general pediatricians). Nationally, metropolitan areas have about 78 generalist physicians per 100,000 residents, compared to 57 per 100,000 in nonmetropolitan areas. These supply numbers translate to generalist physician-to-population ratios of 1:1,282 in urban areas and 1:1,754 in rural areas. The percent of rural physicians who are generalists varies greatly, from 34 percent in New Hampshire to 62 percent in Minnesota (Figure 4-7). The percentages of physicians who are generalists are much lower for urban areas, as seen in the figure.

MALDISTRIBUTION—NOT SHORTAGE —IS THE REAL ISSUE

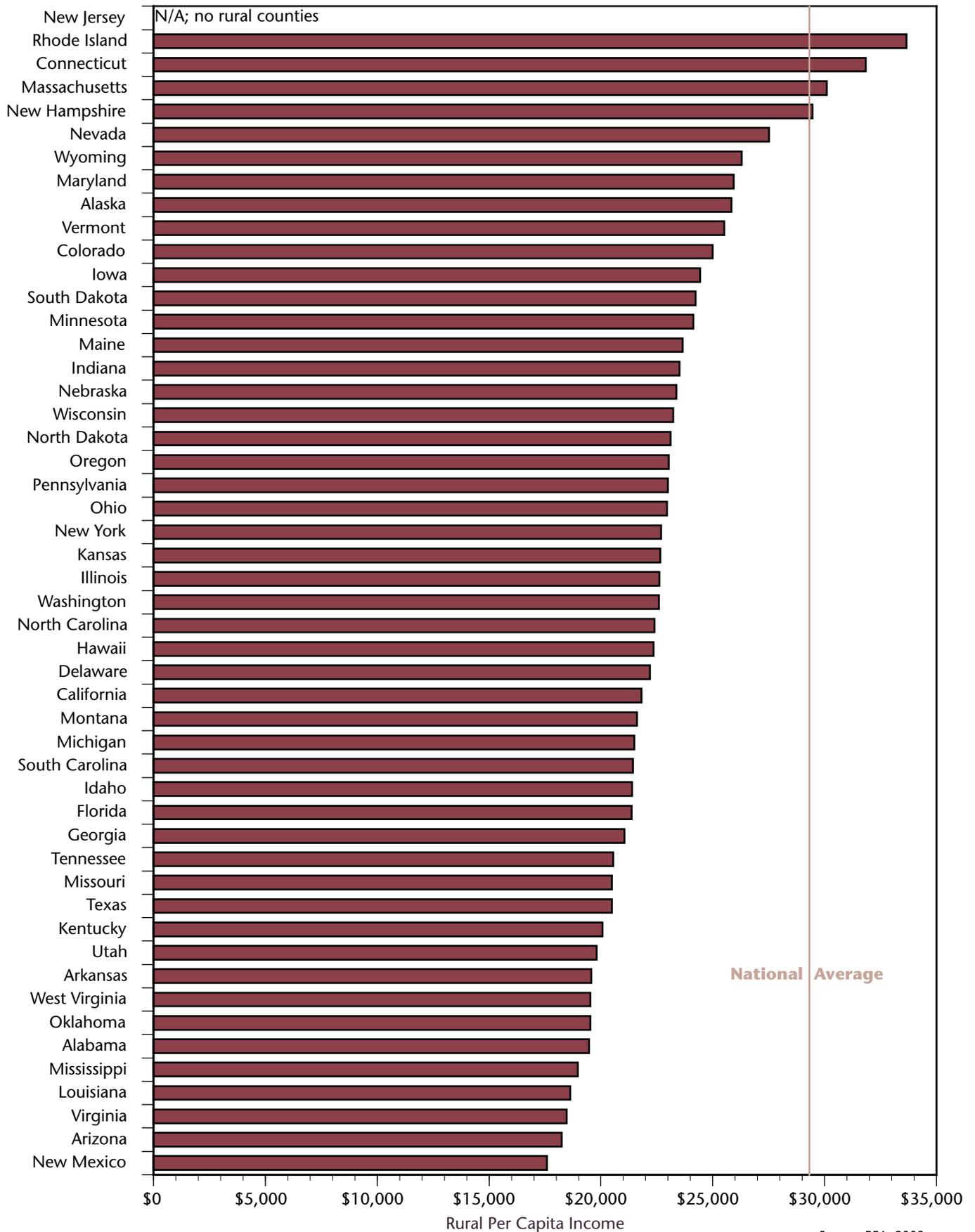
As noted in the previous chapter, while the overall supply of generalist physicians in the United States may be adequate, uneven distribution creates many smaller areas of real shortage. In an era when rural physician supply has grown, severe maldistribution of physicians in rural America causes more localized shortages, with the potential to undermine access to health care for many rural residents. While more populous rural areas, or those near urban centers, may have a sufficient supply of generalist physicians, this is often not the case in smaller and more remote rural locales. In 1997 for example, 802 entire nonmetropolitan counties were designated Primary Care HPSAs. Parts of 641 other nonmetropolitan counties were also designated as Primary Care HPSAs.

Interstate variation in rural/urban parity in the distribution of generalist physicians is shown in Figure 4-8. Several states, such as Nevada, New Hampshire, Montana, and Utah, have rural/urban ratios above or close to 1, meaning they have about the same number of generalists physicians per 100,000 population practicing in rural areas as in urban areas. In contrast, the rural/urban disparity in some other states is

Table 4-1: Rural/Urban Ratios Compared to Physician-to-Population Ratios

	Rural/urban generalist ratio	Generalist-population ratio	Generalist-population ratio (urban)	Generalist-population ratio (rural)
U.S.	.73	1:1,351	1:1,282	1:1,754
Illinois	.63	1:1,316	1:1,235	1:1,960
Louisiana	.63	1:1,666	1:1,515	1:2,380
New York	.63	1:1,111	1:1,075	1:1,694

Figure 4-5
Per Capita Income in Rural Counties, by State



Source: BEA, 2003

Figure 4-6
Percentage of of Families in Rural Counties
Under the Federal Poverty Level, by State

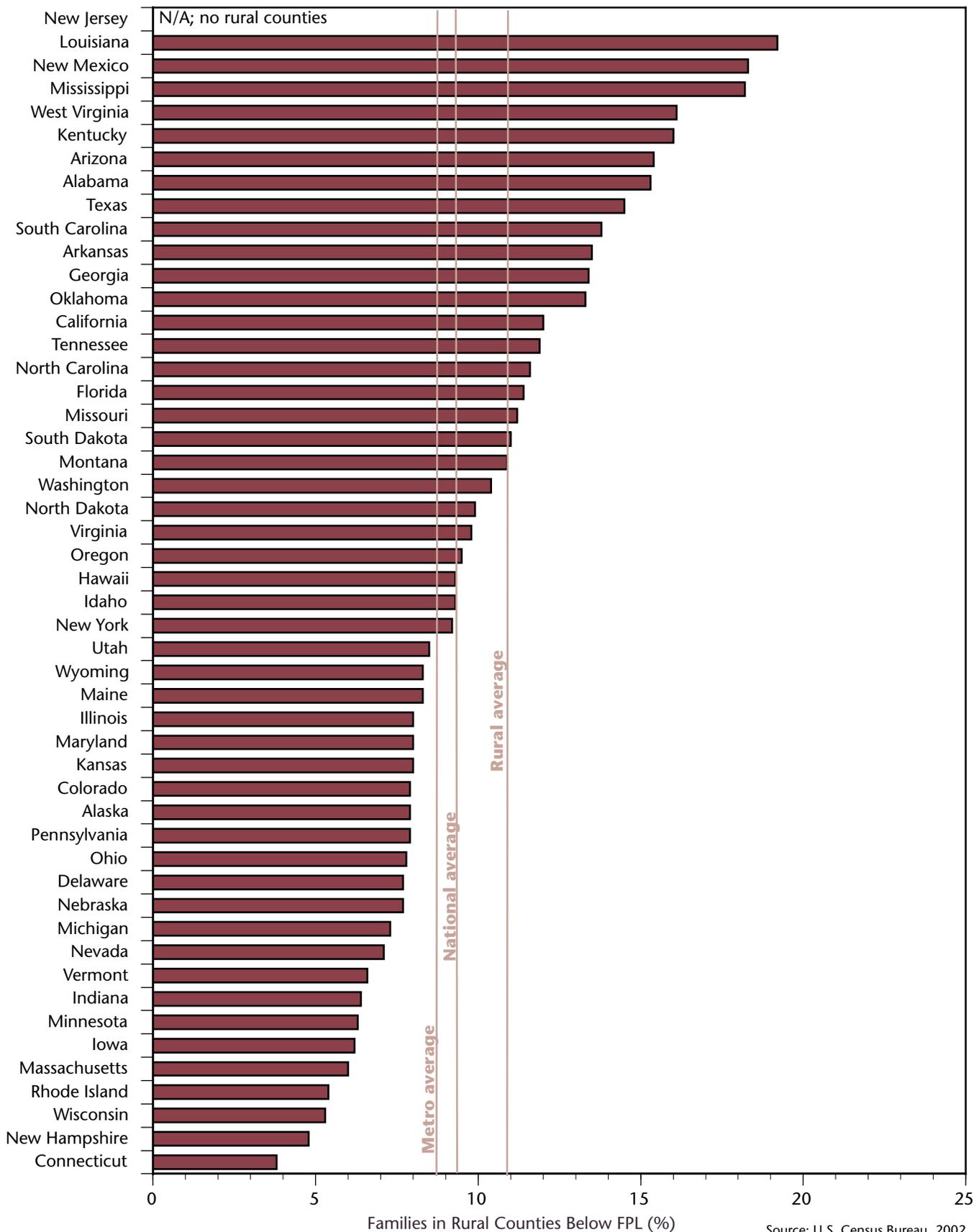
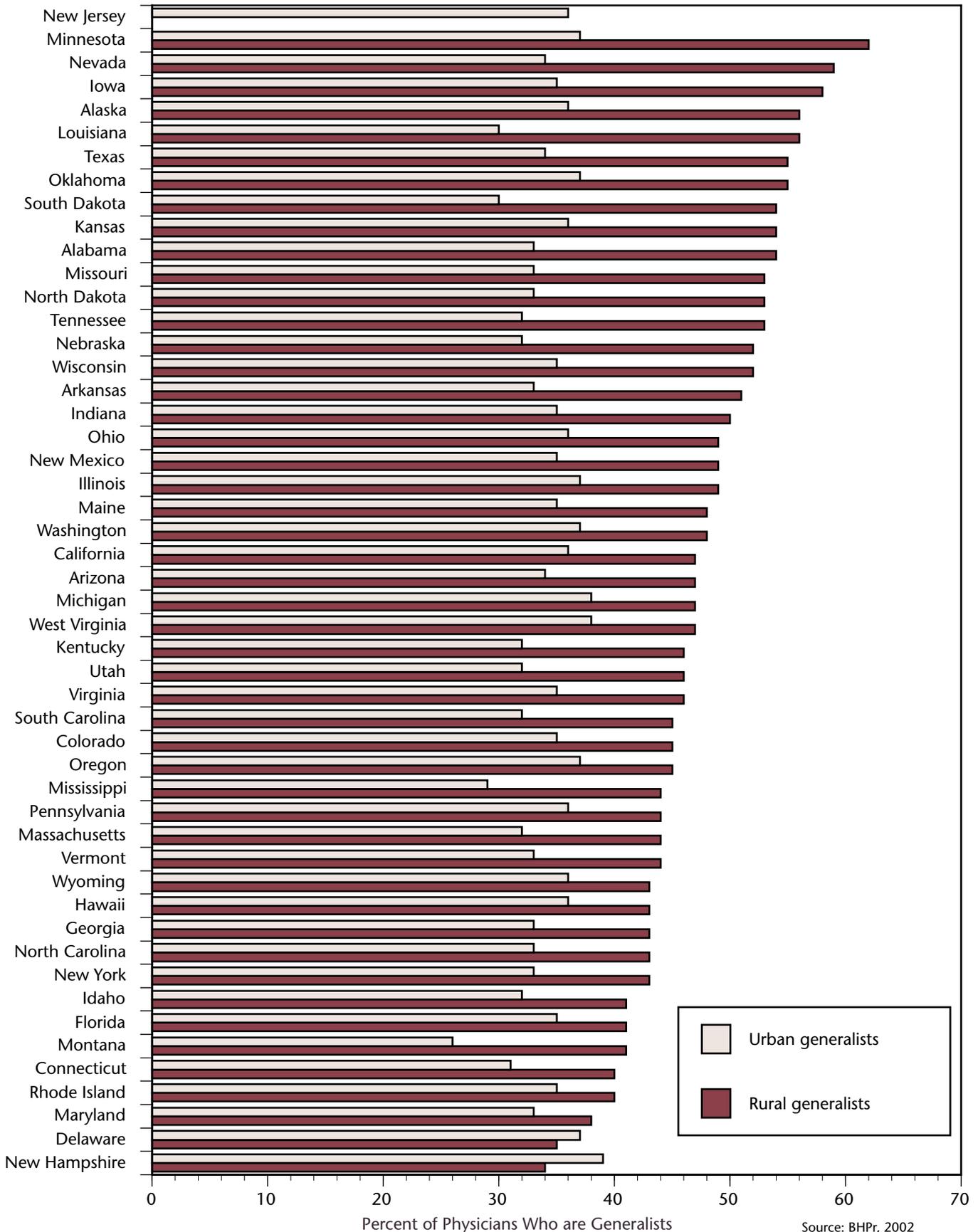


Figure 4-7
Percentage of Rural and Urban Physicians
Who are Generalists, by State



Source: BHP, 2002

quite pronounced. Louisiana, Illinois, and New York, for example, have only 0.63 generalist rural physicians for every generalist urban physician. The extent to which rural/urban maldistribution marks real shortages depends on the context provided by the overall generalist physician-to-population ratio in the state, as shown in Table 4-1.

When generalist physician-to-population ratios are compared, we find 1 generalist per 1,111 residents in New York (which has 90 generalist physicians per 100,000 population) and 1 generalist per 1,666 residents in Louisiana (which has 60 generalist physicians per 100,000 population). This substantial gap suggests wide differences in access. State generalist physician-to-population ratios are shown in Figure 4-9.

CHANGING DEMOGRAPHY OF THE RURAL PHYSICIAN WORKFORCE—FEMALE PHYSICIANS AND INTERNATIONAL MEDICAL GRADUATES

As noted in Chapter 2, two important demographic trends among physicians are an increasing percentage of women and increasing numbers of international medical graduates (IMGs). Overall, women remain underrepresented in the rural generalist workforce. While 30 percent of generalists are women, they make up only 22 percent of rural generalists. At the same time, substantial interstate variation exists in the proportion of women in the rural generalist workforce. The geographic distribution of female physicians

relative to their male counterparts varies significantly among states; generalist male to female ratios are higher than 10 to 1 in some states and lower than 3 to 1 in others (Doescher, Ellsberry, & Hart, 2000). Figure 4-10 shows that the proportion of women in the rural generalist workforce ranges from 36.8 percent in Alaska to 13.8 percent in Arkansas (see Figure 4-10). The impact of IMGs on rural medicine also varies enormously across the 50 states, as can be seen clearly in Figure 4-11. The figure shows that the ratios of IMGs per population vary dramatically, from low ratios in the Northwest to high ratios in many eastern states.

THE RURAL DENTAL WORKFORCE

The shortage of rural dentists is well documented and growing more severe (Caplan & Weintraub, 1993; DHHS, 2000; Wright et al., 2001). Of 2,304 nonmetropolitan counties in the United States, 247 were without a single practicing dentist in 1998. In metropolitan areas of the United States, there are about 43 dentists per 100,000 population, compared with 29 in rural areas. This translates to 1 dentist per 3,448 residents in rural areas. (A dentist-to-population ratio of greater than 1 per 5,000 residents [20 per 100,000] is considered a severe shortage by the federal government; 1 to 3,500 residents is considered well-served (Milgrom, 2001). But as with physicians, the national ratio belies severe shortages in some states and many counties. Figure 4-12 shows the rural counties in the United States with no dentists and those with fewer than 1 dentist per 5,000 residents. As shown in Figure 4-13, only a handful of states have ratios of rural-to-

urban dentists close to parity, and Figure 4-14 shows the wide rural variation in dentists per 100,000 population across states (ranging from above 50 to 16).

THE RURAL NURSING WORKFORCE

Nursing shortages now are being reported around the country and are expected to increase as the demand for medical care rises with the aging of the population and of the nursing workforce itself (Center for Health Workforce Studies, 2001; First Consulting Group for the American Hospital Association, 2002; Furino, Gott & Miller, 2000; North Carolina Center for Nursing,

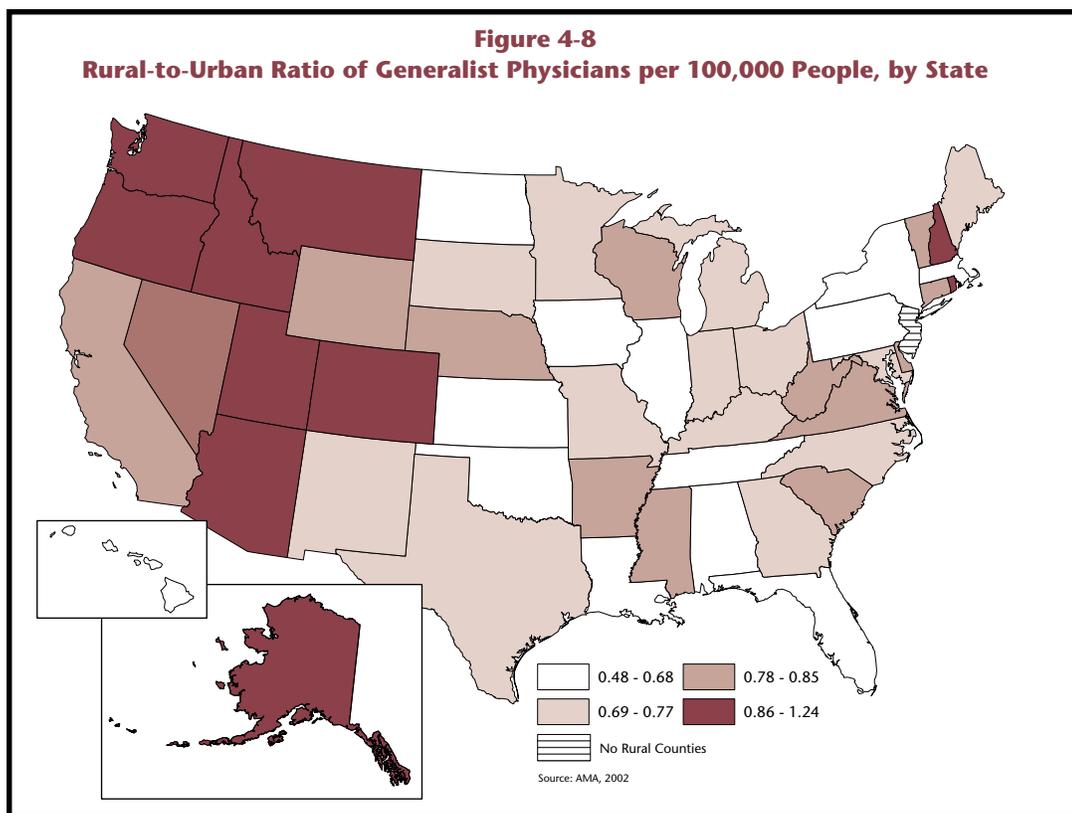
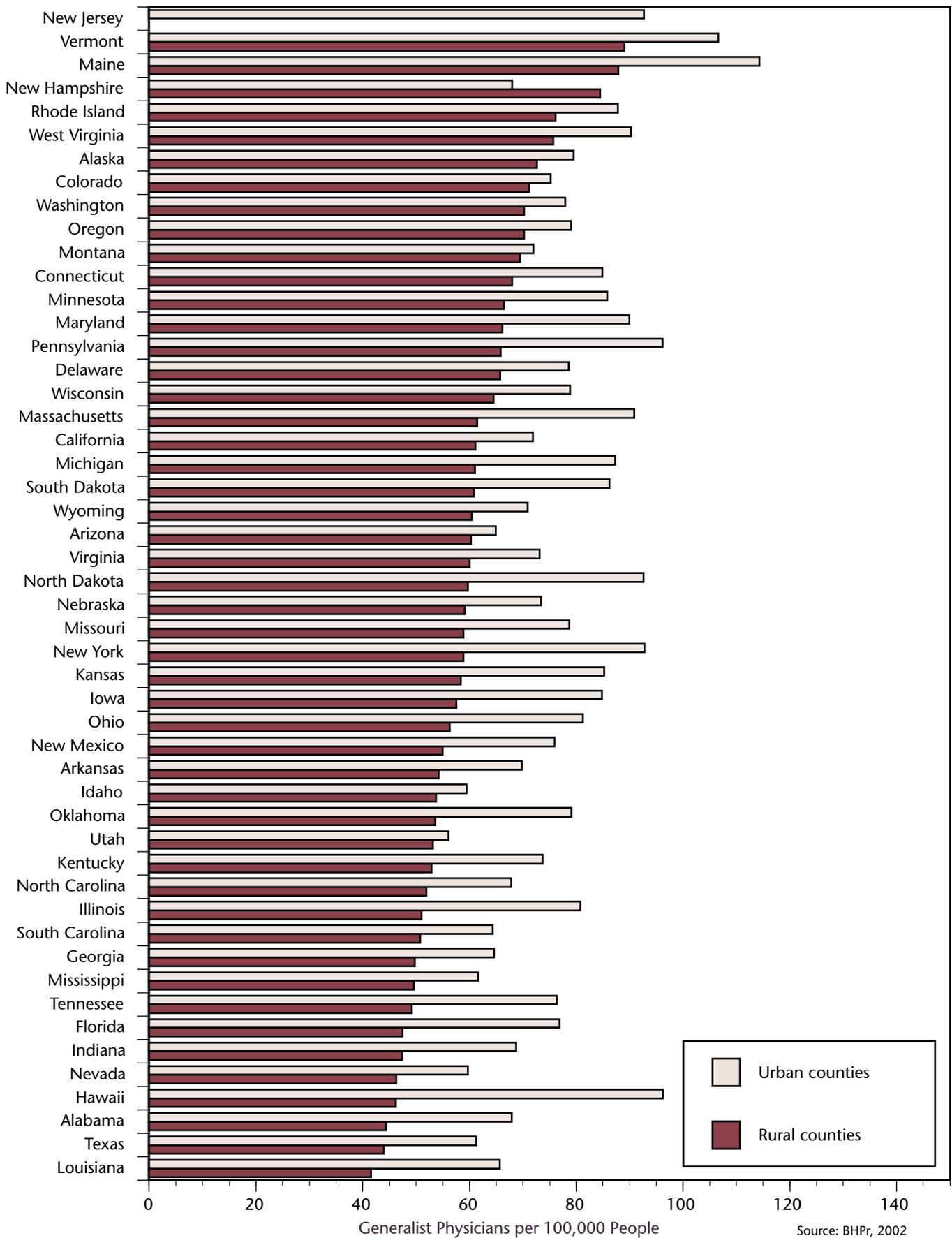
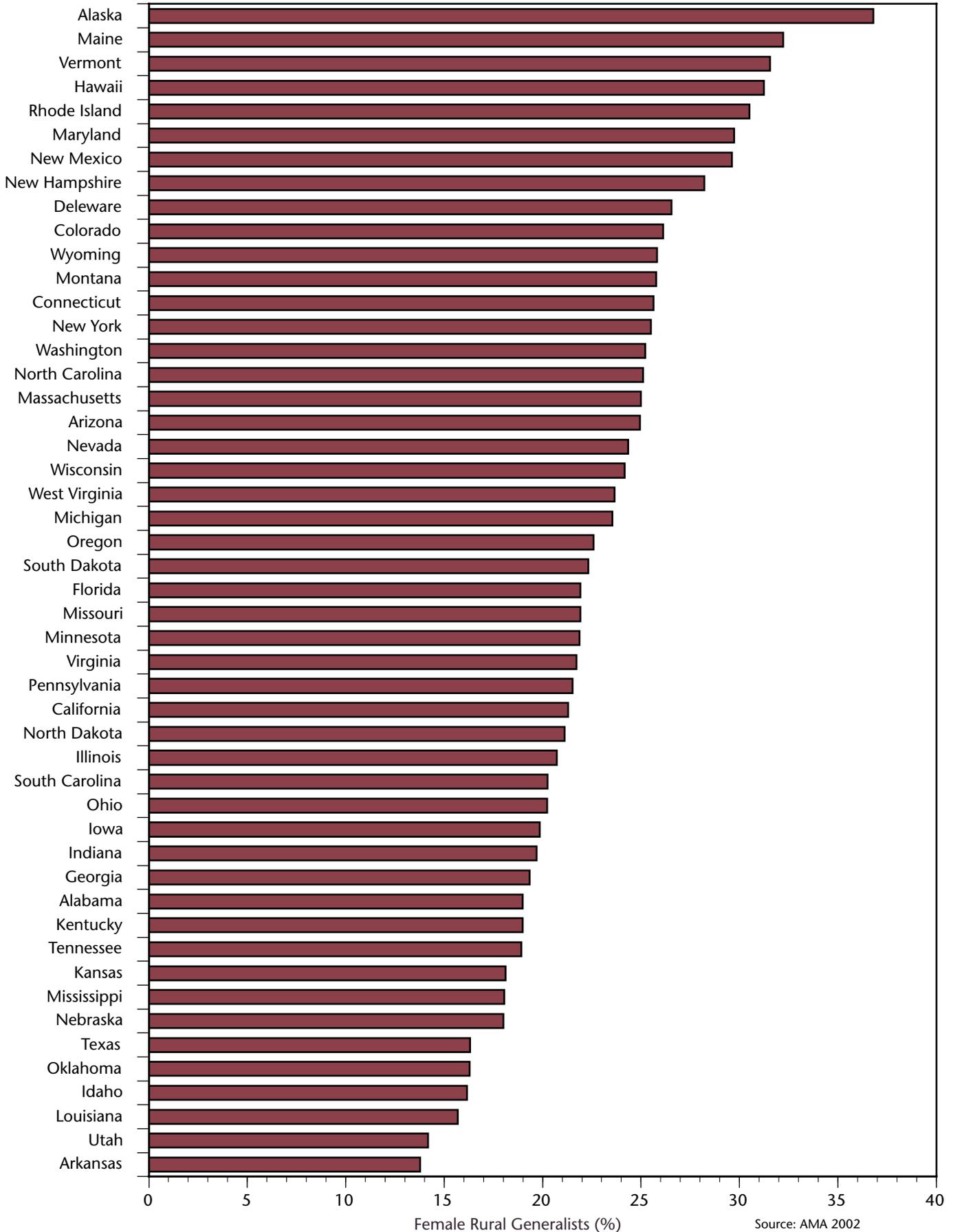


Figure 4-9
Generalist Physicians per 100,000 Population
in Urban and Rural Areas, by State



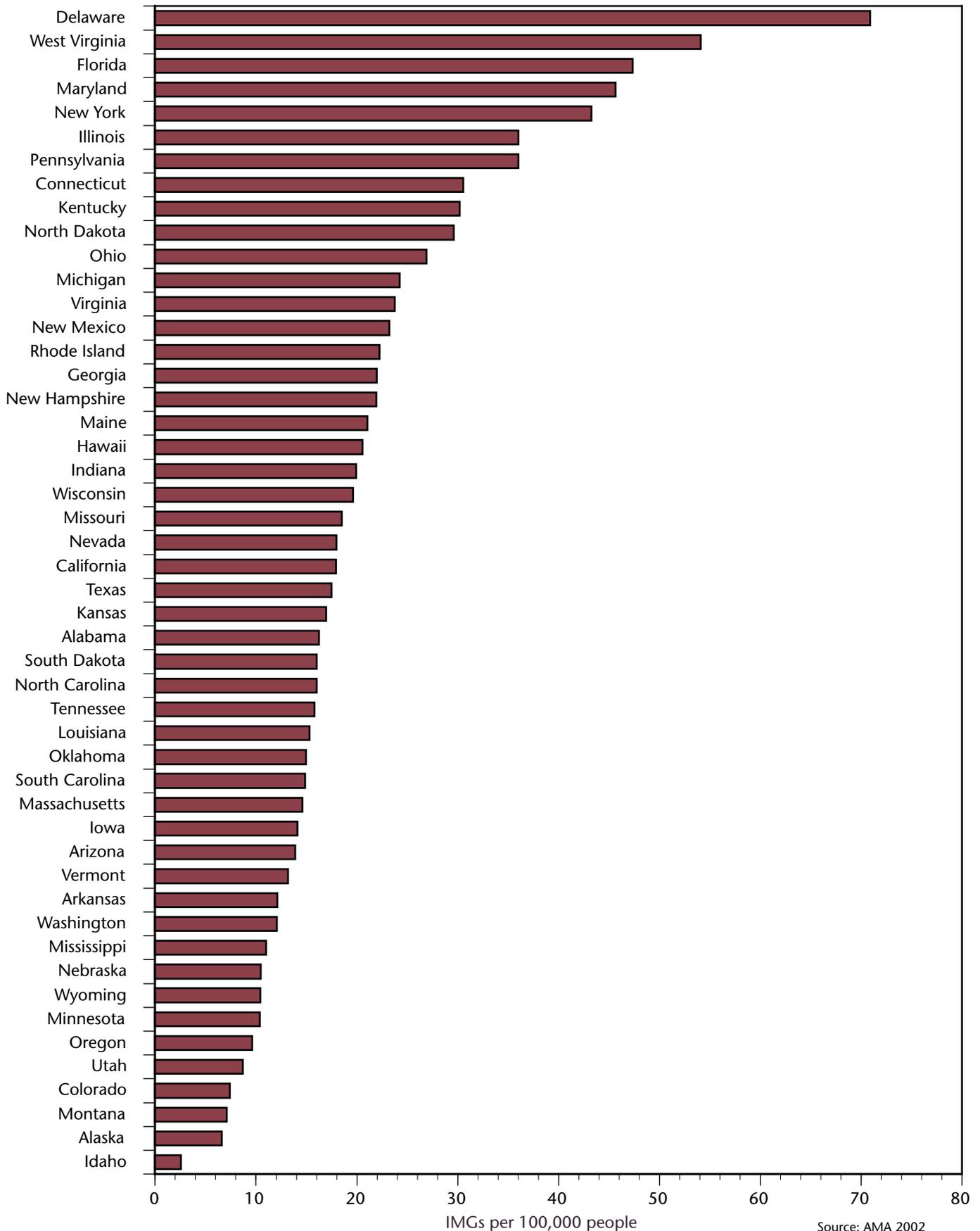
Source: BHP, 2002

Figure 4-10
Percentage of Rural Generalists Who are Female, by State



Source: AMA 2002

Figure 4-11
IMGs per 100,000 Population in Rural Counties, by State



Source: AMA 2002

2001; Sechrist, Lewis & Rutledge, 1999). A national shortage of nurses has not spared rural areas. Figures 4-15 and 4-16 show the number of rural and urban full-time and part-time registered nurses (RNs) per 100,000 population by state. The ranges are large, with the highest number of full-time RNs per 100,000 people in urban counties of South Dakota and the smallest number in rural counties of Rhode Island. The rural RN population differs from the urban RN population in several important ways. Data from the 2000 National Sample Survey of Registered Nurses indicate that rural nurses earn less than urban nurses and are more likely to work full time. Rural nurses are also less likely than urban nurses to work in hospitals. Urban nurses are more likely than rural nurses to hold baccalaureate and master's degrees (Skillman et al., 2003). Policy efforts to address the nursing shortage in rural settings needs to consider these differences in employment patterns.

MEDICAL EDUCATION

A critically important aspect of rural health workforce research and policy is the training of rural providers within rural locations. As indicated in Chapter 2, rural-based training is strongly associated with providers continuing to practice in rural areas, and it prepares them better to be effective clinicians in the rural milieu. Only 7.3 percent of family physician (FP) residency training took place in rural areas in 2000 (using the RUCA definition) (Hart, 2003). Figure 4-17 shows the FP full-time equivalent (FTE) training by state and distinguishes between training in rural and urban settings. A great variation exists between states, both in the total amount of training and the split between rural and urban training. The rural-based FTE training by state is illustrated in Figure 4-18. Pennsylvania, Michigan, Kentucky, West Virginia, Arkansas, and Illinois lead the nation in the training of rural physicians, while

Figure 4-12
Shortage of Dentists in Nonmetropolitan Counties
of the United States

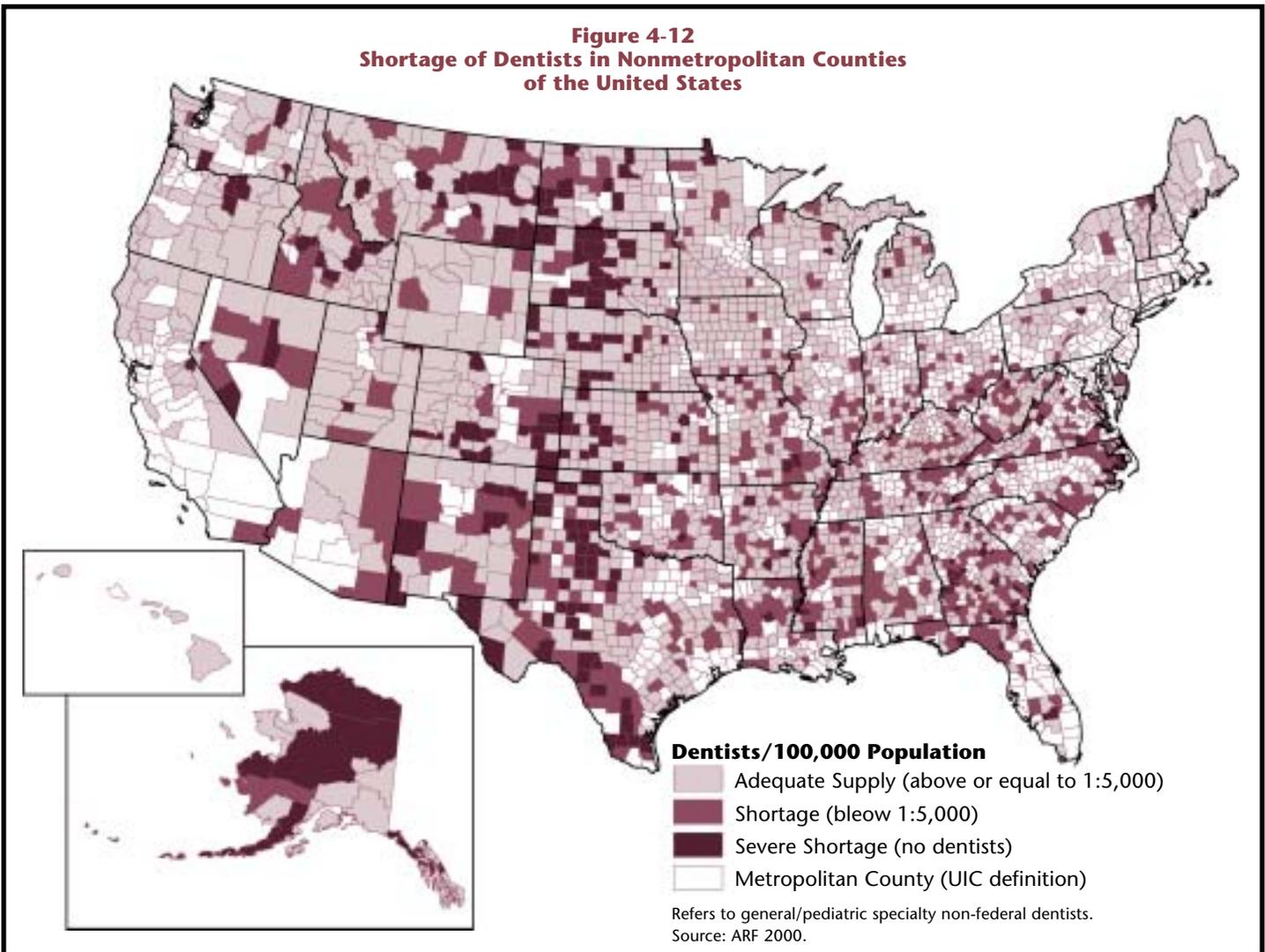
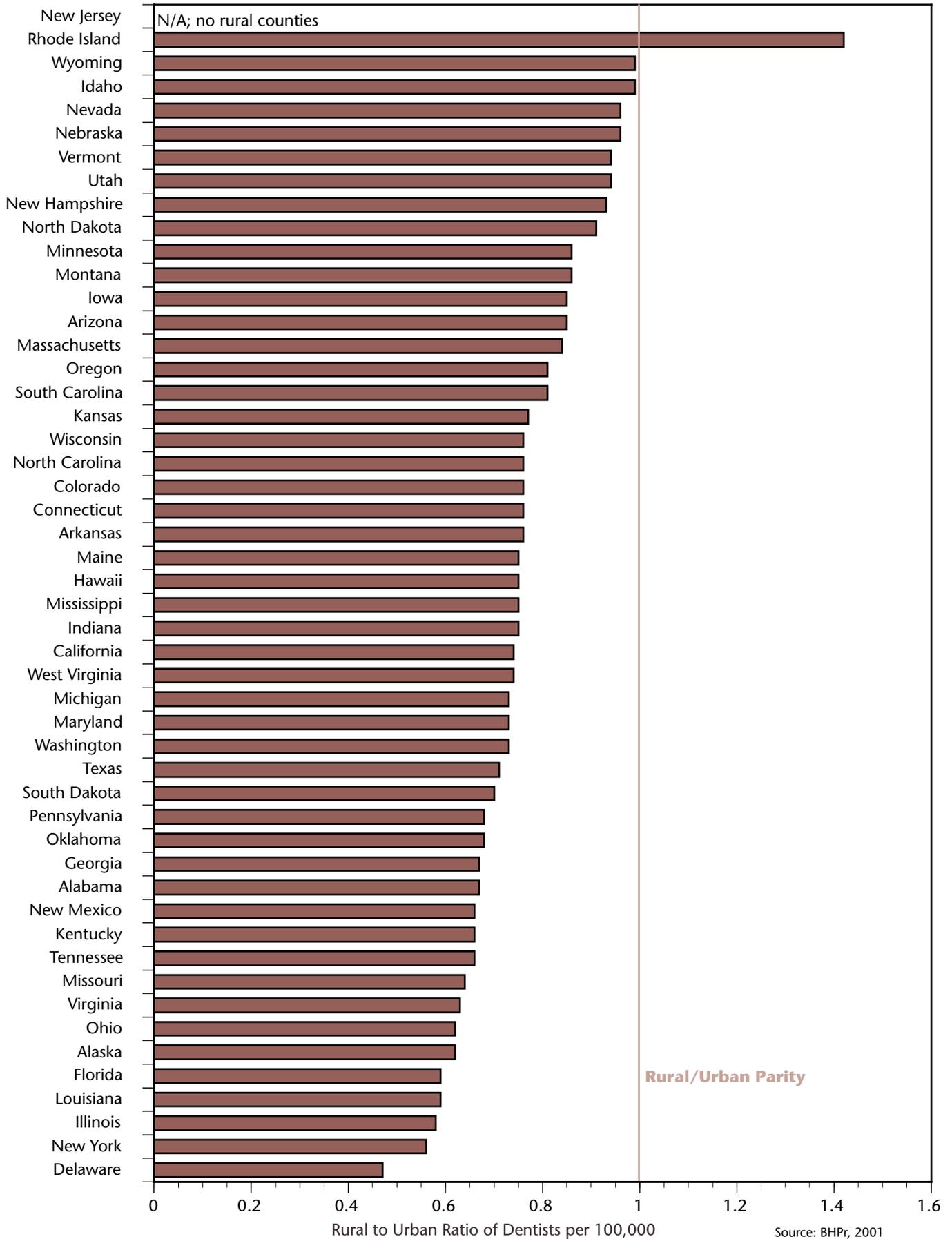
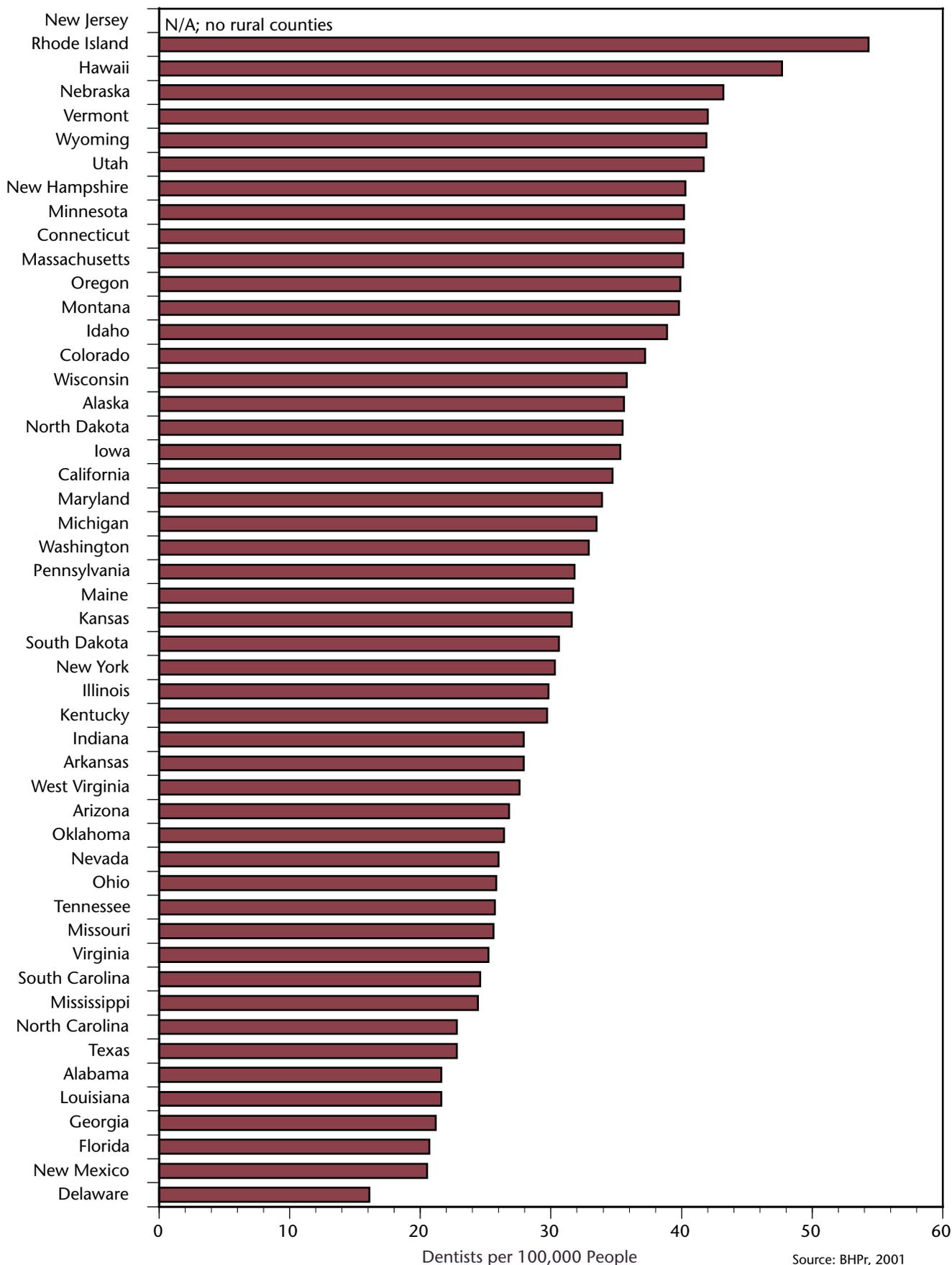


Figure 4-13
Rural-to-Urban Ratio of Dentists per 100,000, by State



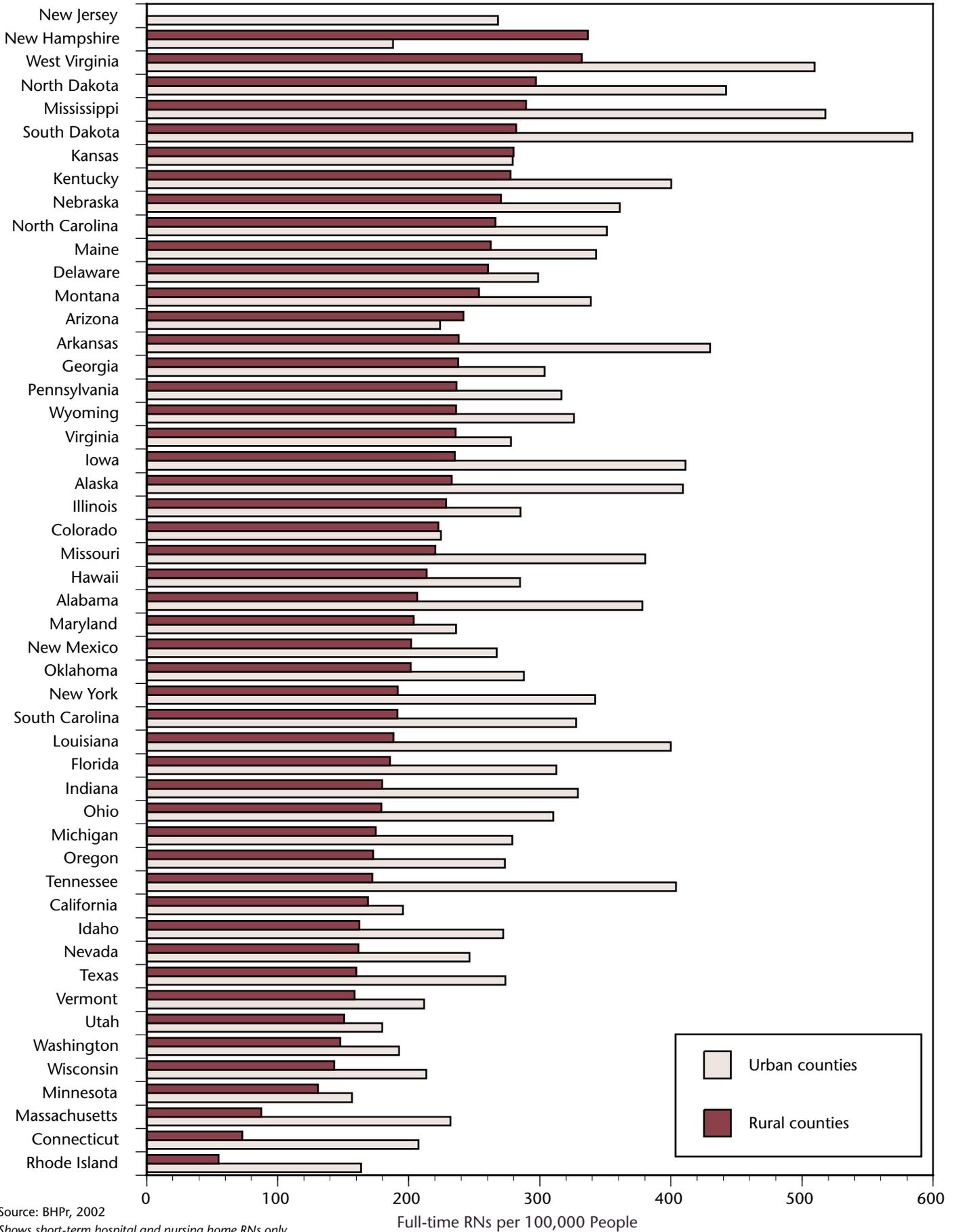
Source: BHPr, 2001

Figure 4-14
Dentists per 100,000 Population
in Rural Counties, by State



Source: BHP, 2001

Figure 4-15
Full-Time RNs per 100,000 Population in 2000
in U.S. Rural and Urban Counties

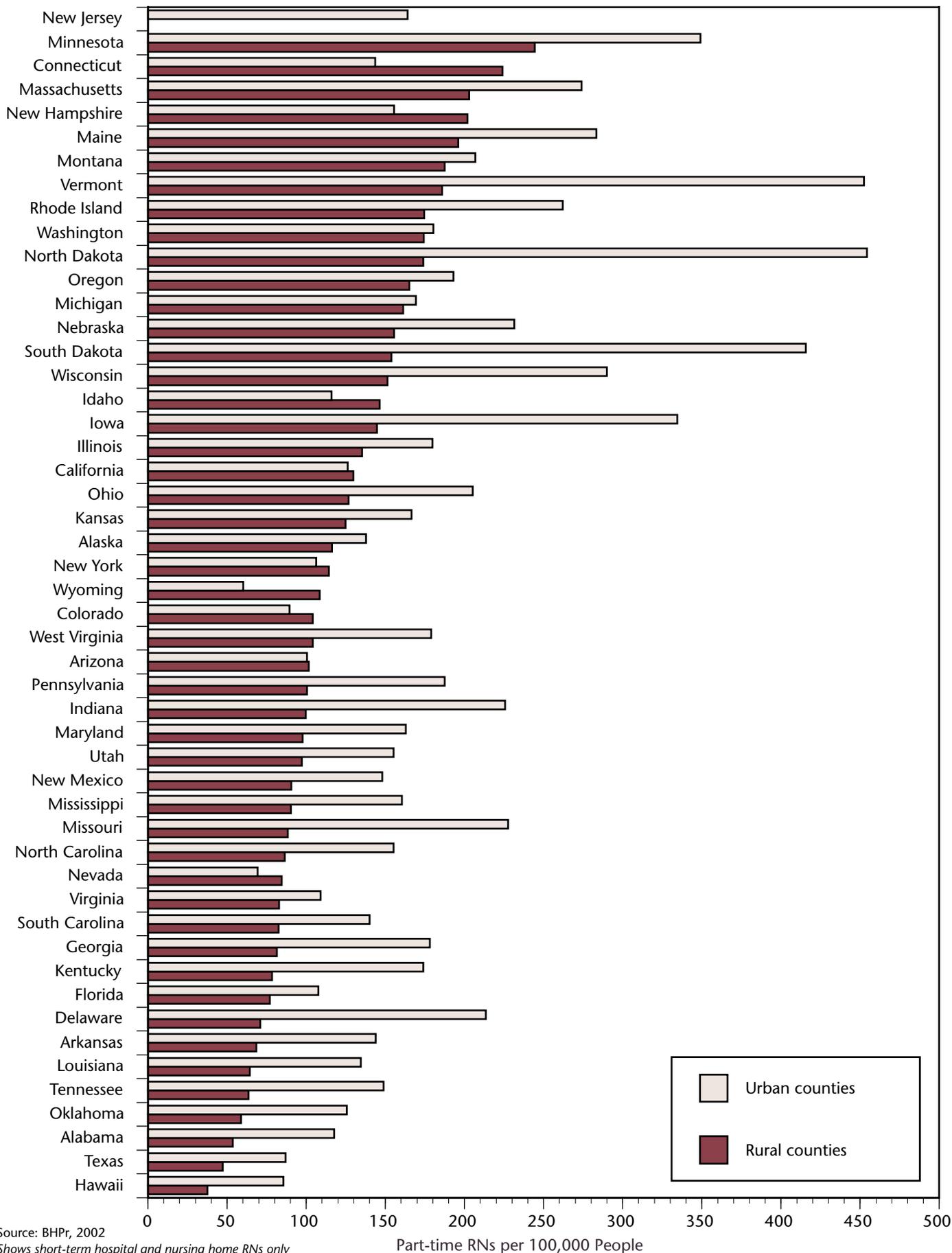


Source: BHP, 2002

Shows short-term hospital and nursing home RNs only

Full-time RNs per 100,000 People

Figure 4-16
Part-Time RNs per 100,000 Population in 2000
in U.S. Rural and Urban Counties



Source: BHP, 2002

Shows short-term hospital and nursing home RNs only

Part-time RNs per 100,000 People

Figure 4-17
FP Residency FTE Training by State

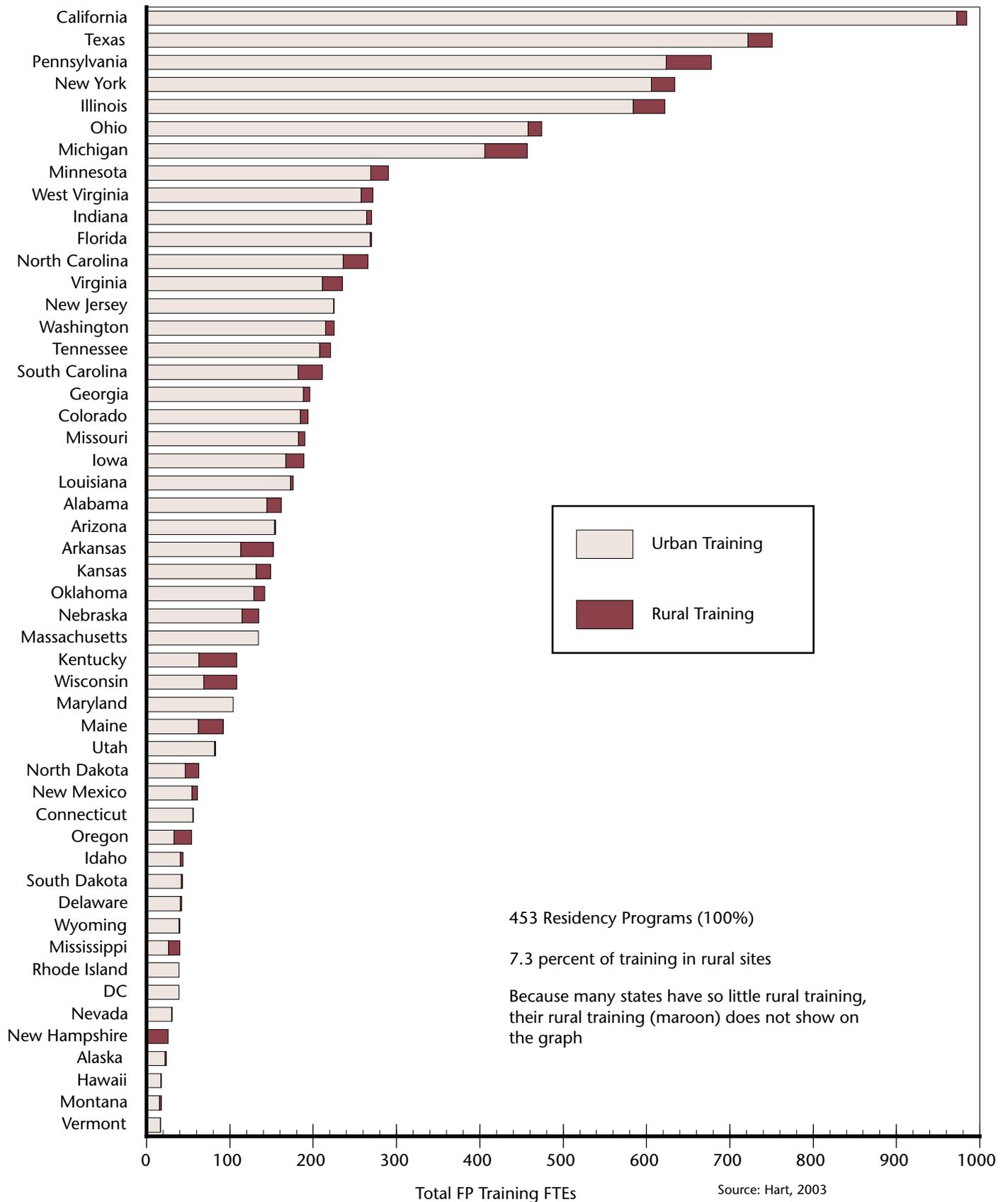
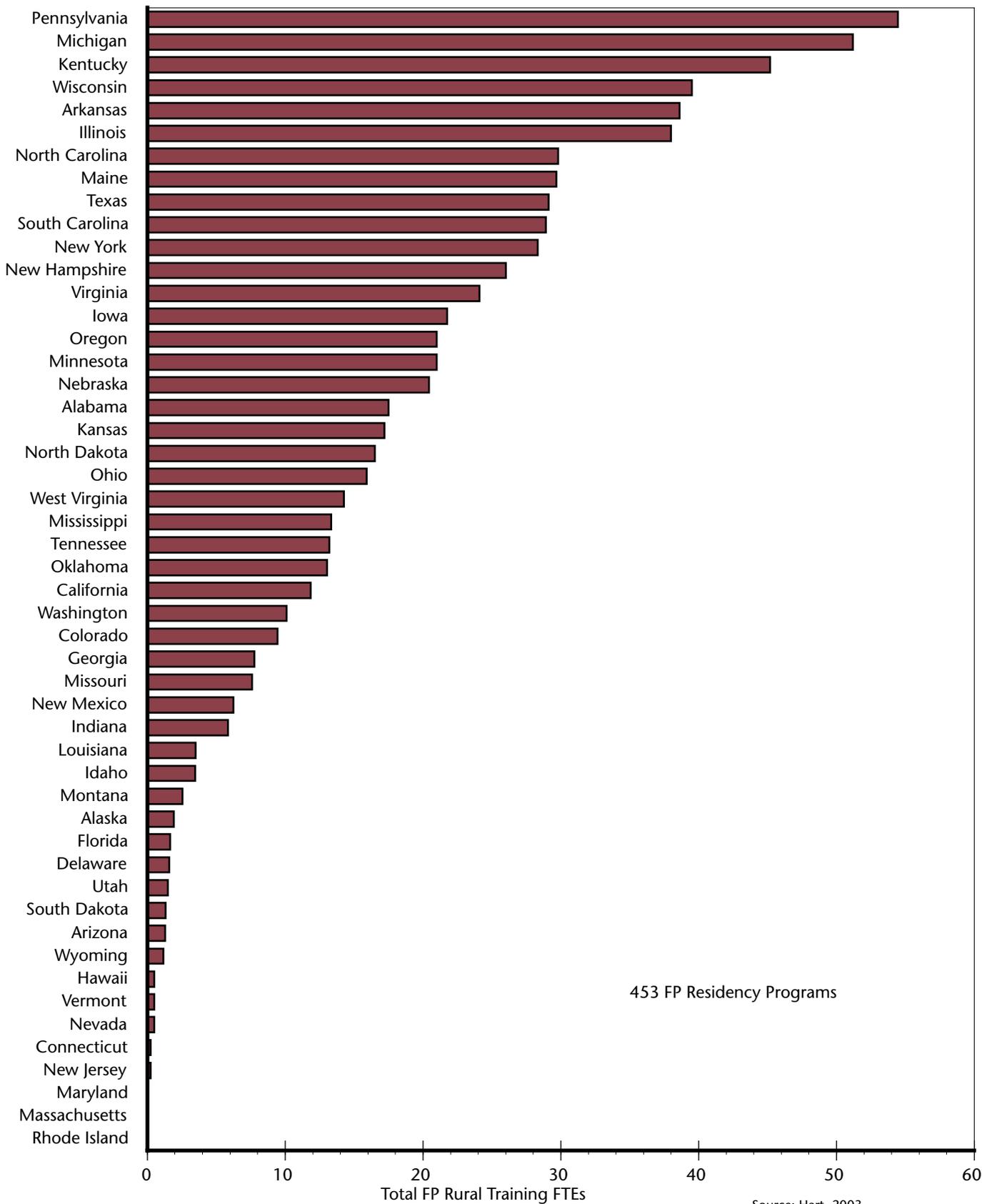


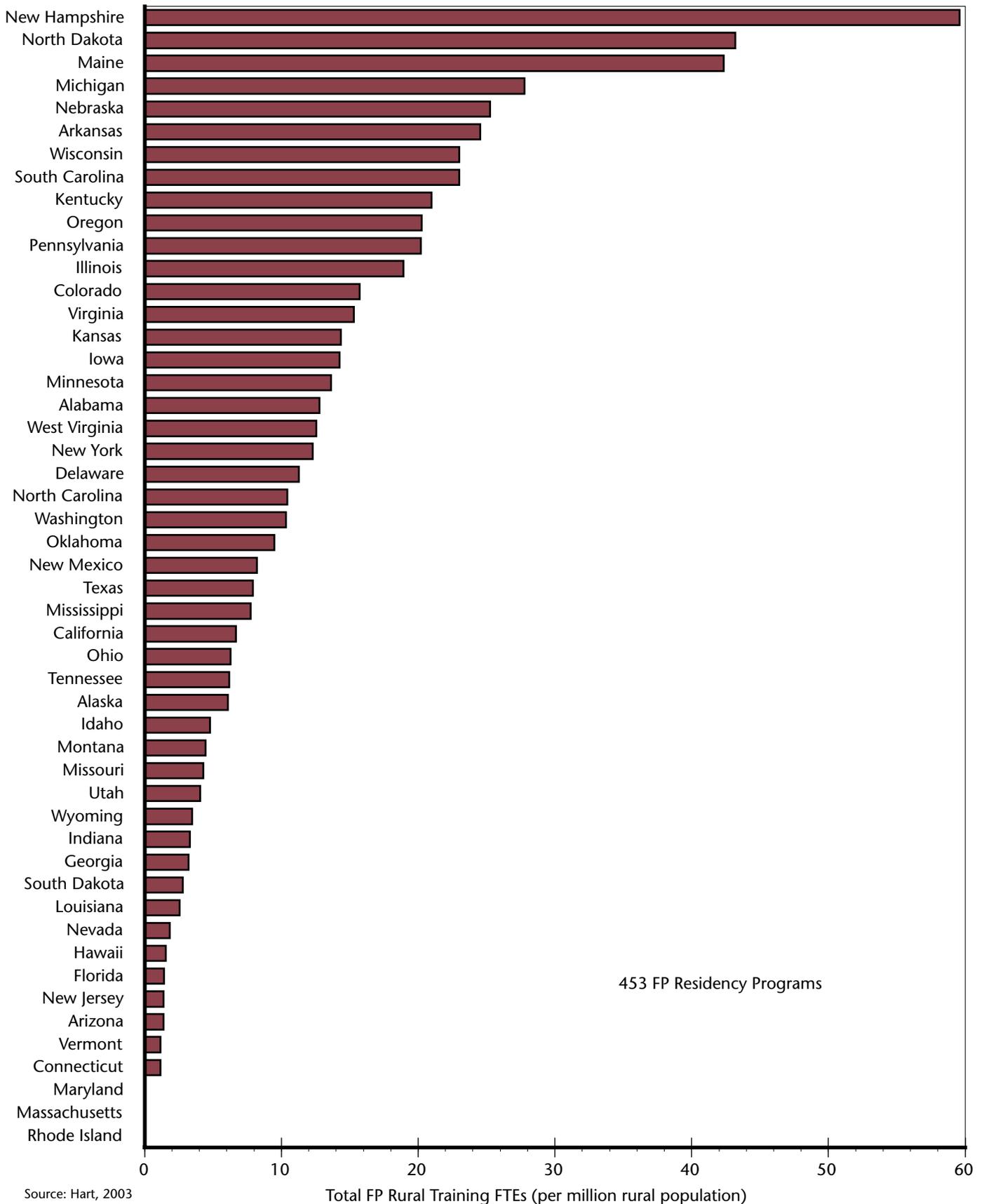
Figure 4-18
FP Residency FTE Rural Training, by State



453 FP Residency Programs

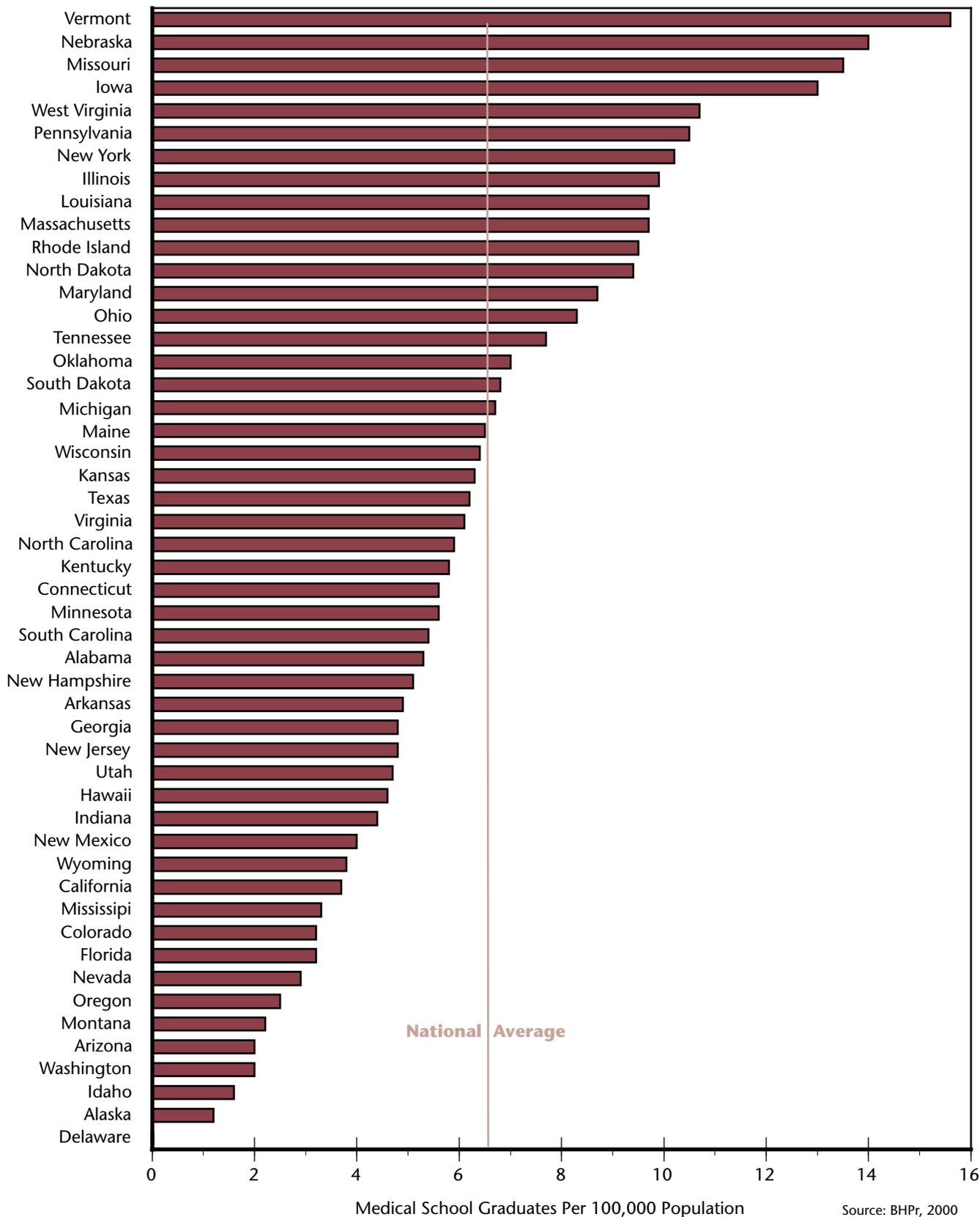
Source: Hart, 2003
 RUCAs used to rural areas

Figure 4-19
FP Residency FTE Rural Training
per Rural Population, by State



Source: Hart, 2003
 RUCAs used to define rural areas

Figure 4-20
1997 Medical School Graduates per 100,000 Population
 (Allopathic & Osteopathic, Public & Private)



there are many states that do almost no rural training, perhaps because of very small rural populations. To adjust for the size of the rural population, the FP residency training was calculated per one million population by state (Figure 4-19). As depicted, the data reveal substantial variation in rural training by state, from a high of 59.6 to a low of 0. The states that are highest in per capita rural FP residency training are New Hampshire, North Dakota, and Maine.

Figure 4-20 is similar to 4-19 except that it shows total medical student training per capita. Again, there is great variation across the states, from a high of 15.6 per 100,000 population to a low of 0. The states with the highest total medical student training per capita are Vermont, Nebraska, Missouri, and Iowa, while the states with the lowest are Delaware, Alaska, Idaho, Washington, Arizona, Montana, and Oregon. Some states clearly invest more money than do other states in medical training in general, and in rural training in particular.

SUMMARY

In this chapter, we have identified some of the important demographic and economic dimensions that create the context for understanding rural health workforce issues in the United States and the wide variation between states and regions. In general, the rural population is older, sicker, and poorer than the urban population. At the same time, the per capita supply of physicians, dentists, and other health professionals is significantly lower in rural areas than in urban areas. This is especially the case with specialist physicians, despite the fact that older populations often require more specialist services. The problems of an inadequate and geographically maldistributed rural health workforce are not restricted to a few states, although the severity of these problems varies significantly across the states. The amount of rural medical training that is provided locally also varies widely across the states, which often exacerbates provider shortage

problems. In addition, the underlying demographic and economic variations in rural populations across the states create very different policy milieus in which those problems can be addressed. While it is possible to generalize about rural demography and rural health workforce issues to some extent, policy solutions, especially at the state level, often require a considerably more detailed picture of state level demography and health workforce supply. In the following chapter, comprehensive health workforce profiles of each state contrast both rural/urban and intrarural variations in health workforce supply.



State Rural Health Snapshots: Profiles and Comparisons

KARIN E. JOHNSON, PH.D. • ERIC H. LARSON, PH.D.

In this chapter, we provide a detailed overview of the health workforce in each state, with an emphasis on rural counties. These data, presented in the form of two-page state profiles, offer a unique opportunity to make quick comparisons of the numbers of health care professionals in rural and urban areas of each state and to assess trends over the past decade. One of the key features of the state profiles is the way they divide county-level data into four different types of rurality. As we note in Chapter 3, examining differences *between* rural areas is essential to understanding rural health care delivery. Large variation in community size and isolation often create significant differences in the nature and severity of rural health workforce problems, even within individual states.

USING THIS CHAPTER

The two-page state profiles contain summaries of key statistics relevant to the health workforce for each state and for the nation as a whole. The first page of each state profile gives a rural-urban comparison of health workforce and selected demographic data. It shows the amount that the indicators have changed since 1990 and how each state compares to others. The second page of each state profile focuses on intra-rural trends and comparisons, presenting data on numbers of health care providers, rural demography, and available health services. Notes on data sources and definitions can be found on page 155.

STATE PROFILE CATEGORIES

GEOGRAPHIC DISTINCTIONS

The rural classification used in the state profiles is a modified version of the county-based Urban Influence Codes (UICs). The UICs were chosen because they highlight two dimensions of rurality that are particularly relevant to the delivery of rural health services—*isolation from metropolitan areas and the size of the largest city within a rural county* (see Chapter 3). The UICs classify all U.S. counties into nine categories. In the workforce profiles the nine categories have been collapsed into five categories as follows.

URBAN COUNTIES

- All metropolitan counties, as defined by the Office of Management and Budget based on 1990 census data. (UIC categories 1 and 2).

RURAL COUNTIES

- Non-metropolitan counties bordering metropolitan counties that contain a city with greater than 10,000 population. (UIC categories 3 and 5)
- Non-metropolitan counties bordering metropolitan counties that do not contain city greater than 10,000 population. (UIC category 7)
- Non-metropolitan counties that do not border metropolitan counties that contain a city with greater than 10,000 population. (UIC categories 4 and 6)
- Non-metropolitan counties that do not border metropolitan counties and do not contain a city with greater than 10,000 population. (UIC categories 8 and 9).

As we noted in Chapter 3, county-based definitions are commonly used in health services research because reliable data are available at this scale; however, they entail some geographic generalization. The rural typology used here also represents a compromise between specificity and generalizability. Collapsing the nine UIC categories into five involves some potential loss of detail, but allows us to highlight important intra-rural differences in workforce and health care resources and context.

DEMOGRAPHIC AND OTHER CONTEXTUAL INFORMATION

To provide context to the health professionals data, the demographic data included in these state profiles focus on key differences between urban and rural areas (differences that also manifest themselves between more rural and less rural areas) as discussed in Chapter 2. Specific variables included are:

- Total population
- Percent of population 65 years and older
- Percent of population 15 years and younger
- Per capita income
- Percent of families with incomes below the federal poverty level
- Percent of population living in “persistent poverty” counties (provided for rural counties only).



To give some context to the health system in rural areas, where access to care is often lower than in urban areas, the state profiles include:

- Number of short-term general hospitals
- Number of short-term general hospital beds per 100,000 persons.

HEALTH CARE PROVIDERS

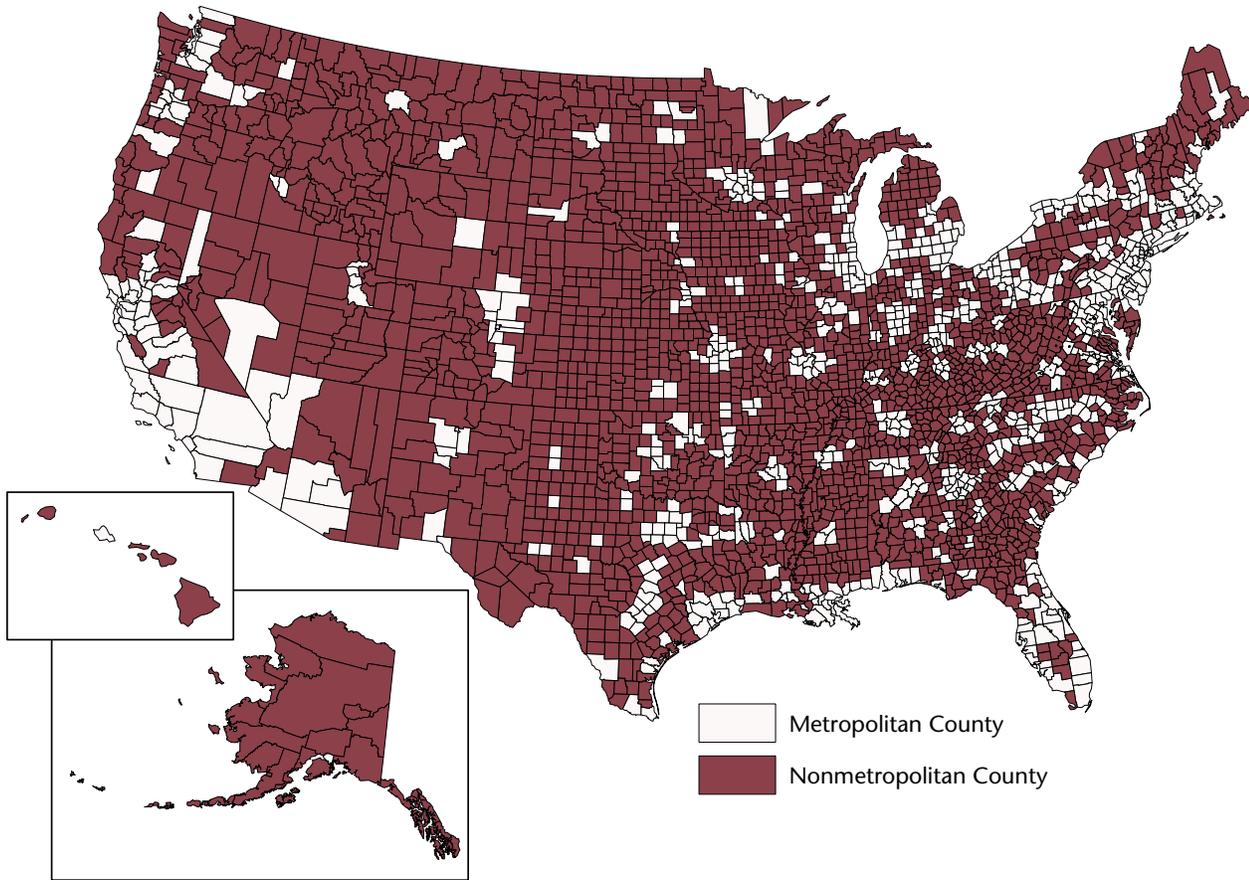
The categories of health professionals included in the state profiles represent a cross-section of providers. The selection of provider types was constrained by the limited availability of national county-level data for the period 1990-2000. Therefore, some of the provider types mentioned elsewhere in this monograph, such as nurse practitioners (NPs), are not included in the tables.

Table 5-1 defines the provider types included in the state profiles.

Table 5-1: Provider Types Included in State Profiles

Provider type	Definition	Relevance
All physicians	Patient care allopathic (M.D.) and osteopathic (D.O.) physicians. Excludes federal physicians and inactive providers. The D.O. data include residents, but the M.D. data do not.	Physicians are distributed unevenly around the country. The American Medical Association maintains detailed data about them, so we can see how characteristics such as specialty influence where they practice.
Generalist physicians	General practitioners, family practitioners, internal medicine specialists, pediatricians, and osteopathic manipulative medicine specialists	Generalist or primary care physicians are more evenly distributed relative to the population around the county.
Medical specialist physicians	Physicians whose primary specialty is one of the following: allergy and immunology, cardiovascular disease, dermatology, gastroenterology, hospitalist, internal medicine subspecialties (except internal medicine/family practice and internal medicine/pediatrics), pediatric subspecialties, and pulmonary disease	Specialists are much more likely to be located in urban areas and larger rural cities/towns than in smaller or remote rural areas.
Surgical specialist physicians	Physicians whose primary specialty is one of the following: colon/rectal surgery, general surgery, neurological surgery, obstetrics-gynecology, obstetrics-gynecology subspecialties, ophthalmology, orthopedic surgery, otolaryngology, plastic surgery, thoracic surgery, and urology	Surgical specialists are generally even more centralized in urban areas than generalists and medical specialists.
General surgeons	Physicians whose primary specialty is general surgery	General surgeons are critical to the rural health care system.
Obstetrician-gynecologists (non subspecialty)	Physicians whose primary specialty is obstetrics/gynecology	Obstetrician-gynecologists provide surgical and primary care services to women.
Other surgeons	Surgical specialists excluding obstetrician-gynecologists and general surgeons.	The remaining surgeons are included for completeness. Some of these specialties are often located in larger rural cities and towns.
Other specialist physicians	Physicians whose primary specialty is one of the following: aerospace medicine, anesthesiology, child psychiatry, diagnostic, emergency medicine, forensic pathology, general preventive medicine and public health, medical genetics, neurology, nuclear medicine, occupational medicine, psychiatry, pathology—atomic/clinical, physical medicine/rehabilitation, radiology, Radiation oncology, other specialties, and unspecified.	This is a mixed category whose specialties range from being more to less centralized in cities and is included for the sake of completeness.
Dentists	Active general and pediatric dentists engaged in private practice	Poor oral health and shortages of rural dentists are major health status concerns.
Physician assistants (PAs)	Physician assistants are trained to work in consort with a supervising physician.	PAs, like other non-physician providers, provide a substantial amount of care in medically underserved areas.
Registered nurses (RNs)	Separate categories include full-time and part-time RNs.	Like PAs and other non-physicians providers, RNs provide a substantial amount of care in medically underserved areas.

UNITED STATES



2000 Demography

	Metro	Rural	Total	% Change from 1990
Total population	224,690,521	56,157,433	280,847,954	13.2
% population > 65	11.9	14.6	12.4	-1.0
% population < 15	21.6	20.7	21.4	-0.6
Per capita income (\$)	31,175	21,780	29,296	14.5
% families in poverty	8.7	10.9	9.2	-8.3

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990
Physicians	225	119	204	22
Generalist physicians	78	57	74	23
Medical specialists	39	12	34	43
Surgical specialists	49	26	45	6
General surgeons	10	7	9	-12
OB-GYNs	12	6	11	12
Other surgeons	28	12	25	11
Other specialists	65	27	57	33
Dentists	43	29	40	-6
PAs	14	13	14	36
Full-time RNs (hospital-based)	281	213	268	-2
Part-time RNs (hospital-based)	155	109	146	15

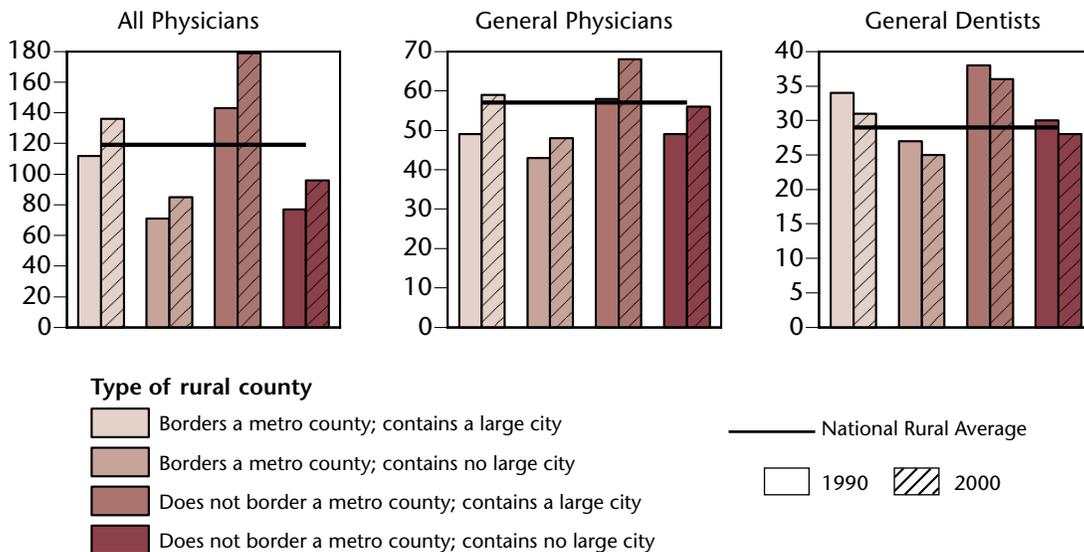
See page 155 for data sources and explanatory notes.

UNITED STATES

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	251	749	234	1070
Population	14,764,738	16,691,464	10,739,004	13,962,227
Short-term general hospitals	376	616	338	898
Beds/100,000 persons	304	245	401	369
% pop. in persistent poverty counties	10.8	19.5	14.9	28.1
Per capita income (\$)	22,904	21,016	22,855	20,679
% families in poverty	9.6	10.6	11.0	12.6

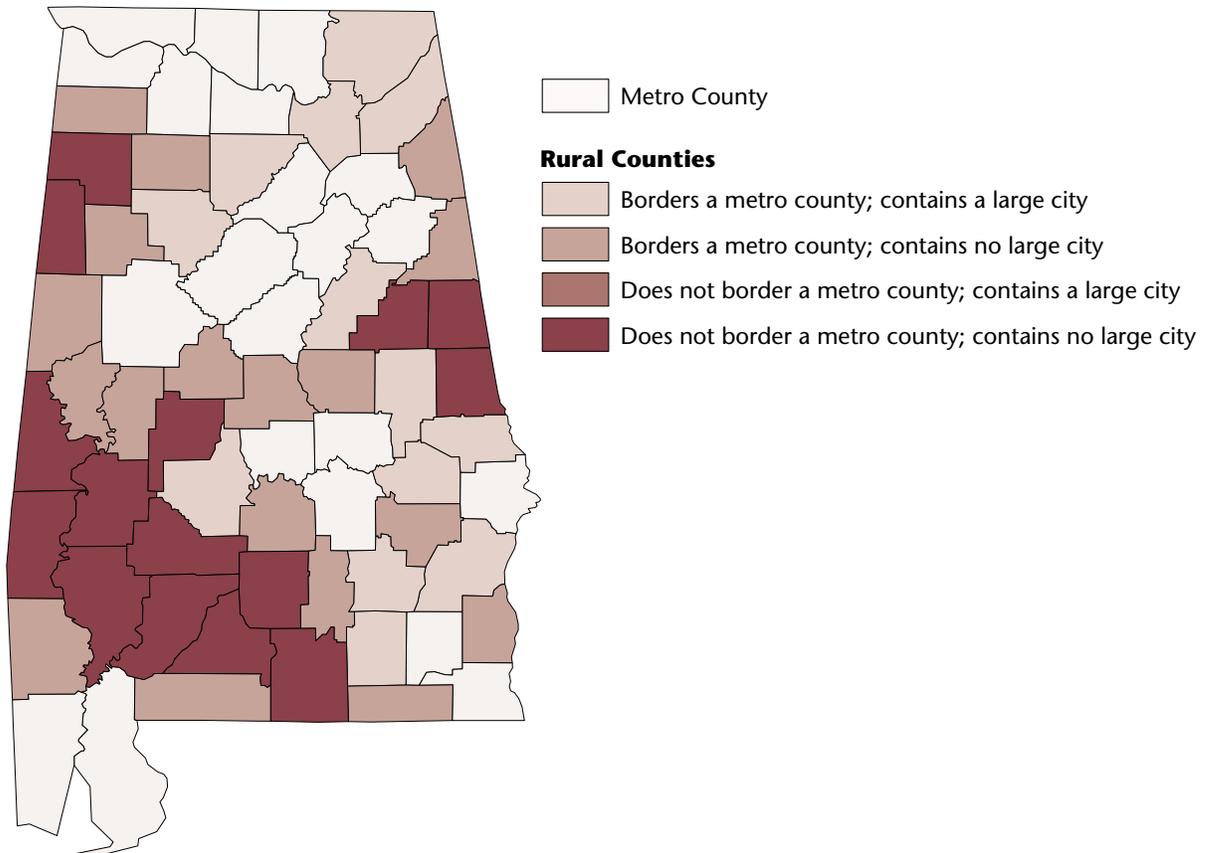
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	112	136	71	85	143	179	77	96
Generalist physicians	49	59	43	48	58	68	49	56
Medical specialists	9	16	4	7	12	23	3	7
Surgical specialists	30	32	13	14	41	46	14	17
General surgeons	9	8	6	5	11	11	7	6
OB-GYNs	7	8	3	3	9	11	3	4
Other surgeons	15	16	4	6	21	25	5	7
Other specialists	23	33	11	17	31	47	11	18
Dentists	34	31	27	25	38	36	30	28
PAs	9	11	8	11	12	15	7	14
Full-time RNs (hospital-based)	210	227	126	141	278	330	154	194
Part-time RNs (hospital-based)	103	130	55	73	140	167	67	87

ALABAMA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	2,993,867	1,453,233	4,447,100	10.1	25	18	23
% population > 65	12.6	14.0	13.0	0.7	14	29	21
% population < 15	21.1	20.7	20.9	-3.4	32	21	28
Per capita income (\$)	25,480	19,475	23,518	12.8	43	44	43
% families in poverty	11.2	15.3	12.5	-12.2	6	7	6

Health Care Providers per 100,000 Population in 2000

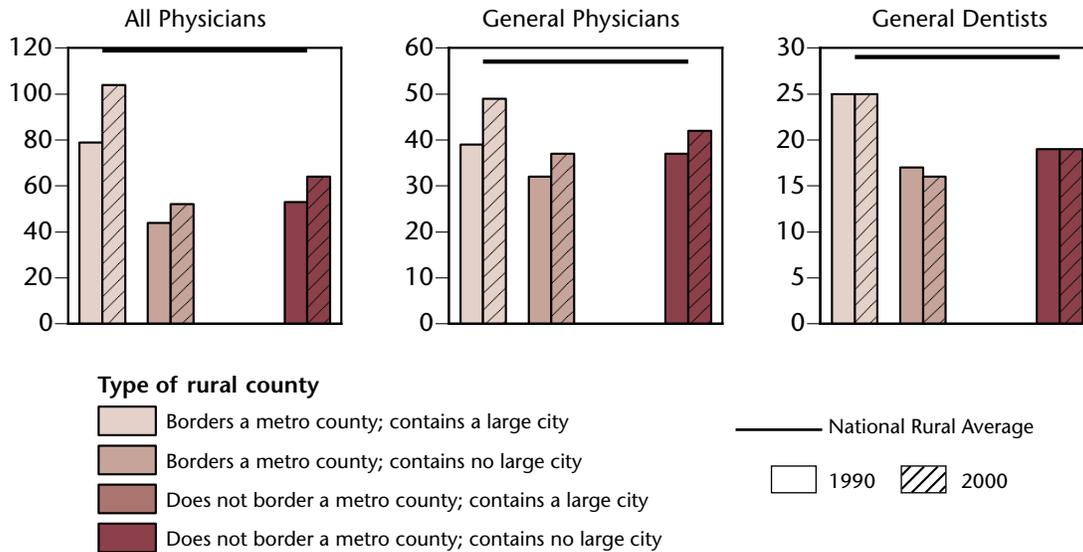
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	204	82	164	30.9	39	46	45
Generalist physicians	68	44	60	28.1	40	47	43
Medical specialists	34	6	25	76.0	34	45	38
Surgical specialists	54	19	43	16.0	20	42	24
General surgeons	10	6	9	-7.0	23	39	28
OB-GYNs	11	5	9	20.8	32	33	33
Other surgeons	33	8	24	25.6	12	47	20
Other specialists	52	13	40	39.4	44	48	47
Dentists	32	22	29	-1.4	43	45	44
PAs	8	2	6	-48.5	42	47	44
Full-time RNs (hospital-based)	378	207	322	5.4	12	25	12
Part-time RNs (hospital-based)	118	54	97	35.4	40	47	45

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	13	18	0	15
Population	758,421	370,864	...	323,948
Short-term general hospitals	18	16	...	18
Hospital beds/100,000 persons	275	331	...	353
% pop. in persistent poverty counties	42.8	44.3	...	51.2
Per capita income (\$)	20,079	18,632	...	19,027
% families in poverty	13.7	16.0	...	18.2

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

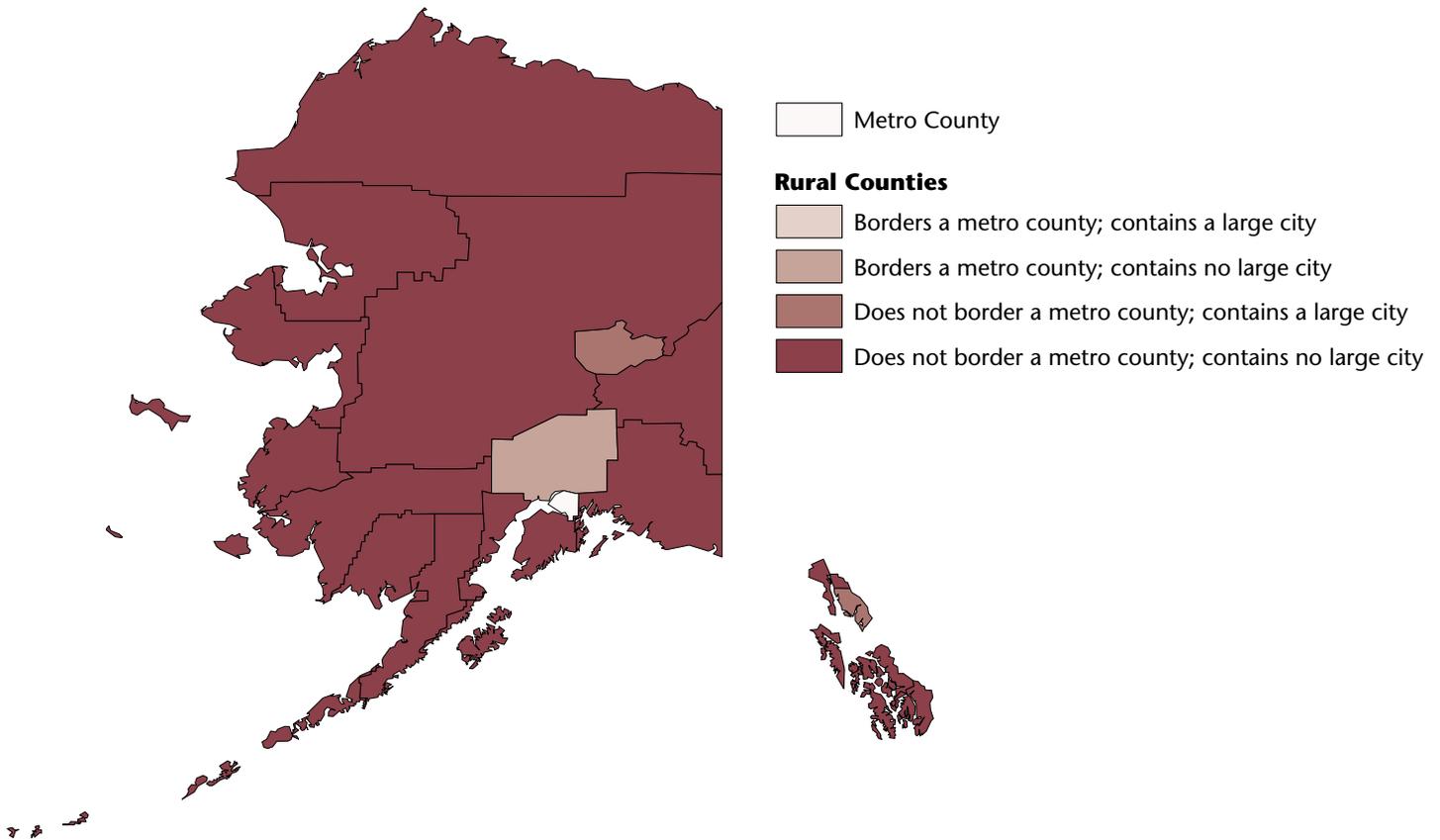


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	79	104	44	52	...	...	53	64
Generalist physicians	39	49	32	37	...	...	37	42
Medical specialists	4	9	1	2	...	...	1	5
Surgical specialists	23	28	7	8	...	...	9	12
General surgeons	8	7	4	4	...	...	5	6
OB-GYNs	5	8	2	2	...	...	2	4
Other surgeons	10	13	1	1	...	...	2	2
Other specialists	13	20	4	5	...	...	6	7
Dentists	25	25	17	16	...	...	19	19
PAs	21	2	10	2	...	...	2	2
Full-time RNs (hospital-based)	204	238	125	159	...	...	148	188
Part-time RNs (hospital-based)	41	53	22	45	...	...	22	66

... No counties of this type

ALASKA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	260,283	364,756	625,039	14.0	47	41	48
% population > 65	5.5	5.9	5.7	41.7	50	49	50
% population < 15	24.4	25.8	25.2	-7.8	2	2	2
Per capita income (\$)	34,950	25,833	29,630	---	7	8	13
% families in poverty	5.1	7.9	6.7	---	48	35	38

Health Care Providers per 100,000 Population in 2000

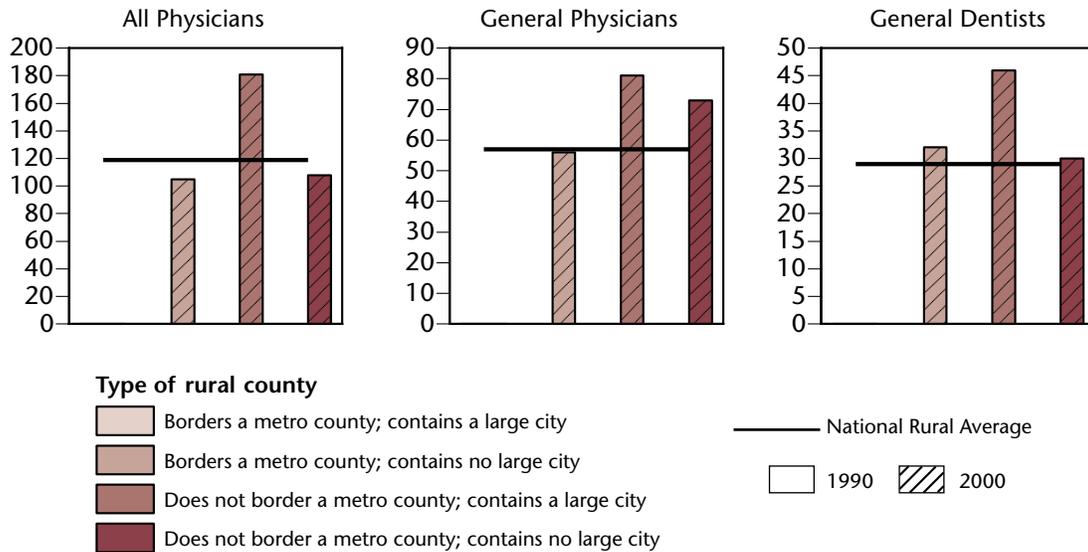
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	224	130	169	---	25	17	40
Generalist physicians	80	73	76	---	20	6	19
Medical specialists	30	5	15	---	42	48	49
Surgical specialists	55	25	38	---	16	26	42
General surgeons	9	7	8	---	36	30	41
OB-GYNs	15	5	9	---	5	31	31
Other surgeons	32	12	20	---	16	27	44
Other specialists	63	32	45	---	29	22	41
Dentists	57	36	45	---	2	16	13
PAs	38	42	40	---	1	1	1
Full-time RNs (hospital-based)	409	233	306	---	7	20	15
Part-time RNs (hospital-based)	138	116	125	---	36	22	32

See page 155 for data sources and explanatory notes.
 --- Data not available

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	1	2	22
Population	...	59,322	113,551	191,883
Short-term general hospitals	...	1	3	16
Hospital beds/100,000 persons	...	61	324	263
% pop. in persistent poverty counties	...	0	0	0
Per capita income (\$)	...	19,367	29,875	25,440
% families in poverty	...	7.8	5.0	9.7

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	---	105	---	181	---	108
Generalist physicians	---	56	---	81	---	73
Medical specialists	---	2	---	6	---	5
Surgical specialists	---	22	---	44	---	15
General surgeons	---	7	---	9	---	7
OB-GYNs	---	7	---	9	---	3
Other surgeons	---	8	---	26	---	5
Other specialists	---	27	---	54	---	20
Dentists	---	32	---	46	---	30
PAs	---	29	---	40	---	48
Full-time RNs (hospital-based)	---	64	---	278	---	258
Part-time RNs (hospital-based)	---	152	---	140	---	91

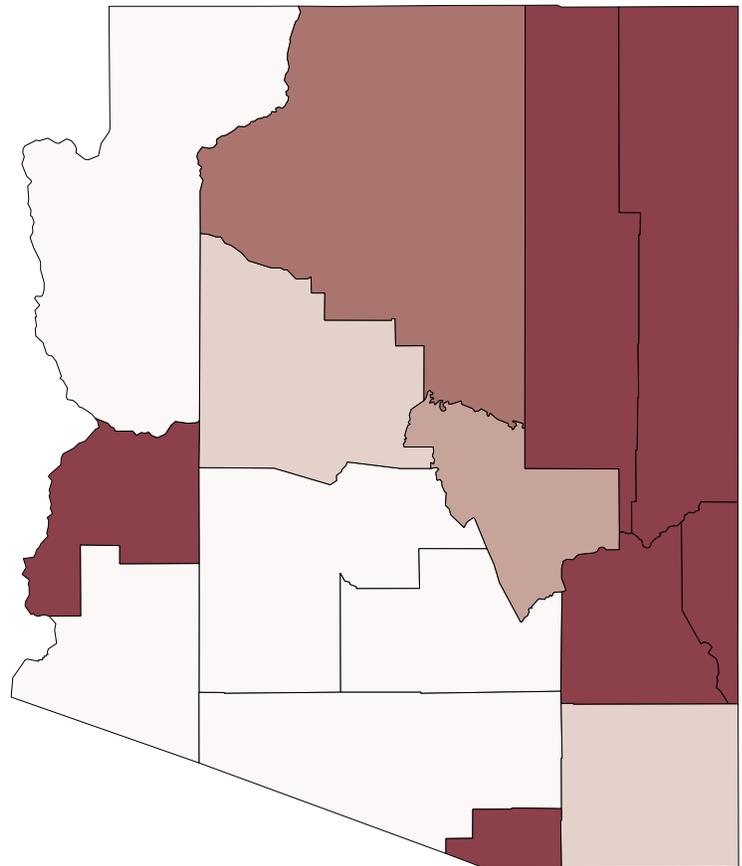
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ARIZONA

 Metro County

Rural Counties

-  Borders a metro county; contains a large city
-  Borders a metro county; contains no large city
-  Does not border a metro county; contains a large city
-  Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	4,410,680	719,952	5,130,632	40.0	16	34	20
% population > 65	12.8	14.2	13.0	-0.3	12	27	22
% population < 15	22.3	23.3	22.4	-1.3	10	4	8
Per capita income (\$)	26,082	18,257	24,984	10.3	41	48	37
% families in poverty	9.0	15.4	9.9	-13.5	15	6	15

Health Care Providers per 100,000 Population in 2000

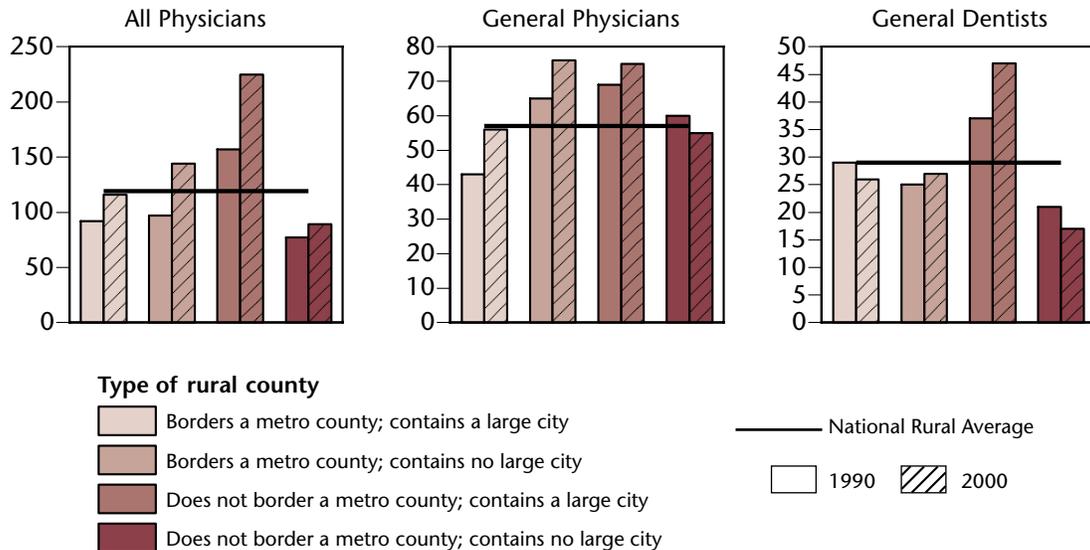
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	188	127	180	6.6	45	22	31
Generalist physicians	65	60	64	7.5	43	22	36
Medical specialists	33	14	31	15.0	38	17	18
Surgical specialists	41	24	39	-7.7	49	33	39
General surgeons	8	7	8	-23.0	49	35	45
OB-GYNs	10	7	9	-1.2	47	21	32
Other surgeons	23	11	22	-3.8	45	33	37
Other specialists	57	33	54	28.0	41	19	24
Dentists	31	27	31	-17.4	46	33	43
PAs	14	17	14	83.3	30	19	27
Full-time RNs (hospital-based)	224	242	226	-11.9	41	13	40
Part-time RNs (hospital-based)	101	102	101	24.1	45	27	43

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	3	1	1	5
Population	323,653	51,335	116,320	228,644
Short-term general hospitals	9	3	3	10
Hospital beds/100,000 persons	249	206	230	188
% pop. in persistent poverty counties	0	0	100.0	73.0
Per capita income (\$)	19,579	18,375	21,918	14,499
% families in poverty	11.4	12.6	13.1	23.7

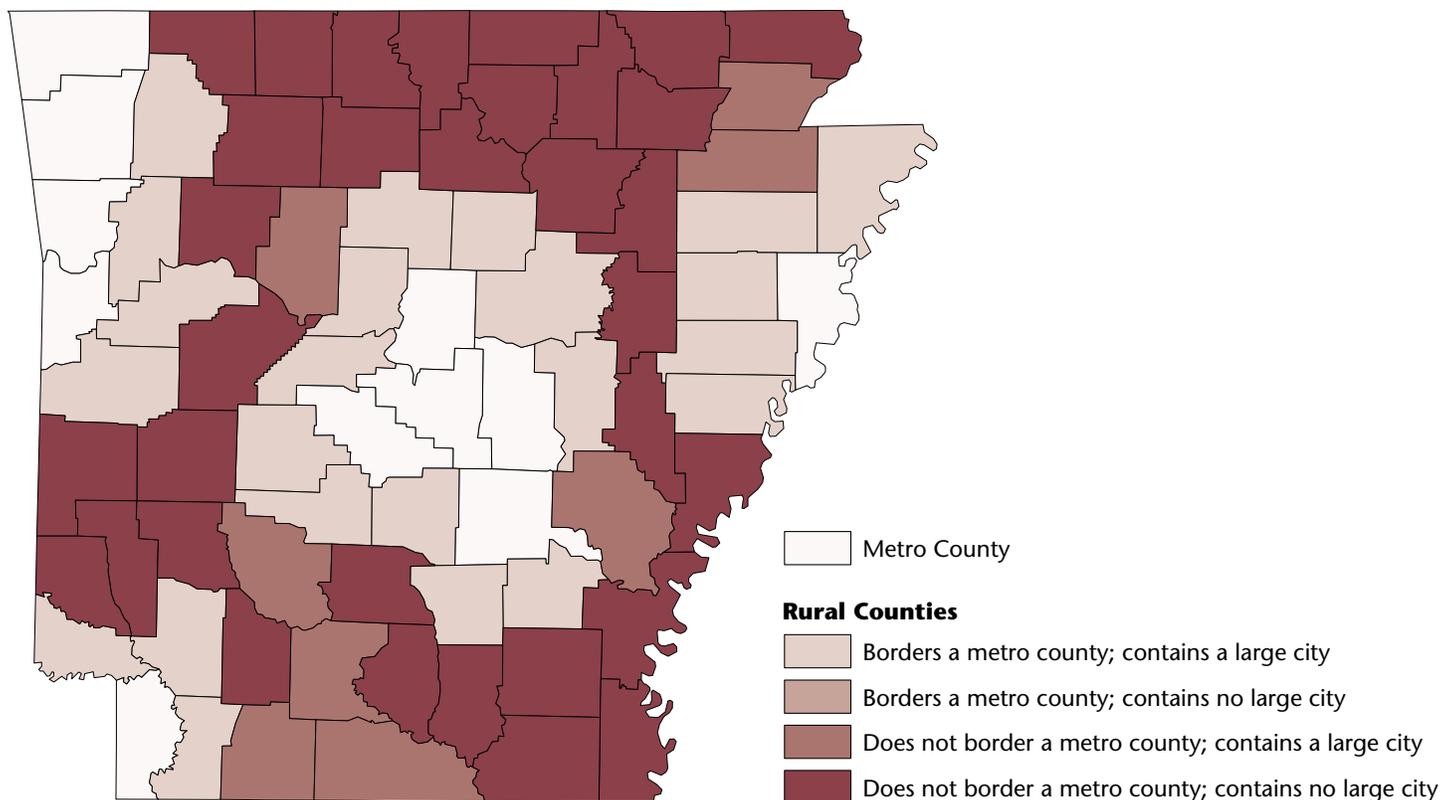
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	92	116	97	144	157	225	77	89
Generalist physicians	43	56	65	76	69	75	60	55
Medical specialists	7	13	2	8	11	28	2	9
Surgical specialists	24	23	12	33	42	52	9	10
General surgeons	9	6	5	10	7	12	3	4
OB-GYNs	5	6	2	8	12	15	4	3
Other surgeons	10	11	5	16	23	25	3	3
Other specialists	17	30	17	27	34	75	6	18
Dentists	29	26	25	27	37	47	21	17
PAs	0	13	0	21	31	15	14	24
Full-time RNs (hospital-based)	183	181	100	189	227	367	155	275
Part-time RNs (hospital-based)	80	107	53	88	123	198	18	49

ARKANSAS



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,238,871	1,434,529	2,673,400	13.7	34	19	33
% population > 65	11.7	15.9	14.0	-6.0	21	11	9
% population < 15	21.7	20.4	21.0	-4.2	18	27	25
Per capita income (\$)	24,791	19,575	21,992	15.2	47	41	47
% families in poverty	10.2	13.5	12.0	-18.7	9	10	7

Health Care Providers per 100,000 Population in 2000

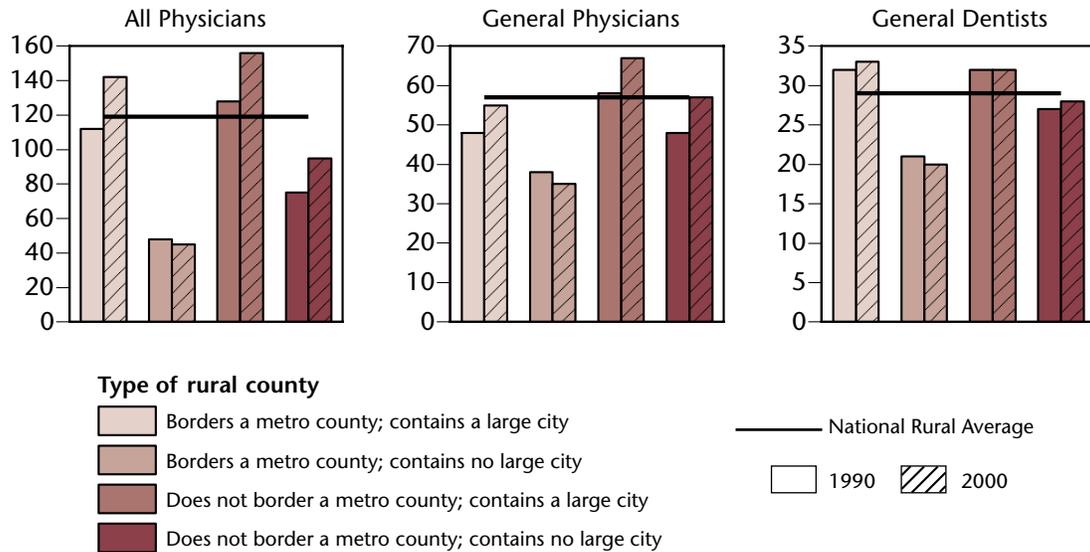
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	214	106	156	24.7	32	40	48
Generalist physicians	70	54	61	17.4	37	32	41
Medical specialists	40	10	24	65.7	21	33	44
Surgical specialists	52	23	36	8.3	25	38	47
General surgeons	10	6	8	-12.5	28	38	43
OB-GYNs	10	5	7	13.4	42	40	48
Other surgeons	31	12	21	17.0	18	29	41
Other specialists	60	20	39	42.6	34	41	48
Dentists	36	28	32	-1.5	39	30	39
PA's	3	1	2	-72.2	50	48	49
Full-time RNs (hospital-based)	430	238	327	21.3	5	14	10
Part-time RNs (hospital-based)	144	69	103	22.8	33	43	41

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	4	19	8	33
Population	236,541	319,192	318,265	560,531
Short-term general hospitals	7	12	10	28
Hospital beds/100,000 persons	404	188	358	341
% pop. in persistent poverty counties	34.4	36.2	31.4	45.5
Per capita income (\$)	20,584	18,262	21,525	18,790
% families in poverty	13.7	13.1	12.9	14.1

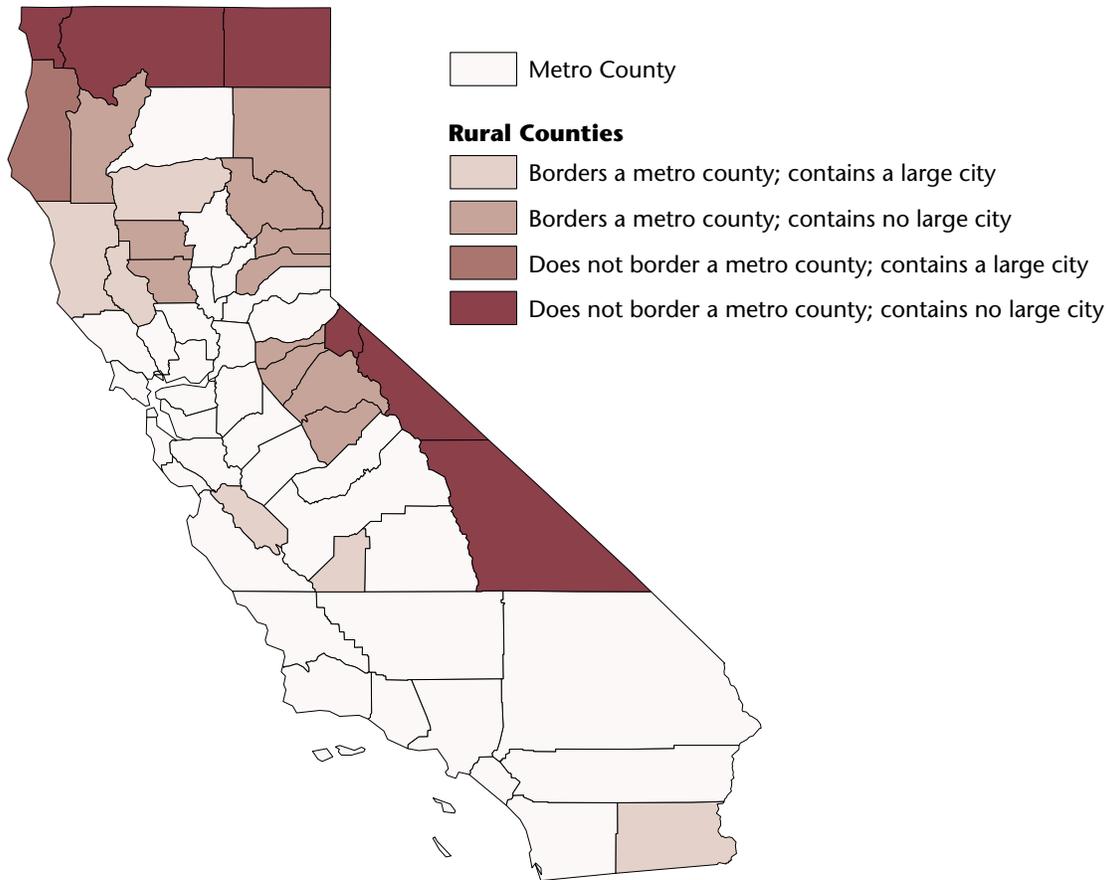
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	112	142	48	45	128	156	75	95
Generalist physicians	48	55	38	35	58	67	48	57
Medical specialists	12	20	1	2	7	17	3	6
Surgical specialists	34	38	5	3	34	41	14	16
General surgeons	11	9	3	2	9	8	7	7
OB-GYNs	7	8	1	1	7	9	2	2
Other surgeons	16	20	1	1	18	24	5	7
Other specialists	19	31	4	5	29	33	10	17
Dentists	32	33	21	20	32	32	27	28
PAs	13	1	4	1	11	2	4	2
Full-time RNs (hospital-based)	231	371	75	98	200	333	147	208
Part-time RNs (hospital-based)	54	100	9	37	79	90	32	61

CALIFORNIA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	32,750,394	1,121,254	33,871,648	13.8	1	24	1
% population > 65	10.5	13.5	10.6	0.8	38	34	45
% population < 15	23.0	21.1	23.0	3.6	5	17	6
Per capita income (\$)	32,514	21,809	32,159	11.5	12	29	7
% families in poverty	10.5	12.0	10.6	14.0	8	13	12

Health Care Providers per 100,000 Population in 2000

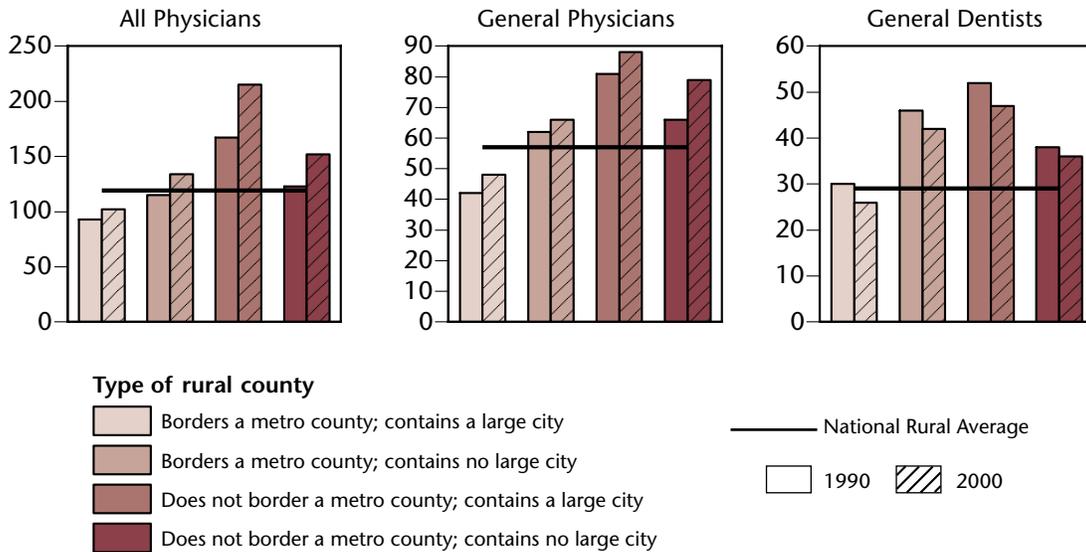
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	200	130	198	8.9	41	18	20
Generalist physicians	72	61	72	15.4	35	18	27
Medical specialists	30	8	29	18.9	44	40	23
Surgical specialists	44	28	44	-6.1	41	21	21
General surgeons	8	8	8	-20.3	43	26	39
OB-GYNs	11	6	11	0.5	33	29	17
Other surgeons	25	15	25	-3.2	42	17	18
Other specialists	57	34	56	11.8	40	18	19
Dentists	47	35	46	0.4	13	19	9
PAs	11	18	11	27.8	36	15	35
Full-time RNs (hospital-based)	195	169	195	-7.9	45	38	44
Part-time RNs (hospital-based)	126	130	126	17.6	38	19	31

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	6	11	1	6
Population	525,669	355,804	126,518	113,263
Short-term general hospitals	14	16	5	8
Hospital beds/100,000 persons	146	224	231	313
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	20,200	23,677	23,237	21,817
% families in poverty	14.2	8.4	12.9	13.1

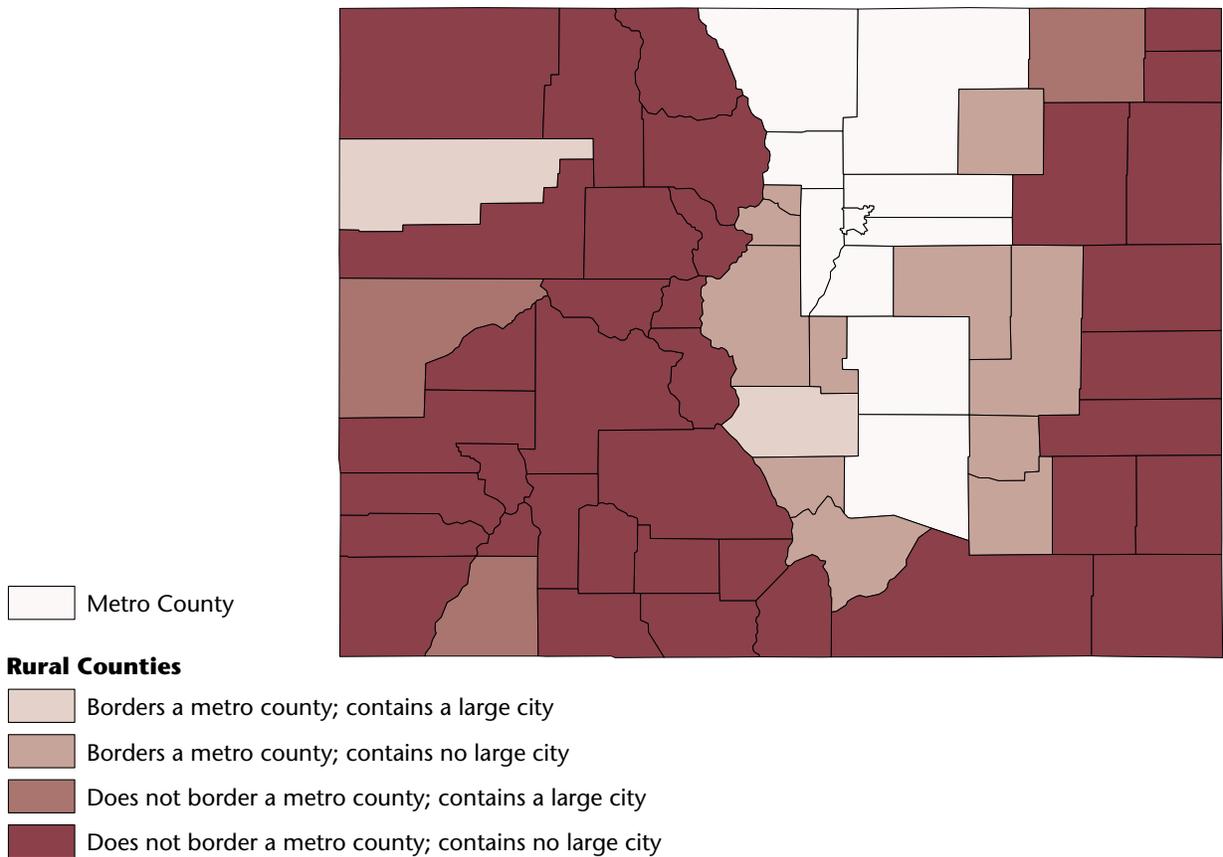
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	93	102	115	134	167	215	123	152
Generalist physicians	42	48	62	66	81	88	66	79
Medical specialists	5	7	4	9	4	10	0	4
Surgical specialists	24	25	22	26	39	46	24	31
General surgeons	7	7	8	8	8	9	9	6
OB-GYNs	6	6	5	5	8	9	5	6
Other surgeons	11	13	9	13	23	28	9	19
Other specialists	22	23	27	35	44	72	33	37
Dentists	30	26	46	42	52	47	38	36
PAs	12	12	8	20	13	33	3	18
Full-time RNs (hospital-based)	125	172	119	137	159	192	117	227
Part-time RNs (hospital-based)	32	64	103	181	148	236	163	154

COLORADO



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,491,401	809,860	4,301,261	30.6	21	31	24
% population > 65	9.2	11.9	9.7	-3.3	46	46	47
% population < 15	21.6	20.1	21.3	-4.2	21	33	20
Per capita income (\$)	34,167	24,986	32,439	25.1	8	10	6
% families in poverty	5.8	7.9	6.2	-27.6	43	34	44

Health Care Providers per 100,000 Population in 2000

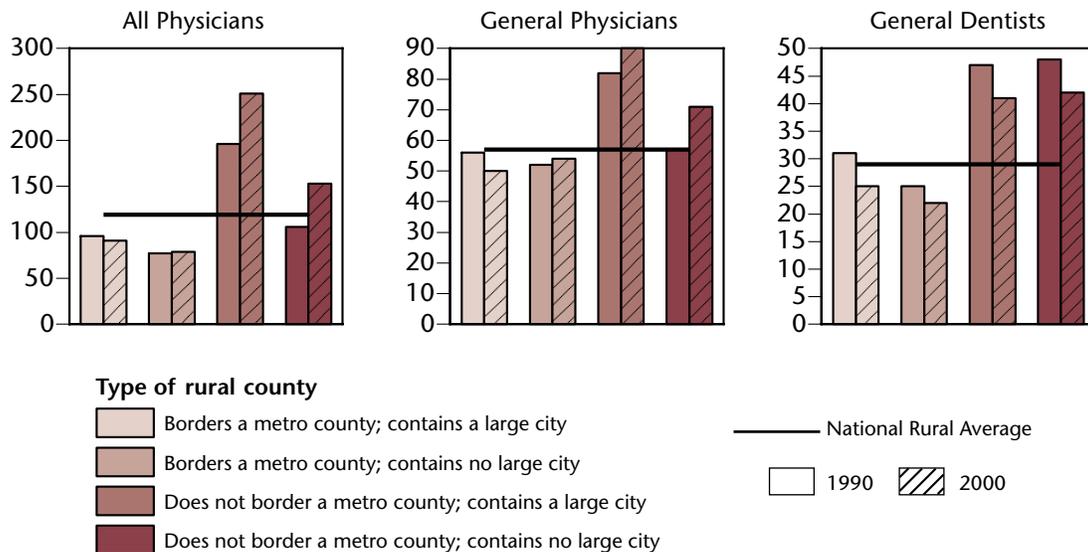
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	215	159	204	18.2	31	10	15
Generalist physicians	75	71	74	18.2	30	7	21
Medical specialists	34	16	31	30.9	37	12	19
Surgical specialists	47	32	44	3.4	36	13	19
General surgeons	9	8	9	-8.5	35	24	34
OB-GYNs	11	6	10	6.4	29	30	24
Other surgeons	27	19	25	6.9	35	9	15
Other specialists	64	45	60	33.4	24	8	12
Dentists	49	37	47	-9.4	8	14	7
PAs	22	18	21	62.3	12	14	11
Full-time RNs (hospital-based)	224	223	224	-14.1	40	22	41
Part-time RNs (hospital-based)	89	104	92	-29.1	46	25	47

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	1	11	3	38
Population	46,145	139,481	180,700	443,534
Short-term general hospitals	1	5	6	29
Hospital beds/100,000 persons	119	227	511	276
% pop. in persistent poverty counties	0	20.2	0	10.9
Per capita income (\$)	18,111	24,496	25,165	25,783
% families in poverty	8.3	6.9	7.1	8.5

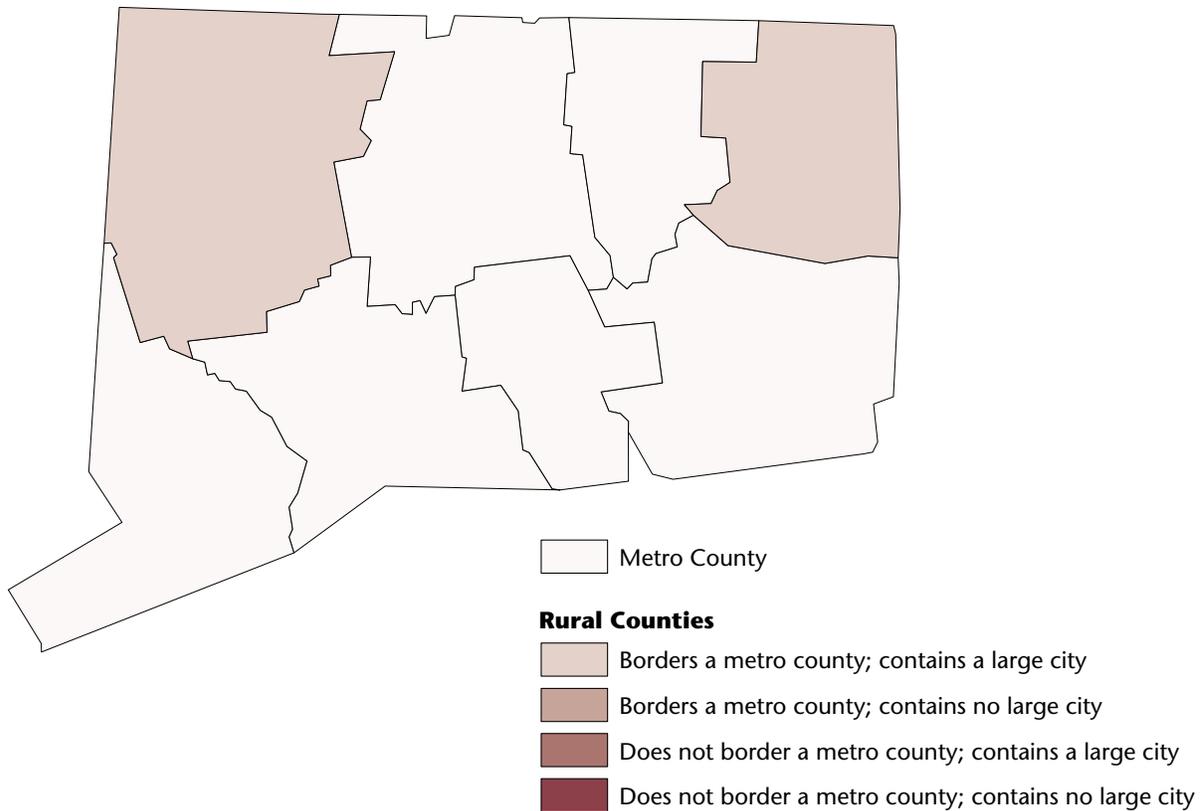
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	96	91	77	79	196	251	106	153
Generalist physicians	56	50	52	54	82	90	57	71
Medical specialists	0	4	5	4	29	43	4	10
Surgical specialists	12	20	12	9	48	55	23	32
General surgeons	3	4	7	5	12	12	7	7
OB-GYNs	0	4	1	2	8	8	4	6
Other surgeons	9	11	4	2	28	35	12	18
Other specialists	28	22	8	11	38	79	22	44
Dentists	31	25	25	22	47	41	48	42
PAs	0	24	9	12	43	16	6	20
Full-time RNs (hospital-based)	168	100	124	105	335	478	174	168
Part-time RNs (hospital-based)	0	74	11	63	177	191	78	85

CONNECTICUT



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,114,281	291,284	3,405,565	3.6	24	45	29
% population > 65	13.8	13.5	13.8	1.8	5	35	10
% population < 15	20.8	20.6	20.8	8.3	36	23	32
Per capita income (\$)	41,530	31,843	40,702	15.6	1	2	1
% families in poverty	5.8	3.8	5.6	12.0	41	49	47

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	270	170	261	23.8	9	7	4
Generalist physicians	85	68	83	26.3	16	11	9
Medical specialists	48	22	46	43.0	12	4	7
Surgical specialists	62	36	59	9.6	5	9	1
General surgeons	12	8	12	-4.4	12	16	6
OB-GYNs	16	10	15	13.8	2	4	2
Other surgeons	34	19	33	13.6	9	10	1
Other specialists	80	47	77	25.4	9	5	4
Dentists	53	40	52	-9.2	5	9	4
PAAs	24	8	23	62.0	11	37	9
Full-time RNs (hospital-based)	208	73	196	-19.8	44	48	43
Part-time RNs (hospital-based)	144	224	150	-10.1	34	2	24

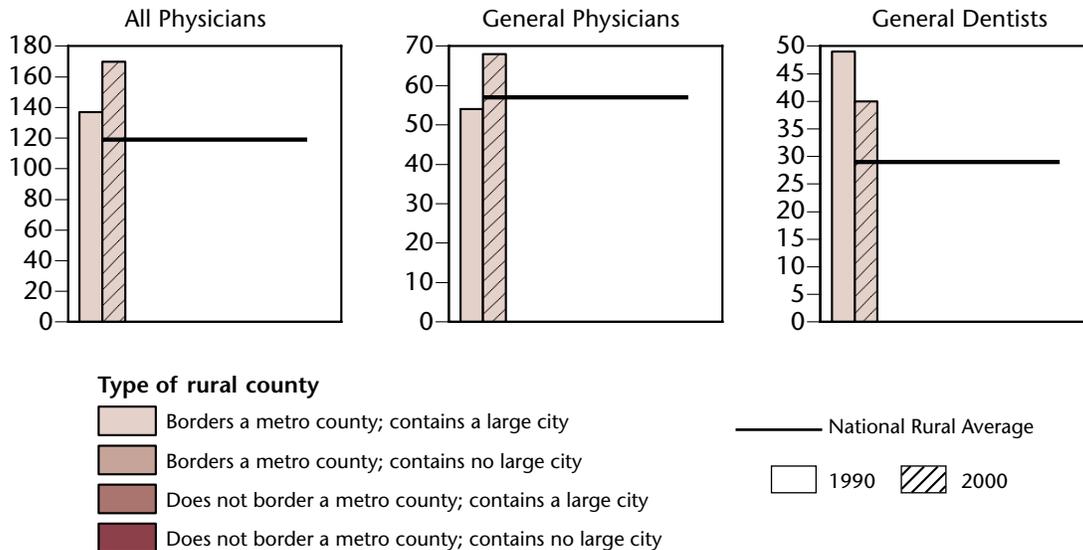
See page 155 for data sources and explanatory notes.

CONNECTICUT

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	2	0	0	0
Population	291,284	...	...	...
Short-term general hospitals	5	...	...	...
Hospital beds/100,000 persons	136	...	...	...
% pop. in persistent poverty counties	0	...	...	...
Per capita income (\$)	31,843	...	...	...
% families in poverty	3.8	...	...	...

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

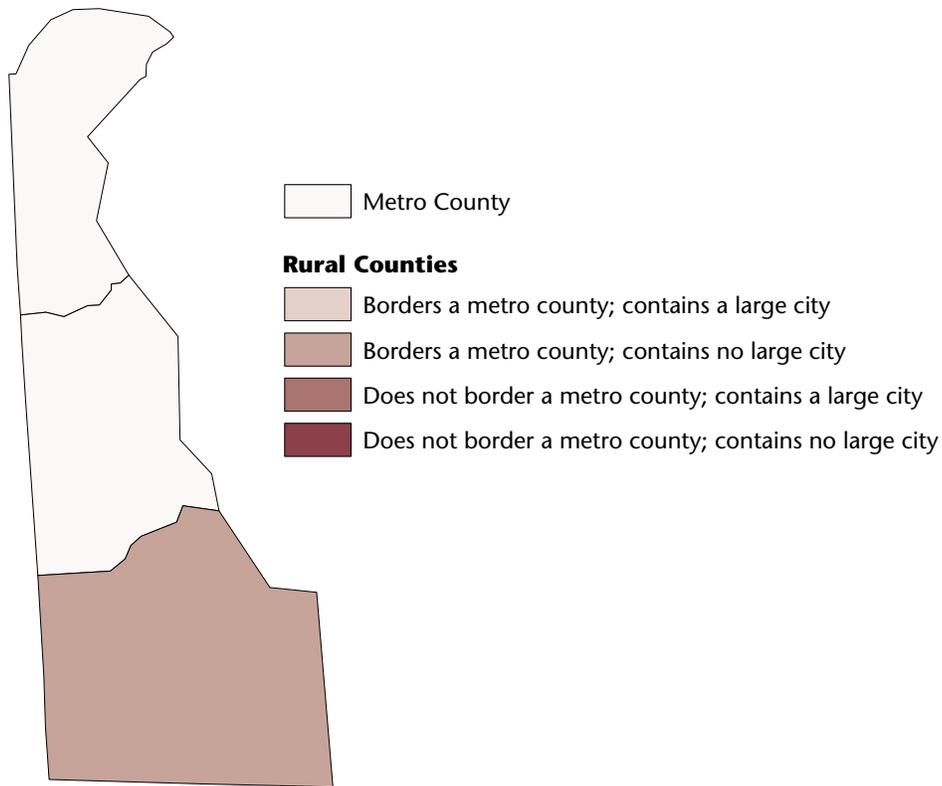


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	137	170	...	...	...	...	...	...
Generalist physicians	54	68	...	...	...	...	...	...
Medical specialists	13	22	...	...	...	...	...	...
Surgical specialists	37	36	...	...	...	...	...	...
General surgeons	9	8	...	...	...	...	...	...
OB-GYNs	8	10	...	...	...	...	...	...
Other surgeons	20	19	...	...	...	...	...	...
Other specialists	34	47	...	...	...	...	...	...
Dentists	49	40	...	...	...	...	...	...
PAs	10	8	...	...	...	...	...	...
Full-time RNs (hospital-based)	131	73	...	...	...	...	...	...
Part-time RNs (hospital-based)	194	224	...	...	...	...	...	...

... No counties of this type

DELAWARE



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	626,962	156,638	783,600	17.6	42	47	45
% population > 65	11.6	18.5	13.0	7.1	25	2	23
% population < 15	21.3	18.7	20.8	-0.4	27	46	33
Per capita income (\$)	33,224	22,185	31,017	8.9	10	28	11
% families in poverty	6.1	7.7	6.5	5.4	37	37	41

Health Care Providers per 100,000 Population in 2000

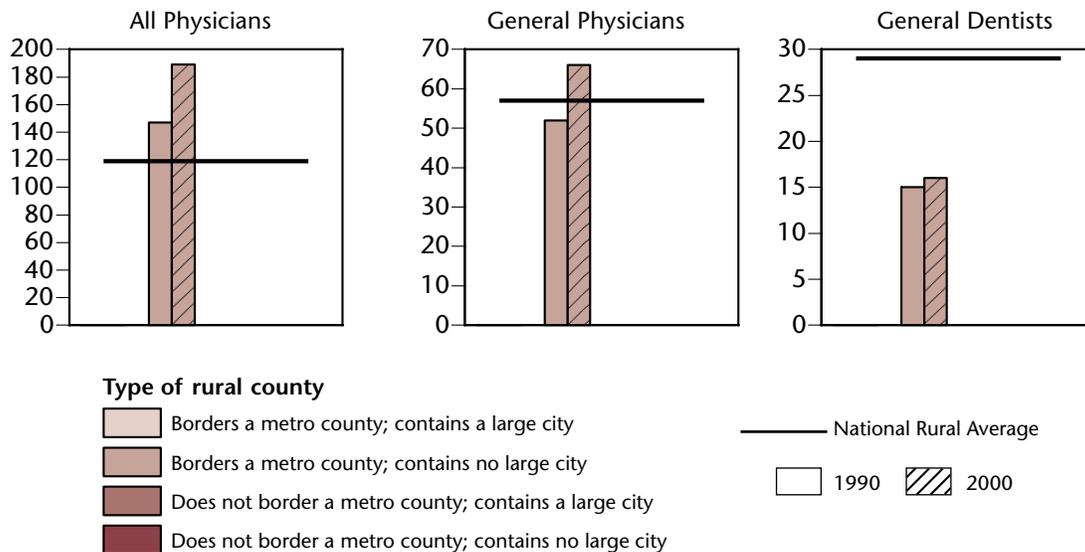
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	215	189	210	24.8	30	4	13
Generalist physicians	79	66	76	27.6	25	15	18
Medical specialists	36	38	36	48.5	29	2	12
Surgical specialists	48	38	46	12.3	32	6	14
General surgeons	10	10	10	-3.9	26	5	18
OB-GYNs	12	8	11	9.6	22	8	14
Other surgeons	26	19	25	21.9	37	8	17
Other specialists	59	56	58	33.8	37	4	14
Dentists	34	16	31	-6.0	41	49	41
PA's	14	4	12	17.5	28	44	31
Full-time RNs (hospital-based)	299	260	291	-13.1	25	11	19
Part-time RNs (hospital-based)	214	71	185	34.0	13	42	14

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	1	0	0
Population	...	156,638	...	...
Short-term general hospitals	...	2	...	...
Hospital beds/100,000 persons	...	263	...	...
% pop. in persistent poverty counties	...	0	...	...
Per capita income (\$)	...	22,185	...	...
% families in poverty	...	7.7	...	...

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

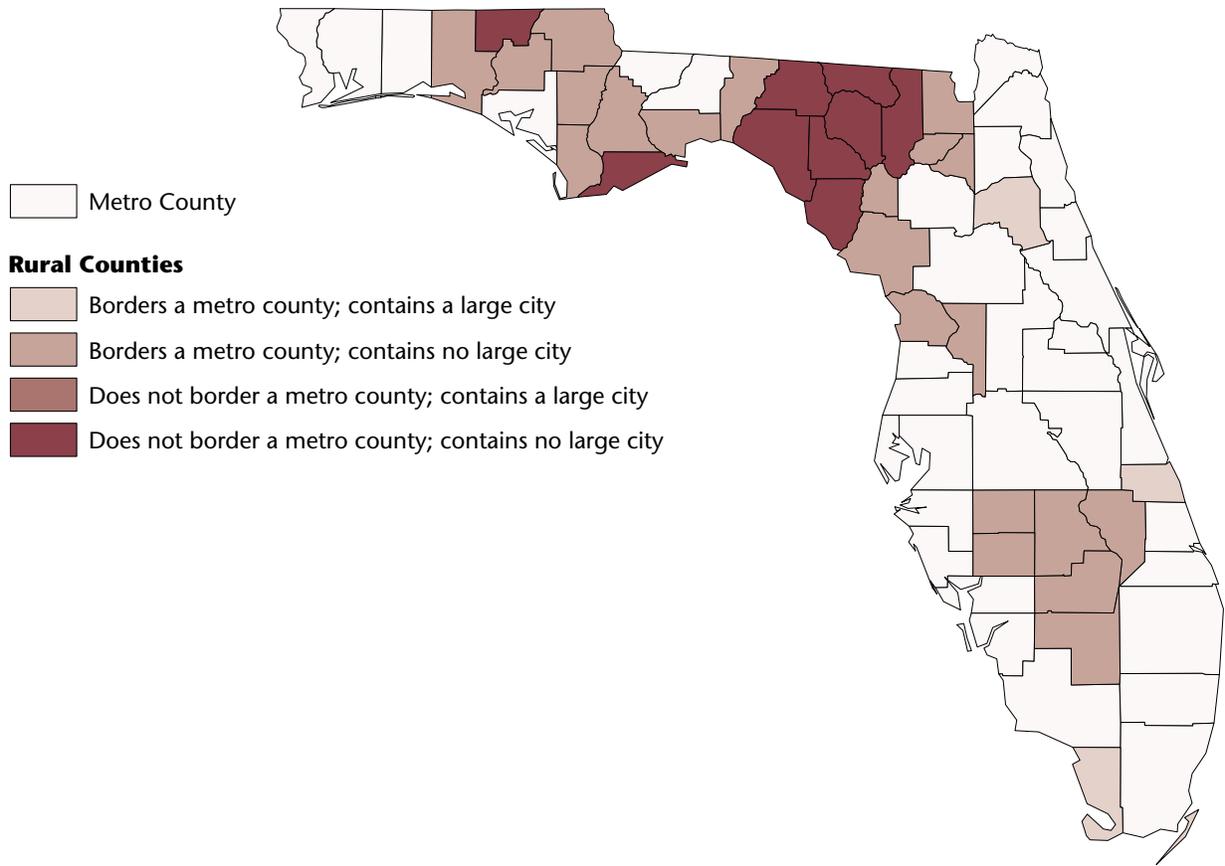


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	147	189	...	...	...	...
Generalist physicians	52	66	...	...	...	...
Medical specialists	19	38	...	...	...	...
Surgical specialists	38	38	...	...	...	...
General surgeons	11	10	...	...	...	...
OB-GYNs	9	8	...	...	...	...
Other surgeons	18	19	...	...	...	...
Other specialists	38	56	...	...	...	...
Dentists	15	16	...	...	...	...
PAs	3	4	...	...	...	...
Full-time RNs (hospital-based)	332	260	...	...	...	...
Part-time RNs (hospital-based)	156	71	...	...	...	...

... No counties of this type

FLORIDA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	14,837,497	1,144,881	15,982,378	23.5	4	23	4
% population > 65	17.4	20.0	17.6	-4.1	1	1	1
% population < 15	19.1	17.7	19.0	1.8	49	49	49
Per capita income (\$)	28,256	21,374	27,763	6.3	35	34	23
% families in poverty	8.9	11.4	9.0	0.0	17	16	18

Health Care Providers per 100,000 Population in 2000

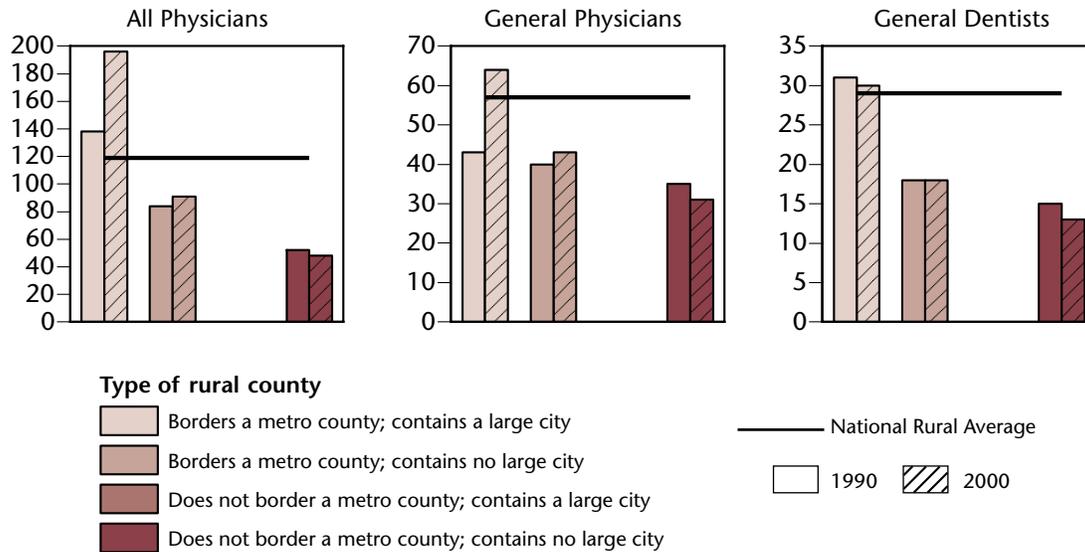
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	222	115	214	21.8	27	25	11
Generalist physicians	77	47	75	27.2	27	43	20
Medical specialists	41	17	40	38.3	18	10	9
Surgical specialists	50	24	49	4.0	29	31	11
General surgeons	9	6	9	-17.3	33	37	27
OB-GYNs	10	5	10	13.7	43	35	26
Other surgeons	31	13	29	9.5	22	22	6
Other specialists	60	31	57	34.9	35	23	16
Dentists	35	21	34	-6.7	40	47	36
PAs	13	11	13	21.1	31	33	29
Full-time RNs (hospital-based)	313	186	303	-1.4	22	32	17
Part-time RNs (hospital-based)	108	77	106	38.1	43	41	40

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	4	21	0	8
Population	319,472	688,779	...	136,630
Short-term general hospitals	9	17	...	5
Hospital beds/100,000 persons	433	184	...	119
% pop. in persistent poverty counties	0	20.6	...	74.5
Per capita income (\$)	28,917	18,711	...	17,161
% families in poverty	9.4	11.6	...	15.6

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

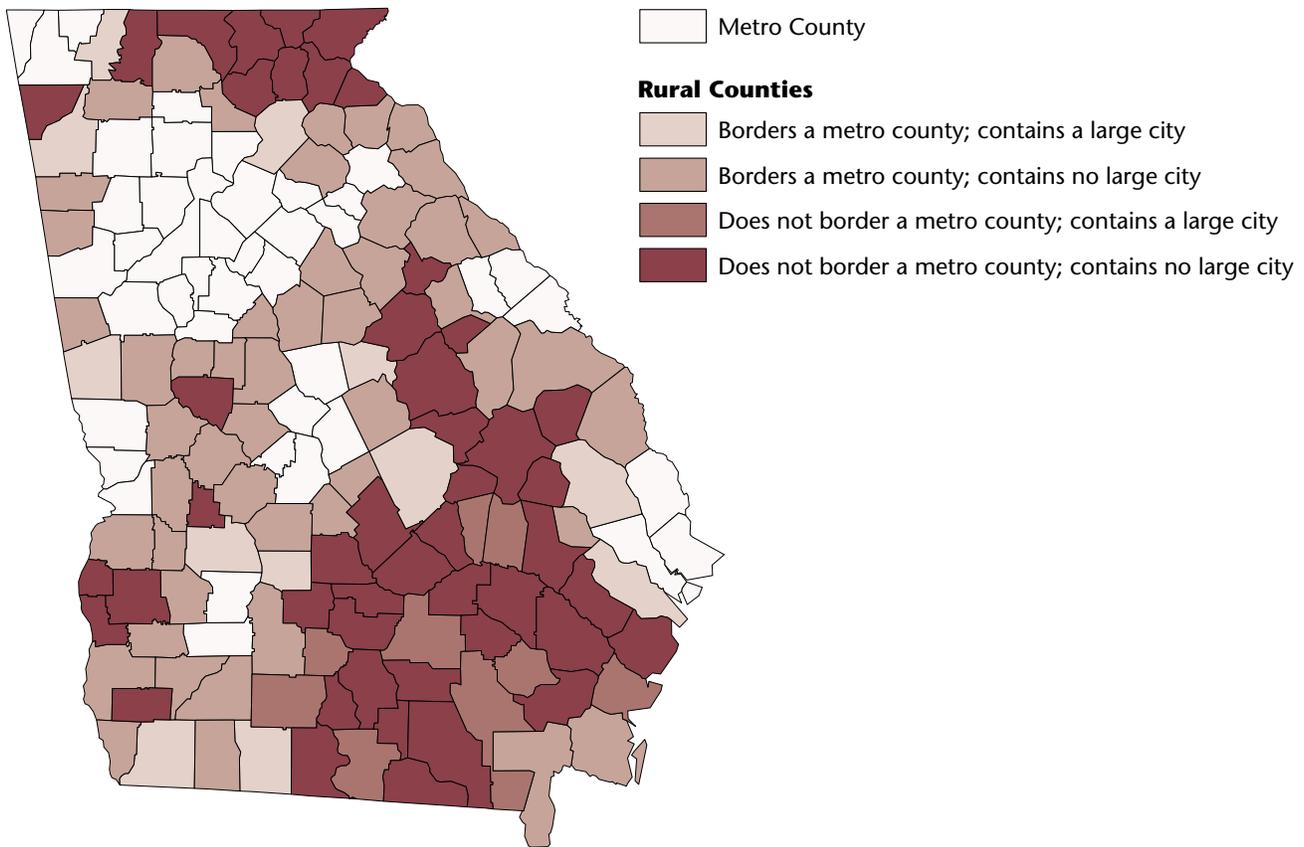


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	138	196	84	91	...	...	52	48
Generalist physicians	43	64	40	43	...	...	35	31
Medical specialists	16	31	8	12	...	...	4	8
Surgical specialists	42	51	15	16	...	...	8	4
General surgeons	10	10	6	6	...	...	5	2
OB-GYNs	9	13	3	3	...	...	1	1
Other surgeons	23	29	7	8	...	...	2	1
Other specialists	36	60	21	22	...	...	5	6
Dentists	31	30	18	18	...	...	15	13
PAs	11	13	14	11	...	...	4	10
Full-time RNs (hospital-based)	243	302	141	152	...	...	60	83
Part-time RNs (hospital-based)	142	161	24	46	...	...	11	38

... No counties of this type

GEORGIA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	5,666,664	2,519,789	8,186,453	26.4	11	3	10
% population > 65	8.5	12.1	9.6	-5.0	48	43	48
% population < 15	22.4	21.9	22.2	-0.5	9	9	10
Per capita income (\$)	30,791	21,047	27,792	19.0	16	35	22
% families in poverty	8.3	13.4	9.9	-13.7	18	11	16

Health Care Providers per 100,000 Population in 2000

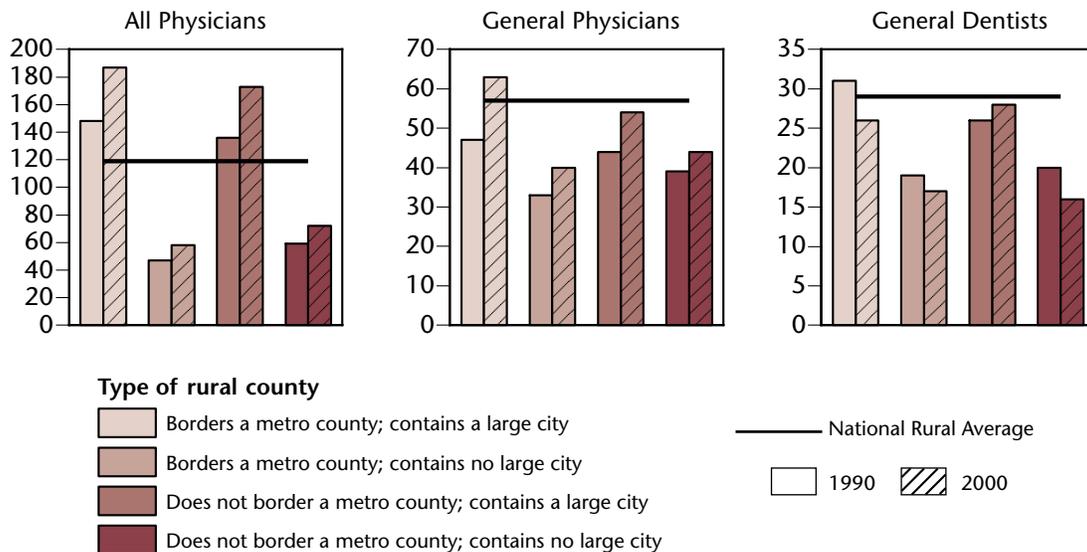
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	195	114	170	22.5	44	28	38
Generalist physicians	65	50	60	29.4	44	40	44
Medical specialists	31	11	24	48.1	41	28	42
Surgical specialists	50	29	43	7.5	31	19	23
General surgeons	10	8	9	-10.3	29	18	26
OB-GYNs	13	9	12	23.2	8	7	9
Other surgeons	26	12	22	9.0	36	25	36
Other specialists	54	26	45	23.6	43	28	40
Dentists	32	21	28	-12.0	45	46	46
PAs	18	12	16	11.9	21	28	24
Full-time RNs (hospital-based)	304	238	283	3.5	24	15	23
Part-time RNs (hospital-based)	178	81	148	58.5	21	39	26

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	12	49	9	47
Population	705,486	801,348	363,012	649,943
Short-term general hospitals	16	33	8	29
Hospital beds/100,000 persons	486	297	339	358
% pop. in persistent poverty counties	32.2	37.1	44.4	47.7
Per capita income (\$)	22,844	20,155	22,543	19,360
% families in poverty	12.1	13.1	14.6	14.5

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	148	187	47	58	136	173	59	72
Generalist physicians	47	63	33	40	44	54	39	44
Medical specialists	11	22	1	2	12	25	2	2
Surgical specialists	49	52	7	9	45	49	12	17
General surgeons	14	12	4	4	12	12	5	6
OB-GYNs	11	16	2	3	11	13	3	6
Other surgeons	24	25	1	1	23	24	3	6
Other specialists	41	52	6	7	34	49	7	9
Dentists	31	26	19	17	26	28	20	16
PAs	19	17	11	8	24	21	15	8
Full-time RNs (hospital-based)	328	367	78	124	276	381	137	158
Part-time RNs (hospital-based)	101	105	17	56	66	112	46	70

HAWAII



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	876,156	335,381	1,211,537	9.3	39	44	42
% population > 65	13.4	12.8	13.3	17.5	9	40	16
% population < 15	20.0	21.3	20.3	-5.4	43	14	42
Per capita income (\$)	29,960	22,354	27,854	-5.5	21	27	21
% families in poverty	7.0	9.3	7.6	26.9	28	24	30

Health Care Providers per 100,000 Population in 2000

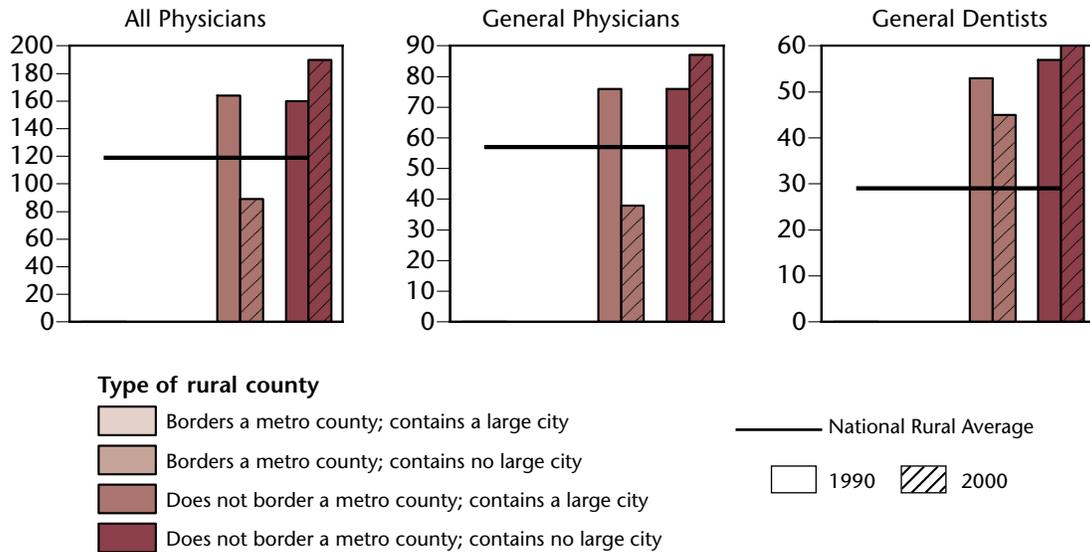
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	267	107	222	18.9	11	39	10
Generalist physicians	96	46	82	14.8	3	46	11
Medical specialists	39	10	31	50.3	24	32	17
Surgical specialists	62	23	51	3.4	6	37	7
General surgeons	13	4	10	-14.8	7	49	13
OB-GYNs	17	7	14	4.9	1	22	4
Other surgeons	32	12	26	11.7	13	26	12
Other specialists	75	32	63	31.5	11	21	11
Dentists	64	48	59	-2.7	1	2	1
PAs	7	8	8	-68.5	43	36	42
Full-time RNs (hospital-based)	285	214	265	6.1	28	24	29
Part-time RNs (hospital-based)	85	38	72	97.5	48	49	49

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	0	3	1
Population	276,918	58,463
Short-term general hospitals	6	2
Hospital beds/100,000 persons	235	393
% pop. in persistent poverty counties	0	0
Per capita income (\$)	22,151	23,312
% families in poverty	9.5	8.4

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

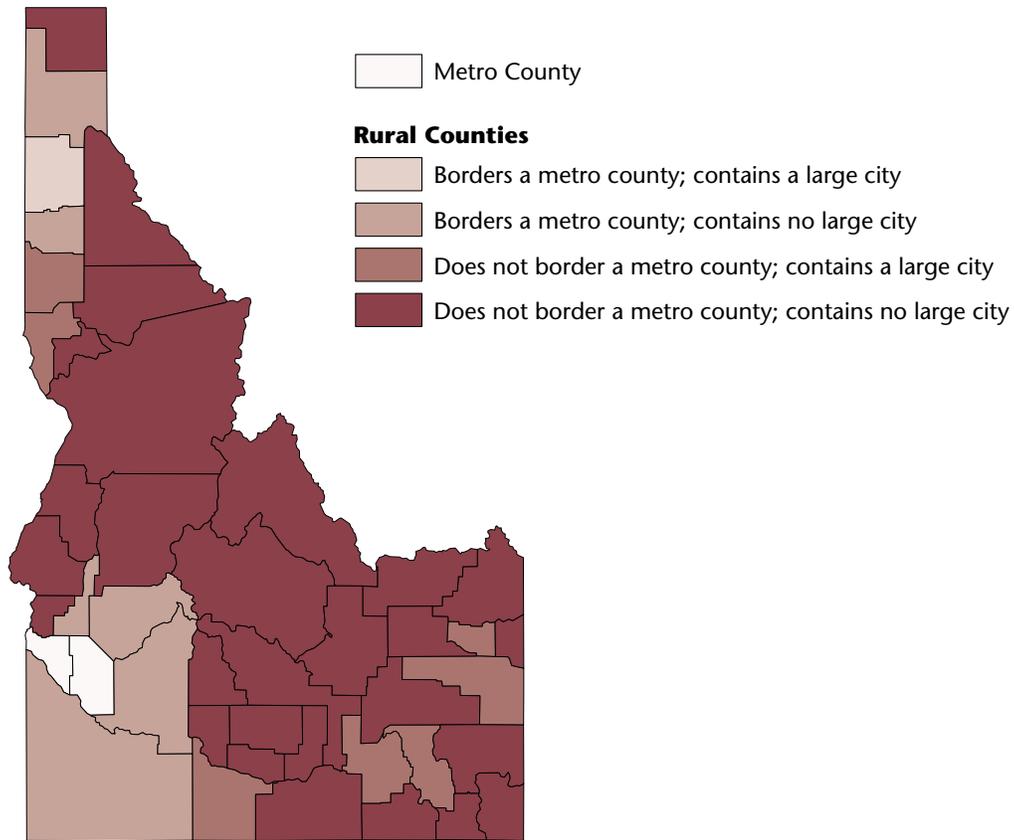


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	164	89	160	190
Generalist physicians	76	38	76	87
Medical specialists	7	8	2	17
Surgical specialists	42	20	39	38
General surgeons	10	4	12	5
OB-GYNs	12	5	12	12
Other surgeons	20	10	16	21
Other specialists	40	27	43	53
Dentists	53	45	57	60
PAs	37	8	14	9
Full-time RNs (hospital-based)	205	199	191	282
Part-time RNs (hospital-based)	32	36	41	46

... No counties of this type

IDAHO



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	432,345	861,608	1,293,953	28.5	44	29	39
% population > 65	9.7	12.1	11.3	-6.4	45	44	41
% population < 15	23.8	23.2	23.4	-9.5	4	5	4
Per capita income (\$)	28,345	21,399	23,720	13.6	33	33	41
% families in poverty	6.4	9.3	8.3	-14.2	33	25	22

Health Care Providers per 100,000 Population in 2000

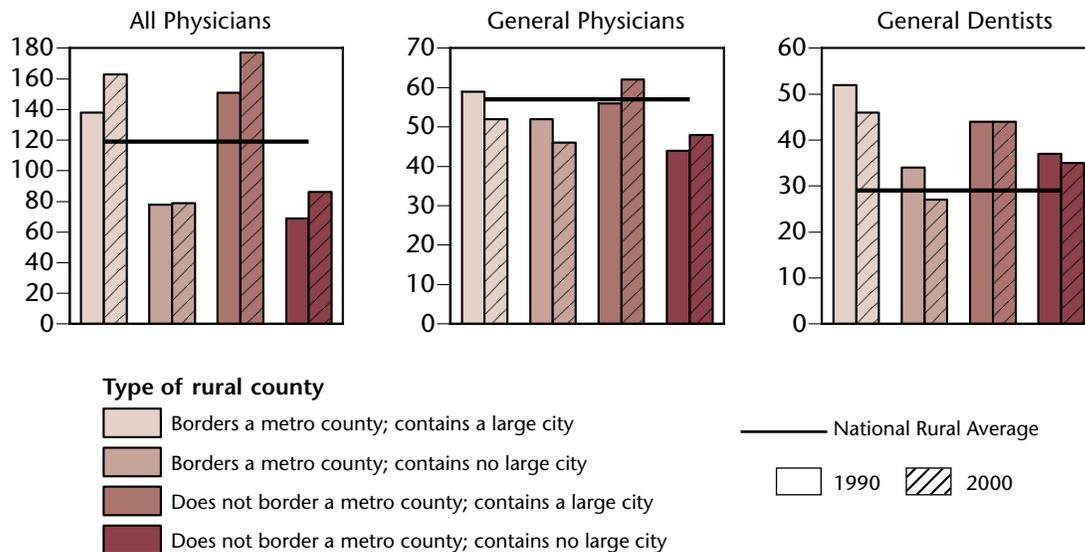
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	185	130	148	24.3	46	19	49
Generalist physicians	59	54	56	13.2	49	33	48
Medical specialists	28	12	17	68.3	47	24	48
Surgical specialists	52	34	40	20.5	24	11	36
General surgeons	12	7	9	10.0	11	29	29
OB-GYNs	13	6	8	32.1	15	26	42
Other surgeons	28	21	23	21.2	33	5	31
Other specialists	48	32	37	42.2	49	20	49
Dentists	39	39	39	-7.8	31	13	24
PAs	20	15	16	77.3	14	24	23
Full-time RNs (hospital-based)	272	162	199	4.5	34	39	42
Part-time RNs (hospital-based)	116	146	136	-7.0	41	16	28

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	1	6	7	28
Population	108,685	107,631	329,721	315,571
Short-term general hospitals	1	4	9	22
Hospital beds/100,000 persons	230	163	351	301
% pop. in persistent poverty counties	0	9.9	0	0
Per capita income (\$)	23,456	19,280	21,753	21,045
% families in poverty	7.7	11.0	8.7	9.8

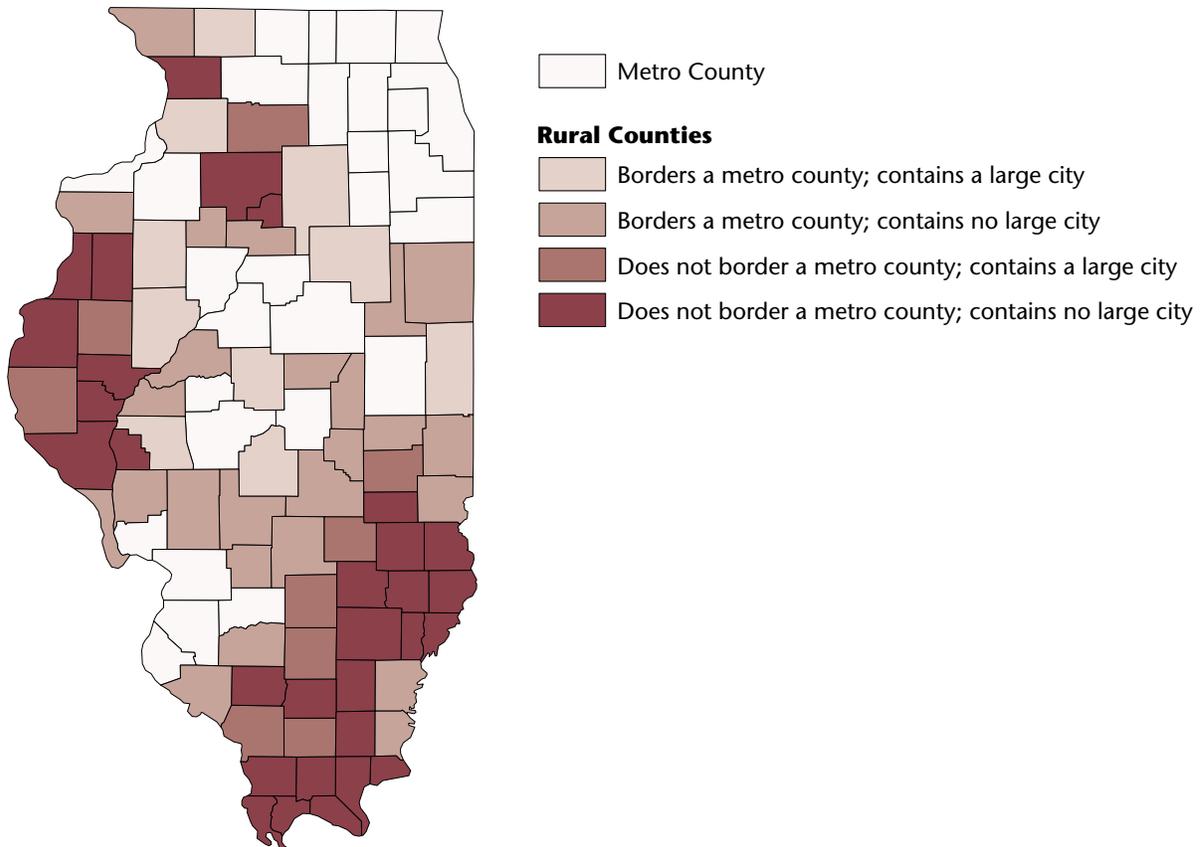
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	138	163	78	79	151	177	69	86
Generalist Physicians	59	52	52	46	56	62	44	48
Physicians – medical	13	20	5	2	11	19	3	5
Physicians – surgical	40	45	9	13	48	53	11	17
Physicians – other	9	10	1	3	11	10	5	6
Nongeneral surgeons	7	6	3	3	9	11	1	3
OB-GYNs	24	29	5	7	29	33	5	9
General surgeons	24	49	13	20	35	44	12	17
Dentists	52	46	34	27	44	44	37	35
PAs	9	11	8	14	1	16	4	15
Full-time RNs	228	155	105	82	209	234	96	118
Part-time RNs	218	166	89	75	171	210	49	97

ILLINOIS



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	10,541,708	1,877,585	12,419,293	8.7	5	8	5
% population > 65	11.3	16.5	12.1	-3.9	28	6	33
% population < 15	22.3	19.4	21.8	0.6	11	40	13
Per capita income (\$)	33,495	22,616	31,851	16.6	9	24	9
% families in poverty	7.8	8.0	7.8	-13.0	20	32	26

Health Care Providers per 100,000 Population in 2000

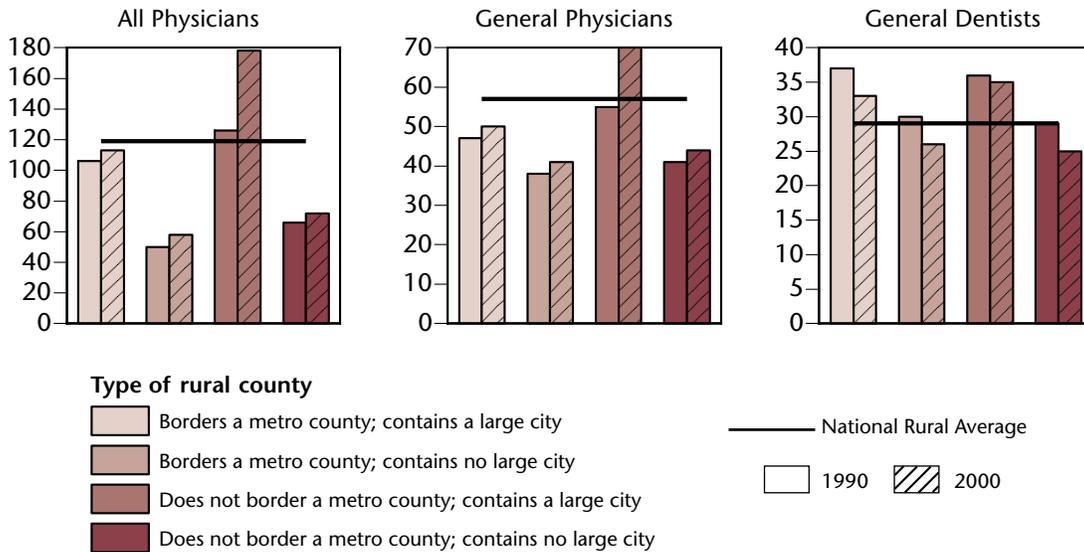
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	220	104	203	23.5	28	41	16
Generalist physicians	81	51	76	22.8	19	38	17
Medical specialists	38	10	34	52.3	26	31	13
Surgical specialists	45	24	42	7.3	39	30	27
General surgeons	9	8	9	-14.0	34	17	30
OB-GYNs	13	6	12	18.3	11	25	8
Other surgeons	23	10	21	13.1	47	37	39
Other specialists	62	21	56	33.1	31	40	20
Dentists	51	30	48	2.1	6	28	5
PAs	7	12	7	-8.8	45	31	43
Full-time RNs (hospital-based)	285	228	277	-5.4	27	21	25
Part-time RNs (hospital-based)	180	135	173	4.7	19	18	19

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	10	25	9	30
Population	541,995	470,851	427,356	437,383
Short-term general hospitals	18	21	14	22
Hospital beds/100,000 persons	447	339	390	334
% pop. in persistent poverty counties	0	0	14.0	4.9
Per capita income (\$)	23,551	22,843	23,019	20,819
% families in poverty	7.1	6.8	9.0	9.3

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	106	113	50	58	126	178	66	72
Generalist physicians	47	50	38	41	55	70	41	44
Medical specialists	6	11	1	3	10	23	3	4
Surgical specialists	30	30	7	7	37	49	14	13
General surgeons	11	9	4	4	11	12	8	7
OB-GYNs	6	8	2	1	7	13	3	3
Other surgeons	12	13	1	1	19	23	4	4
Other specialists	23	23	3	7	24	42	8	12
Dentists	37	33	30	26	36	35	29	25
PAs	9	8	7	12	11	17	0	11
Full-time RNs (hospital-based)	290	242	120	146	311	366	163	166
Part-time RNs (hospital-based)	163	184	47	83	118	180	70	88

INDIANA

 Metro County

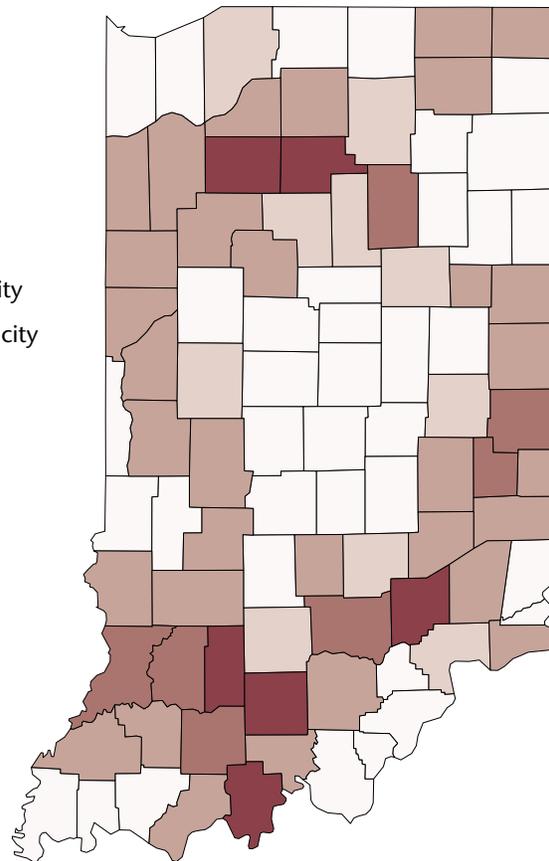
Rural Counties

 Borders a metro county; contains a large city

 Borders a metro county; contains no large city

 Does not border a metro county; contains a large city

 Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	4,389,903	1,690,582	6,080,485	9.7	17	13	14
% population > 65	11.9	13.7	12.4	-1.4	19	32	28
% population < 15	21.6	21.4	21.5	-1.8	22	13	18
Per capita income (\$)	28,238	23,518	26,926	16.0	36	15	29
% families in poverty	6.8	6.4	6.7	-15.7	30	42	37

Health Care Providers per 100,000 Population in 2000

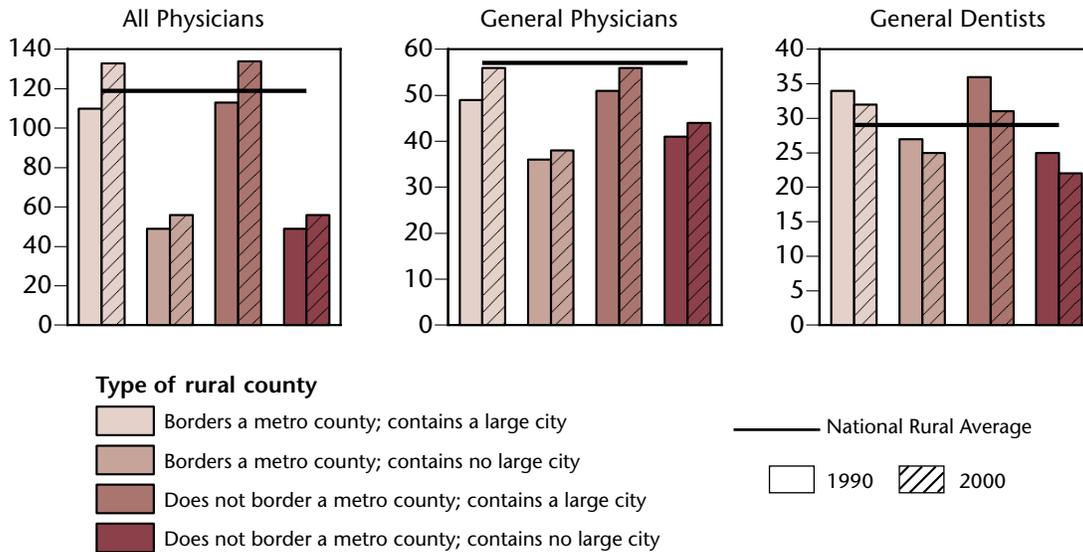
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	198	95	170	28.3	43	44	39
Generalist physicians	69	47	63	18.9	38	44	39
Medical specialists	34	9	27	78.9	35	36	30
Surgical specialists	44	19	37	14.9	43	41	45
General surgeons	9	6	8	-9.8	40	42	42
OB-GYNs	10	5	9	27.2	44	36	39
Other surgeons	25	8	21	22.8	40	43	42
Other specialists	57	22	48	44.6	39	37	34
Dentists	37	28	34	-3.2	37	31	35
PA's	5	2	5	-57.0	48	46	48
Full-time RNs (hospital-based)	329	180	288	-7.9	18	33	20
Part-time RNs (hospital-based)	226	100	191	54.4	12	29	12

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	10	32	7	6
Population	569,777	728,681	281,730	110,394
Short-term general hospitals	12	20	8	5
Hospital beds/100,000 persons	284	133	361	154
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	24,552	22,473	24,808	21,786
% families in poverty	6.3	6.2	7.3	6.8

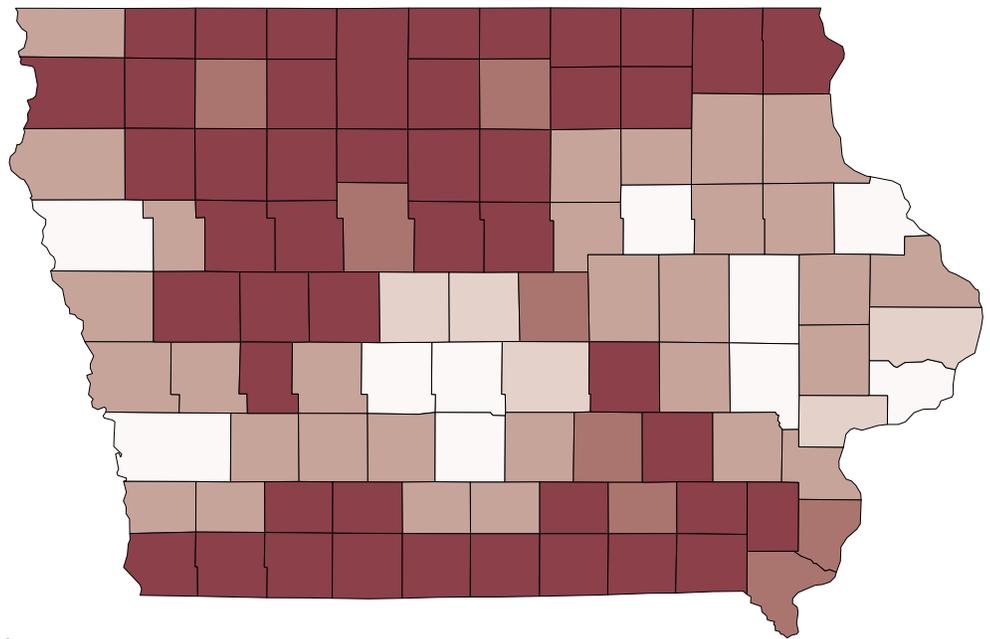
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	110	133	49	56	113	134	49	56
Generalist physicians	49	56	36	38	51	56	41	44
Medical specialists	6	15	1	3	7	17	0	2
Surgical specialists	30	33	6	7	29	29	4	5
General surgeons	9	9	4	3	10	9	4	3
OB-GYNs	7	8	1	2	6	6	0	1
Other surgeons	14	16	1	1	13	14	0	1
Other specialists	25	33	6	9	26	40	4	6
Dentists	34	32	27	25	36	31	25	22
PAs	7	2	8	2	3	4	0	2
Full-time RNs (hospital-based)	210	220	86	100	287	316	109	151
Part-time RNs (hospital-based)	96	118	54	54	101	191	44	72

IOWA



 Metro County

Rural Counties

-  Borders a metro county; contains a large city
-  Borders a metro county; contains no large city
-  Does not border a metro county; contains a large city
-  Does not border a metro county; contains no large city

2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,326,133	1,600,191	2,926,324	5.4	33	14	30
% population > 65	11.9	17.4	14.9	-2.9	18	4	4
% population < 15	21.0	20.2	20.6	-5.9	33	30	36
Per capita income (\$)	28,839	24,428	26,427	15.5	30	11	32
% families in poverty	5.8	6.2	6.0	-28.3	44	44	46

Health Care Providers per 100,000 Population in 2000

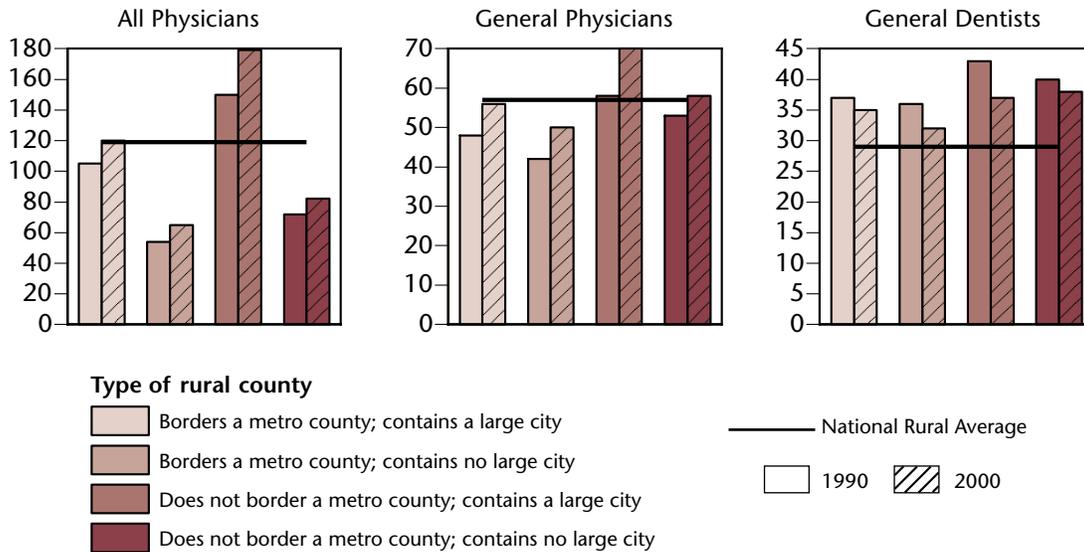
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	244	99	165	22.9	14	42	43
Generalist physicians	85	58	70	21.6	17	29	30
Medical specialists	48	10	27	44.1	13	34	32
Surgical specialists	51	17	33	7.9	26	46	50
General surgeons	10	6	8	-16.9	30	41	44
OB-GYNs	10	3	6	18.9	46	49	50
Other surgeons	31	8	19	18.8	17	44	48
Other specialists	72	19	43	54.2	12	42	45
Dentists	41	35	38	-7.3	27	18	26
PAs	19	16	17	81.4	18	22	21
Full-time RNs (hospital-based)	411	235	315	-0.2	6	19	14
Part-time RNs (hospital-based)	334	145	231	4.5	5	17	9

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	5	30	8	46
Population	235,289	490,353	282,154	592,395
Short-term general hospitals	7	28	9	50
Hospital beds/100,000 persons	421	277	433	435
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	26,101	23,892	24,997	23,937
% families in poverty	5.9	5.6	7.3	6.3

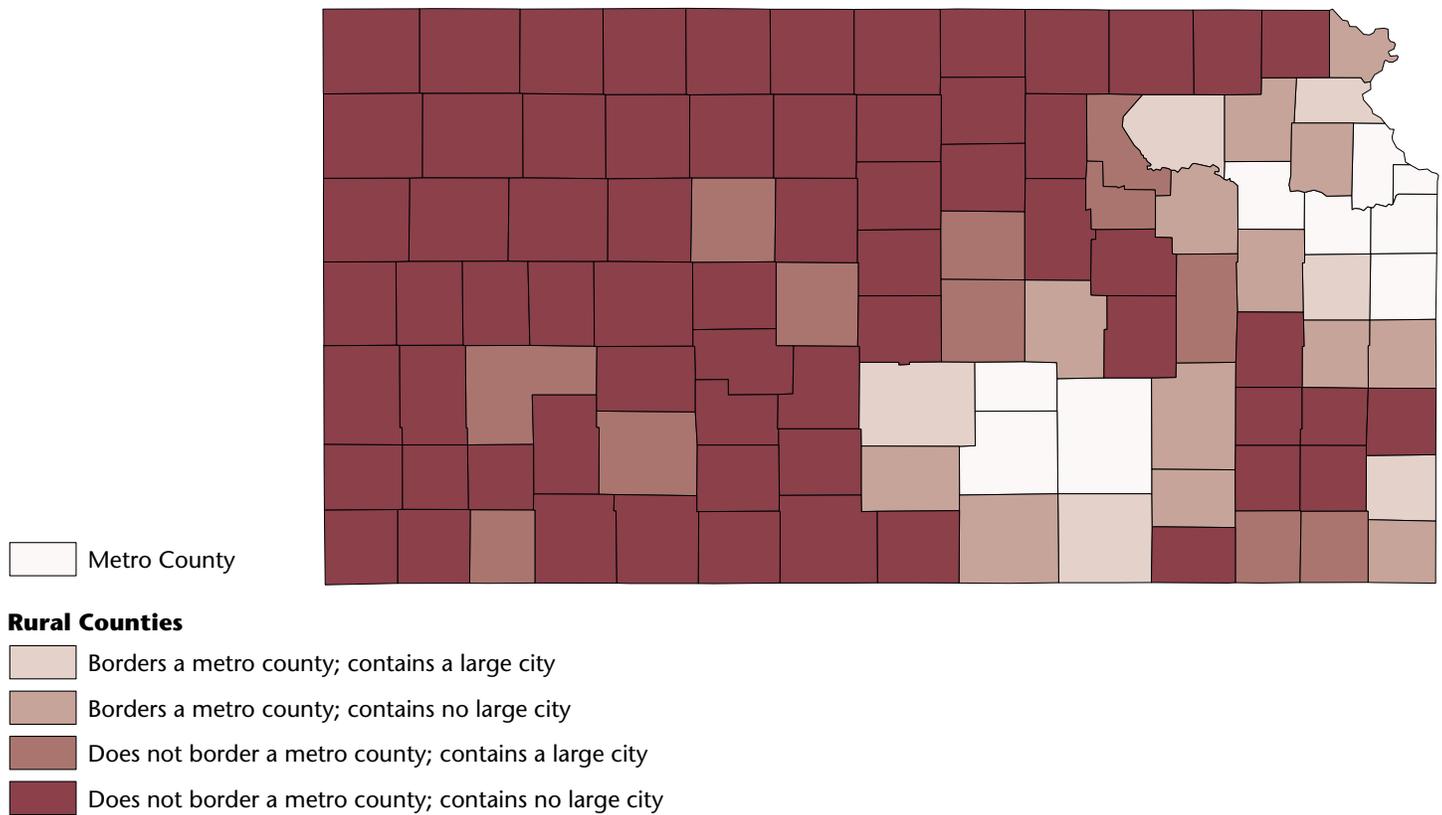
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	105	120	54	65	150	179	72	82
Generalist physicians	48	56	42	50	58	70	53	58
Medical specialists	11	17	1	4	12	21	3	6
Surgical specialists	25	26	5	5	47	47	9	11
General surgeons	6	6	4	3	12	9	7	7
OB-GYNs	5	7	0	1	9	11	1	0
Other surgeons	14	14	0	1	26	27	1	3
Other specialists	21	24	6	8	33	49	7	11
Dentists	37	35	36	32	43	37	40	38
PAAs	20	12	9	20	7	16	8	14
Full-time RNs (hospital-based)	215	226	110	138	318	441	168	221
Part-time RNs (hospital-based)	149	162	89	102	282	251	141	123

KANSAS



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,521,063	1,167,355	2,688,418	8.5	32	22	32
% population > 65	11.1	16.0	13.3	-4.2	31	9	17
% population < 15	22.5	21.1	21.9	-3.8	7	18	11
Per capita income (\$)	30,970	22,648	27,356	14.3	15	23	28
% families in poverty	5.6	8.0	6.7	-19.6	46	30	36

Health Care Providers per 100,000 Population in 2000

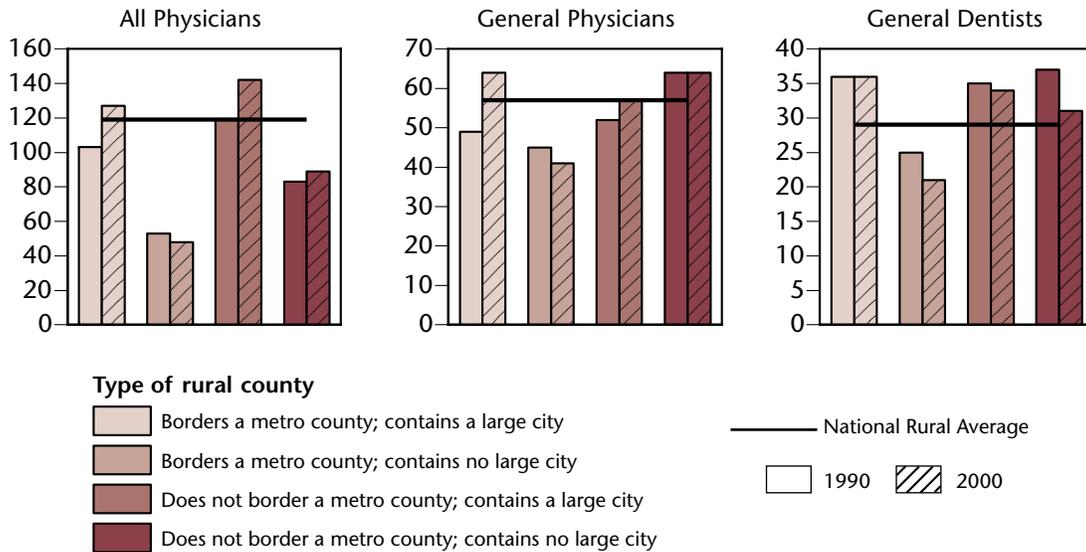
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	236	109	181	22.2	18	37	30
Generalist physicians	85	58	74	21.4	15	28	25
Medical specialists	39	9	26	44.3	25	38	36
Surgical specialists	47	24	37	9.9	35	35	46
General surgeons	9	8	9	-18.5	38	13	36
OB-GYNs	11	5	8	21.1	37	39	43
Other surgeons	28	11	20	23.6	32	35	43
Other specialists	71	21	50	34.5	14	38	30
Dentists	41	32	37	-7.1	28	25	28
PAs	17	18	17	76.3	22	17	20
Full-time RNs (hospital-based)	279	280	280	-1.0	29	6	24
Part-time RNs (hospital-based)	166	125	148	7.6	24	21	25

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	6	13	12	65
Population	199,090	162,128	420,166	385,971
Short-term general hospitals	9	10	20	69
Hospital beds/100,000 persons	425	294	387	848
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	22,478	21,394	23,157	22,708
% families in poverty	8.1	7.6	8.6	7.6

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

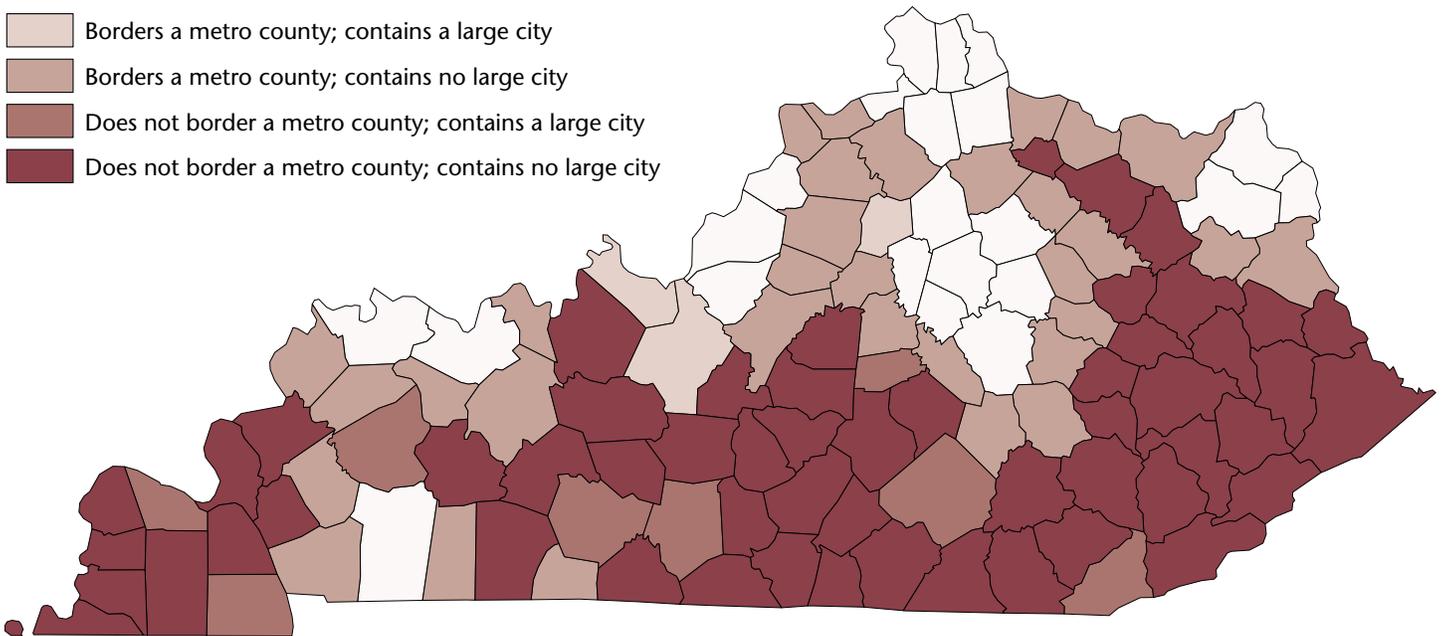
	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	103	127	53	48	119	142	83	89
Generalist physicians	49	64	45	41	52	57	64	64
Medical specialists	9	15	2	2	6	13	2	4
Surgical specialists	28	29	2	2	38	41	10	11
General surgeons	9	9	2	1	12	11	7	8
OB-GYNs	6	5	0	0	8	10	1	1
Other surgeons	13	15	0	1	17	20	2	3
Other specialists	16	23	4	4	23	36	7	12
Dentists	36	36	25	21	35	34	37	31
PAs	15	17	3	11	5	16	5	22
Full-time RNs (hospital-based)	180	264	72	96	334	348	205	291
Part-time RNs (hospital-based)	140	154	42	41	126	139	106	130

KENTUCKY

 Metro County

Rural Counties

-  Borders a metro county; contains a large city
-  Borders a metro county; contains no large city
-  Does not border a metro county; contains a large city
-  Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,973,102	2,068,667	4,041,769	9.7	29	5	25
% population > 65	11.8	13.2	12.5	-1.4	20	38	27
% population < 15	20.7	20.1	20.4	-5.0	40	31	41
Per capita income (\$)	28,285	20,077	24,084	18.1	34	39	39
% families in poverty	8.9	16.0	12.7	-20.8	16	5	5

Health Care Providers per 100,000 Population in 2000

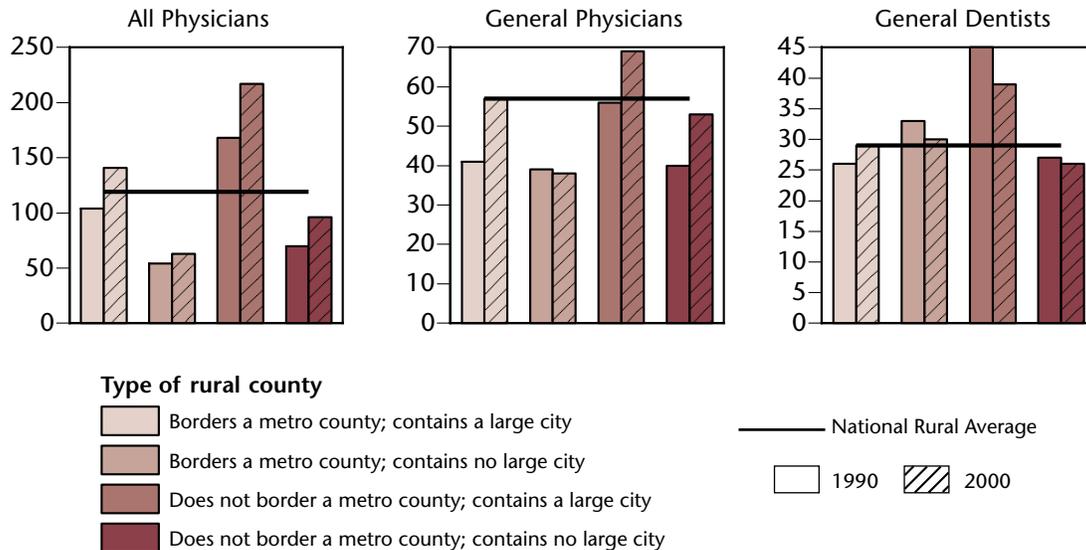
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	233	115	173	27.2	20	26	35
Generalist physicians	74	53	63	22.1	31	36	38
Medical specialists	40	13	26	65.0	23	20	34
Surgical specialists	56	25	40	13.4	13	25	35
General surgeons	12	8	10	-3.7	13	23	19
OB-GYNs	11	7	9	15.3	34	20	37
Other surgeons	33	11	22	22.6	10	34	38
Other specialists	69	25	46	36.1	16	32	37
Dentists	45	30	37	-5.9	19	29	27
PAs	17	9	13	39.2	23	35	30
Full-time RNs (hospital-based)	400	278	338	8.8	9	7	6
Part-time RNs (hospital-based)	174	78	125	39.1	22	40	33

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	3	32	8	55
Population	168,210	484,767	390,739	1,024,951
Short-term general hospitals	3	18	11	39
Hospital beds/100,000 persons	276	245	701	332
% pop. in persistent poverty counties	0	31.2	22.1	71.9
Per capita income (\$)	24,047	20,278	23,231	18,128
% families in poverty	8.0	12.8	13.0	19.9

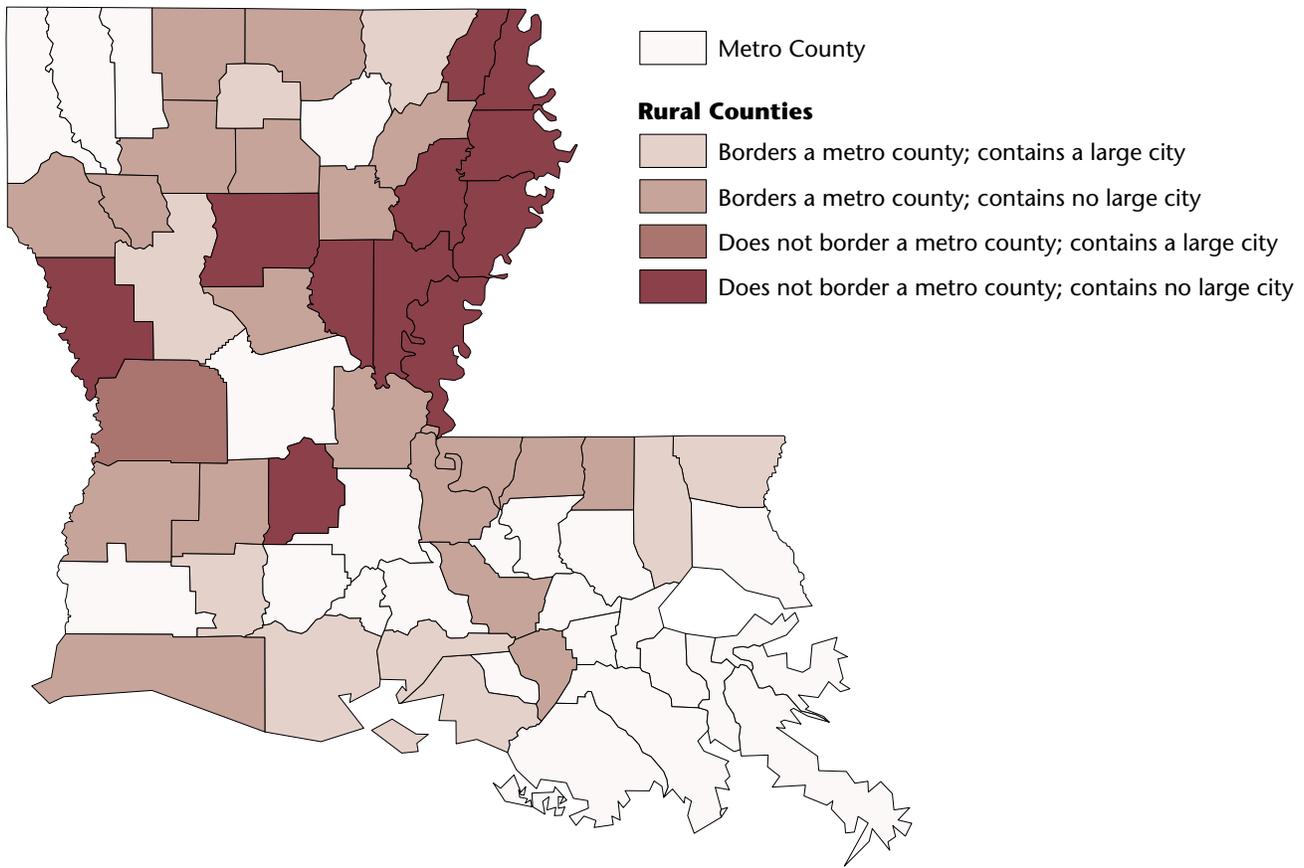
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	104	141	54	63	168	217	70	96
Generalist physicians	41	57	39	38	56	69	40	53
Medical specialists	8	17	1	5	17	34	3	8
Surgical specialists	27	33	9	10	55	62	15	17
General surgeons	7	8	5	4	13	16	7	6
OB-GYNs	7	11	3	3	14	16	3	5
Other surgeons	13	14	1	3	28	30	5	6
Other specialists	26	36	6	11	38	56	11	18
Dentists	26	29	33	30	45	39	27	26
PAs	1	20	6	6	18	10	8	8
Full-time RNs (hospital-based)	238	282	98	148	425	525	159	244
Part-time RNs (hospital-based)	132	128	38	51	175	180	32	44

LOUISIANA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,370,210	1,098,766	4,468,976	5.9	23	25	22
% population > 65	11.2	12.6	11.6	4.1	29	41	39
% population < 15	22.4	22.4	22.4	-8.6	8	7	9
Per capita income (\$)	24,545	18,629	23,090	15.2	50	46	45
% families in poverty	14.6	19.2	15.8	-18.7	1	1	2

Health Care Providers per 100,000 Population in 2000

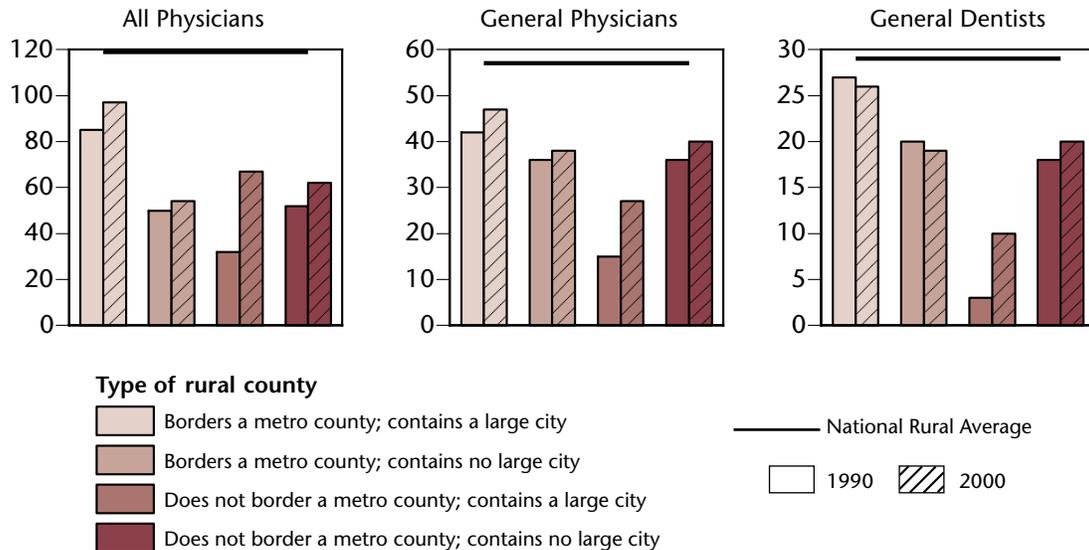
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	222	74	186	27.0	26	49	29
Generalist physicians	66	42	60	23.7	42	49	45
Medical specialists	38	6	30	65.0	27	47	20
Surgical specialists	61	16	50	9.9	8	48	8
General surgeons	12	5	10	-4.9	17	47	17
OB-GYNs	14	5	11	9.5	7	41	12
Other surgeons	35	7	28	16.5	6	48	7
Other specialists	62	11	49	38.4	32	49	31
Dentists	37	22	33	1.0	38	44	38
PA's	7	4	6	-40.8	44	45	45
Full-time RNs (hospital-based)	400	188	348	21.3	10	31	5
Part-time RNs (hospital-based)	134	64	117	70.0	37	44	37

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	9	19	1	11
Population	469,132	392,523	52,531	184,580
Short-term general hospitals	16	19	2	10
Hospital beds/100,000 persons	288	221	223	448
% pop. in persistent poverty counties	54.8	89.1	0	100.0
Per capita income (\$)	19,184	18,653	20,157	16,731
% families in poverty	19.2	18.6	12.2	22.6

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	85	97	50	54	32	67	52	62
Generalist physicians	42	47	36	38	15	27	36	40
Medical specialists	2	8	1	3	3	13	1	5
Surgical specialists	26	26	8	7	8	15	8	10
General surgeons	8	6	4	3	3	2	4	5
OB-GYNs	8	7	3	2	2	4	1	3
Other surgeons	10	13	2	2	3	10	2	2
Other specialists	14	16	6	7	6	15	7	8
Dentists	27	26	20	19	3	10	18	20
PAs	0	2	4	1	19	32	7	3
Full-time RNs (hospital-based)	166	227	94	123	158	274	141	205
Part-time RNs (hospital-based)	57	72	24	55	23	38	30	73

MAINE

 Metro County

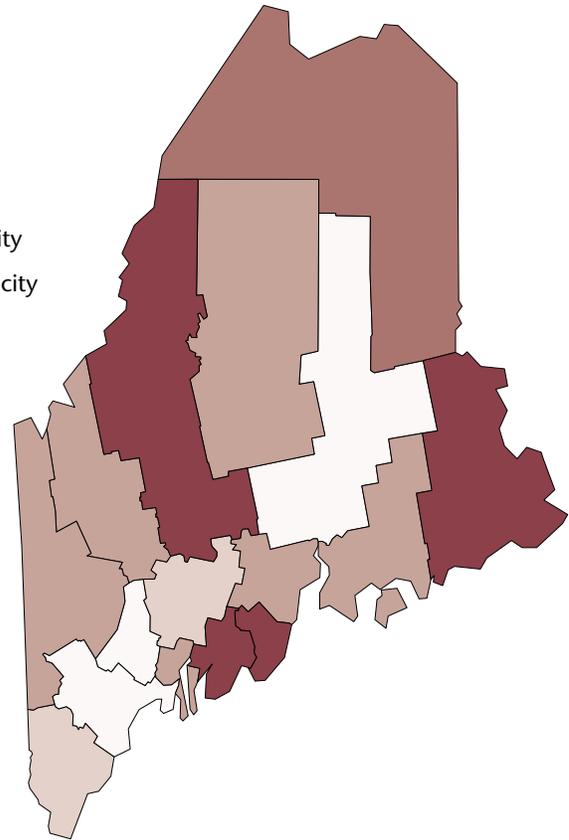
Rural Counties

 Borders a metro county; contains a large city

 Borders a metro county; contains no large city

 Does not border a metro county; contains a large city

 Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	514,324	760,599	1,274,923	3.8	43	33	40
% population > 65	13.5	15.0	14.4	8.1	8	18	7
% population < 15	19.2	19.4	19.3	-8.5	48	41	48
Per capita income (\$)	27,926	23,658	25,379	10.3	37	14	36
% families in poverty	7.0	8.3	7.8	-2.3	29	28	28

Health Care Providers per 100,000 Population in 2000

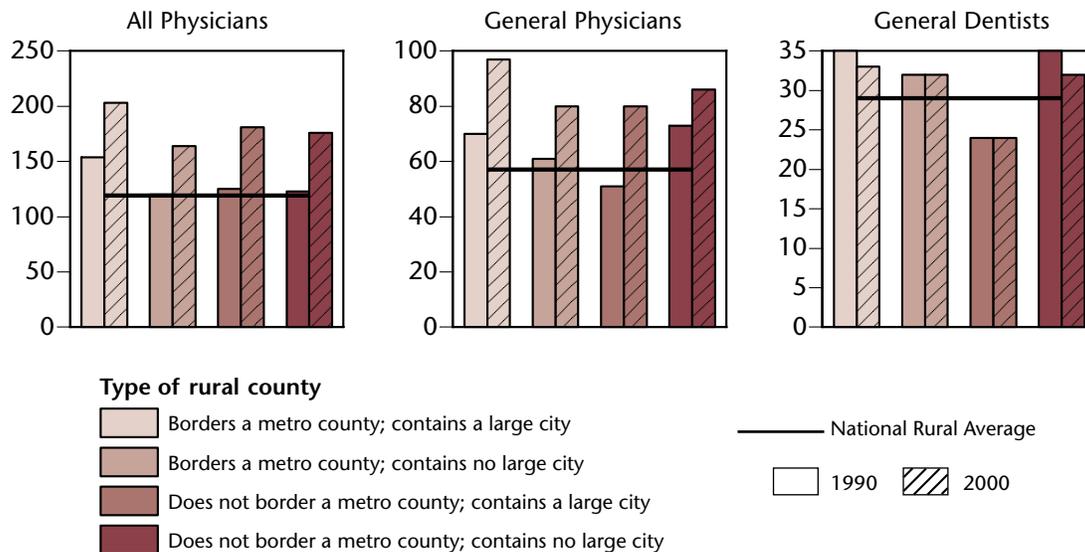
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	323	184	240	40.4	2	5	9
Generalist physicians	114	88	99	38.9	1	2	1
Medical specialists	58	16	33	39.6	2	13	14
Surgical specialists	61	35	46	17.6	7	10	15
General surgeons	14	10	11	3.6	3	6	8
OB-GYNs	13	8	10	19.4	14	12	29
Other surgeons	35	18	25	24.5	7	12	16
Other specialists	101	46	68	79.4	2	6	8
Dentists	42	32	36	-0.6	24	24	31
PAs	37	25	30	160.7	2	5	4
Full-time RNs (hospital-based)	343	262	295	9.0	15	10	18
Part-time RNs (hospital-based)	283	196	231	12.9	7	5	8

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	2	6	1	4
Population	303,856	224,742	73,938	158,063
Short-term general hospitals	6	10	4	7
Hospital beds/100,000 persons	311	204	486	262
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	25,303	22,889	20,837	22,908
% families in poverty	6.9	8.7	9.8	9.6

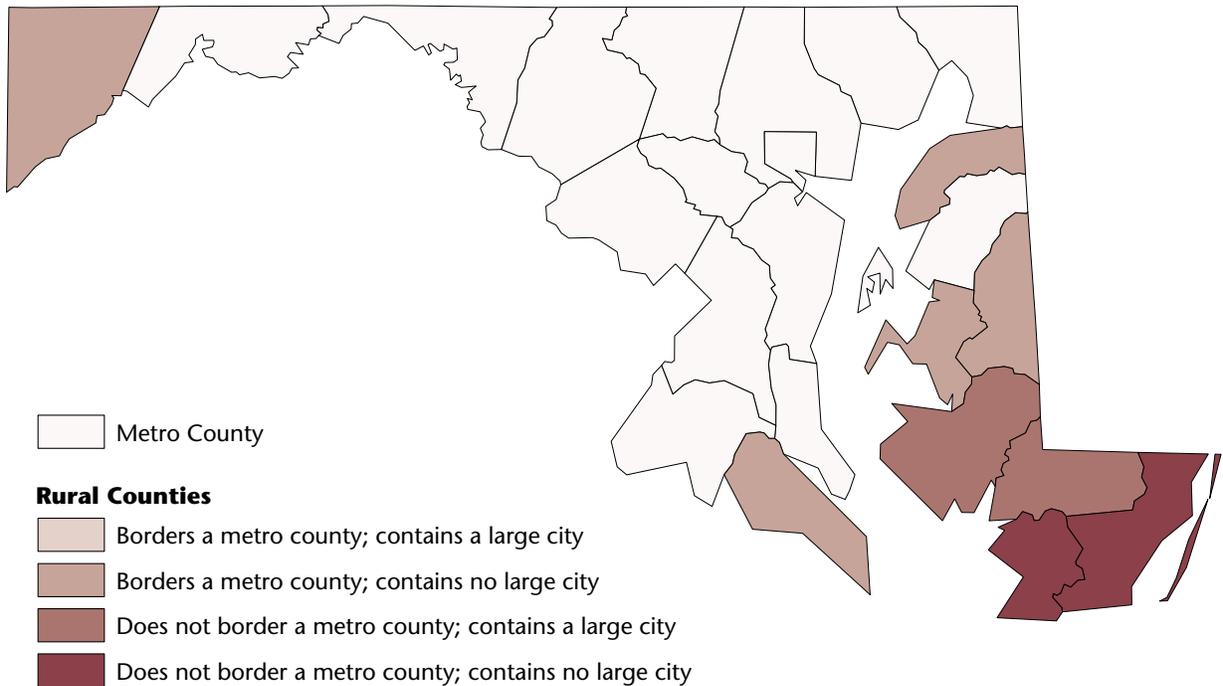
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	154	203	120	164	125	181	123	176
Generalist physicians	70	97	61	80	51	80	73	86
Medical specialists	20	23	7	10	7	7	4	16
Surgical specialists	34	33	27	36	37	45	26	35
General surgeons	9	8	10	10	12	16	9	8
OB-GYNs	8	7	5	8	9	11	5	8
Other surgeons	17	18	12	18	16	18	12	20
Other specialists	30	50	25	42	30	49	18	40
Dentists	35	33	32	32	24	24	35	32
PAs	20	19	8	31	6	27	9	28
Full-time RNs (hospital-based)	291	270	222	201	211	436	206	254
Part-time RNs (hospital-based)	161	238	94	182	145	254	55	108

MARYLAND



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	4,911,040	385,446	5,296,486	10.8	14	40	19
% population > 65	11.1	14.5	11.3	4.5	33	23	40
% population < 15	21.6	20.0	21.5	3.9	23	36	19
Per capita income (\$)	30,495	25,927	30,163	13.3	19	7	12
% families in poverty	5.9	8.0	6.1	1.4	39	31	45

Health Care Providers per 100,000 Population in 2000

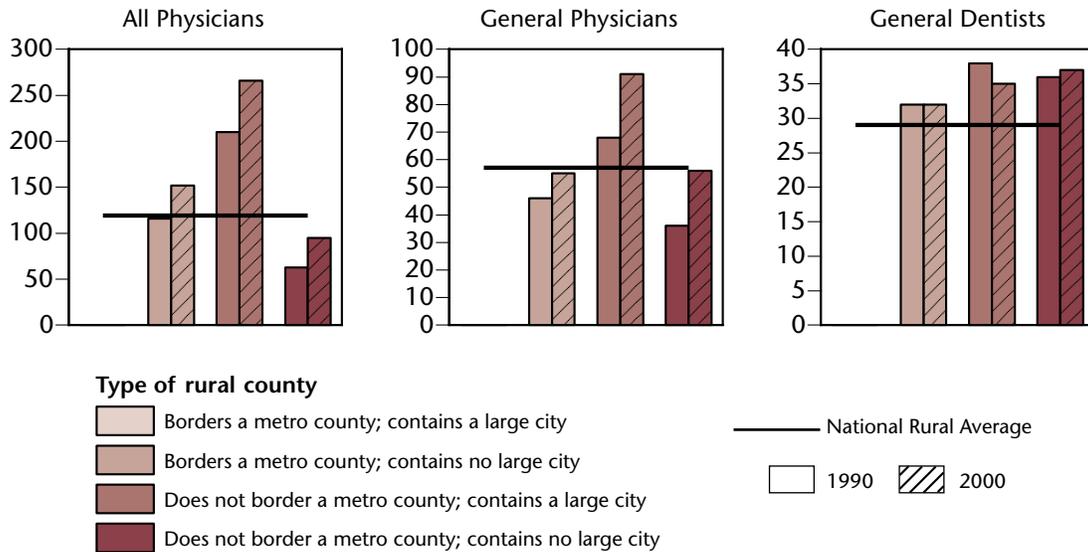
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	273	176	266	25.9	7	6	3
Generalist physicians	90	66	88	28.8	10	13	7
Medical specialists	48	27	46	55.2	10	3	5
Surgical specialists	60	42	59	8.4	10	4	2
General surgeons	12	10	12	-6.6	10	4	4
OB-GYNs	15	11	15	8.1	3	1	3
Other surgeons	33	20	32	15.5	11	6	2
Other specialists	80	43	78	26.3	8	9	3
Dentists	47	34	46	-1.2	14	20	10
PAAs	21	12	20	47.9	13	30	12
Full-time RNs (hospital-based)	236	204	234	-6.4	38	26	38
Part-time RNs (hospital-based)	163	98	158	21.8	26	30	23

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	5	2	2
Population	...	198,838	115,318	71,290
Short-term general hospitals	...	4	2	2
Hospital beds/100,000 persons	...	182	338	184
% pop. in persistent poverty counties	...	0	0	0
Per capita income (\$)	...	28,476	23,371	22,952
% families in poverty	...	6.9	9.1	9.4

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

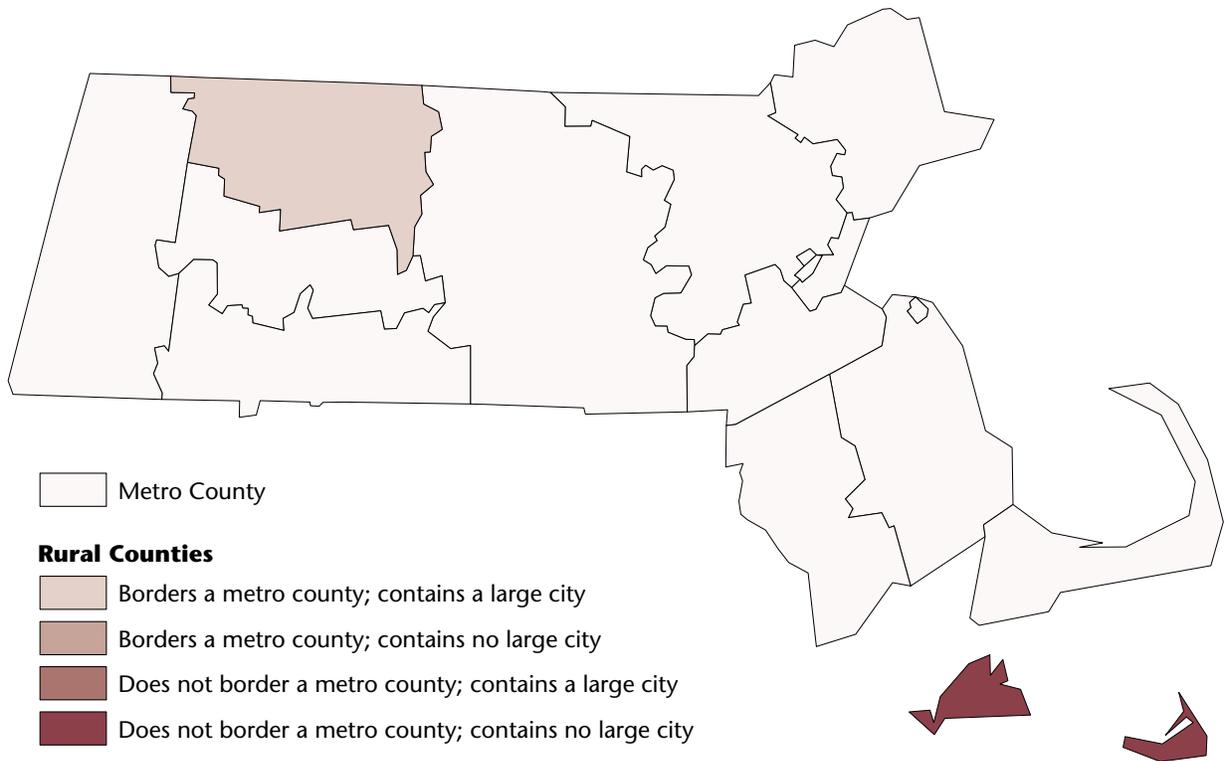


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	116	152	210	266	63	95
Generalist physicians	46	55	68	91	36	56
Medical specialists	11	22	24	50	2	6
Surgical specialists	35	38	68	67	7	10
General surgeons	11	9	21	17	3	3
OB-GYNs	9	11	15	14	3	6
Other surgeons	15	18	32	36	0	1
Other specialists	25	38	47	62	19	25
Dentists	32	32	38	35	36	37
PAs	3	7	34	22	12	11
Full-time RNs (hospital-based)	205	176	307	291	42	142
Part-time RNs (hospital-based)	120	91	125	147	2	39

... No counties of this type

MASSACHUSETTS



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	6,253,055	96,042	6,349,097	5.5	10	48	13
% population > 65	13.5	13.9	13.5	-0.5	7	30	12
% population < 15	19.9	18.7	19.8	4.8	44	45	44
Per capita income (\$)	37,825	30,098	37,708	23.3	2	3	2
% families in poverty	6.7	6.0	6.7	-1.2	32	45	39

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	282	138	280	32.9	4	16	1
Generalist physicians	91	61	90	37.4	8	17	5
Medical specialists	50	15	50	68.9	7	16	3
Surgical specialists	56	23	55	11.1	14	36	4
General surgeons	12	8	12	-8.7	16	12	5
OB-GYNs	13	5	13	26.7	13	34	6
Other surgeons	31	9	31	14.7	19	39	3
Other specialists	90	40	89	33.6	3	12	1
Dentists	48	40	48	-5.6	9	10	6
PAs	14	12	14	87.6	29	27	28
Full-time RNs (hospital-based)	232	87	229	-9.8	39	47	39
Part-time RNs (hospital-based)	274	203	273	26.9	8	3	4

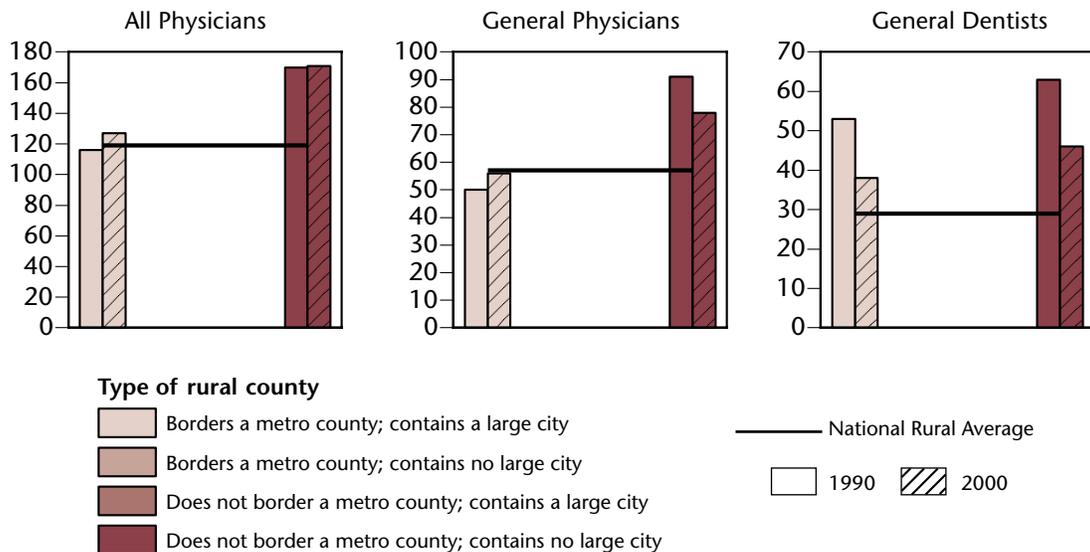
See page 155 for data sources and explanatory notes.

MASSACHUSETTS

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	1	0	0	2
Population	71,535	...	...	24,507
Short-term general hospitals	1	...	...	2
Hospital beds/100,000 persons	119	...	...	180
% pop. in persistent poverty counties	0	...	...	0
Per capita income (\$)	27,577	...	...	37,458
% families in poverty	6.5	...	...	4.3

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

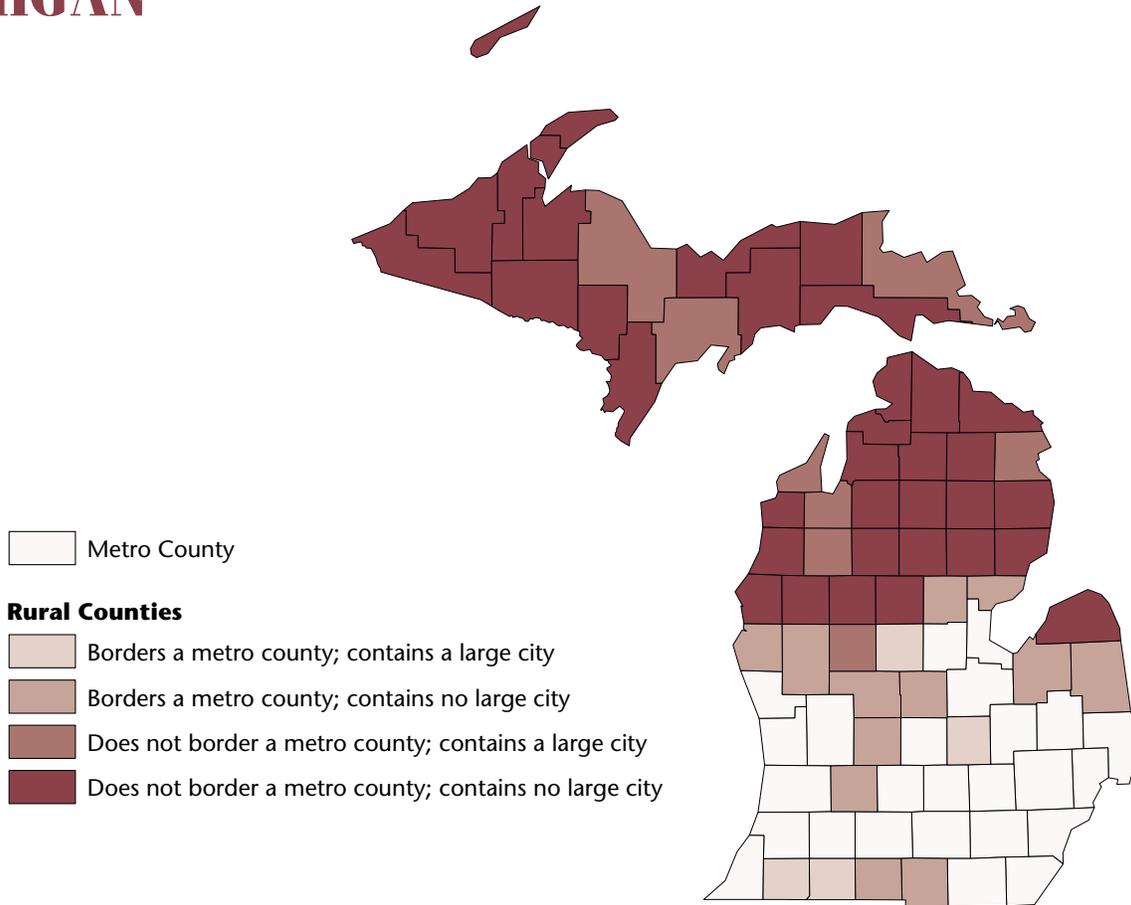


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	116	127	...	...	...	...	170	171
Generalist physicians	50	56	...	...	...	...	91	78
Medical specialists	7	17	...	...	...	...	0	8
Surgical specialists	27	20	...	...	...	...	40	33
General surgeons	7	6	...	...	...	...	23	16
OB-GYNs	6	4	...	...	...	...	11	8
Other surgeons	14	10	...	...	...	...	6	8
Other specialists	31	35	...	...	...	...	40	53
Dentists	53	38	...	...	...	...	63	46
PAs	7	8	...	...	...	...	17	24
Full-time RNs (hospital-based)	90	50	...	...	...	...	190	196
Part-time RNs (hospital-based)	219	222	...	...	...	...	0	147

... No counties of this type

MICHIGAN



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	8,169,466	1,768,978	9,938,444	6.9	9	11	8
% population > 65	11.7	14.9	12.3	2.9	22	19	30
% population < 15	22.2	20.0	21.8	-1.8	12	34	14
Per capita income (\$)	30,774	21,501	29,124	16.2	17	31	16
% families in poverty	7.4	7.3	7.4	-27.5	25	39	32

Health Care Providers per 100,000 Population in 2000

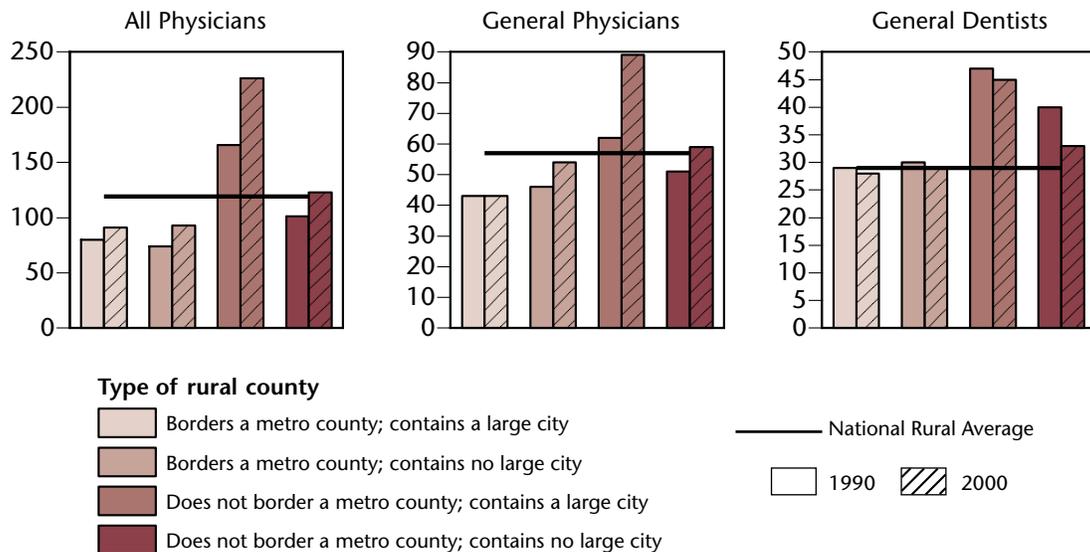
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	230	130	212	25.0	21	20	12
Generalist physicians	87	61	83	26.6	12	19	10
Medical specialists	48	20	43	38.0	11	8	8
Surgical specialists	43	25	40	7.9	44	27	37
General surgeons	9	8	9	-11.9	39	19	35
OB-GYNs	12	6	11	11.7	20	27	15
Other surgeons	22	11	20	17.1	48	31	46
Other specialists	70	34	64	71.4	15	17	10
Dentists	46	34	44	-8.7	16	21	15
PAAs	16	17	16	68.2	24	20	22
Full-time RNs (hospital-based)	279	175	260	0.3	30	35	31
Part-time RNs (hospital-based)	169	161	168	2.1	23	12	21

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	4	12	8	34
Population	248,564	534,990	342,821	642,603
Short-term general hospitals	5	17	9	28
Hospital beds/100,000 persons	148	204	344	319
% pop. in persistent poverty counties	0	0	0	1.8
Per capita income (\$)	21,958	20,720	23,450	20,936
% families in poverty	6.9	7.0	6.4	8.2

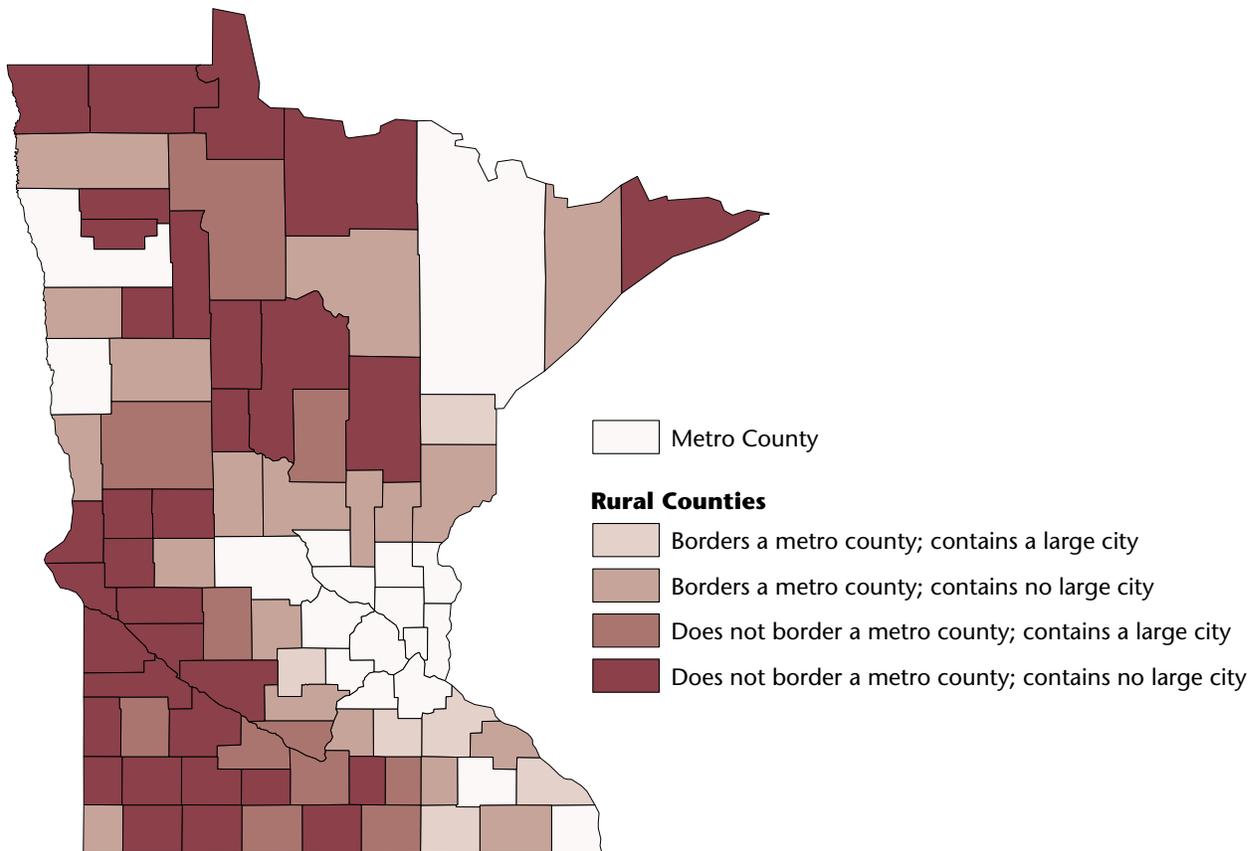
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	80	91	74	93	166	226	101	123
Generalist physicians	43	43	46	54	62	89	51	59
Medical specialists	8	13	8	14	23	40	9	19
Surgical specialists	18	19	14	15	39	46	23	24
General surgeons	7	6	7	6	10	11	9	8
OB-GYNs	5	6	3	4	8	9	5	6
Other surgeons	6	8	4	5	21	26	9	10
Other specialists	11	22	7	20	41	68	18	32
Dentists	29	28	30	29	47	45	40	33
PAs	7	19	8	14	10	26	10	14
Full-time RNs (hospital-based)	113	144	107	136	189	208	175	201
Part-time RNs (hospital-based)	72	104	82	93	345	354	136	137

MINNESOTA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,463,360	1,456,119	4,919,479	12.4	22	17	21
% population > 65	10.2	16.5	12.1	-3.4	42	7	32
% population < 15	22.0	20.5	21.6	-5.3	15	25	17
Per capita income (\$)	35,218	24,135	31,937	21.2	6	13	8
% families in poverty	4.5	6.3	5.1	-30.2	49	43	49

Health Care Providers per 100,000 Population in 2000

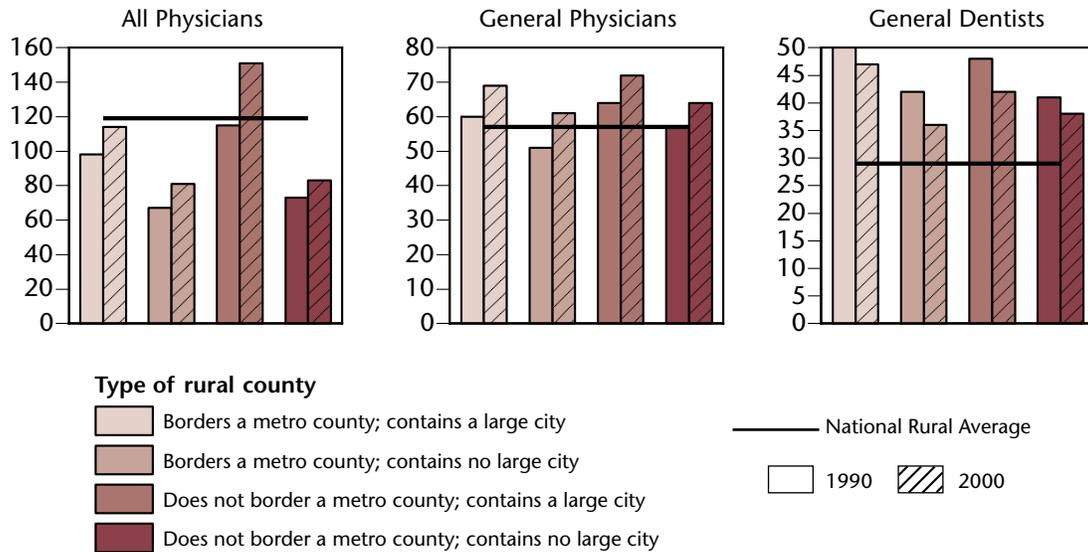
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	234	107	196	24.7	19	38	22
Generalist physicians	86	66	80	21.4	14	12	13
Medical specialists	40	6	30	50.1	22	46	21
Surgical specialists	47	19	39	8.8	38	43	40
General surgeons	8	6	8	-15.2	44	40	46
OB-GYNs	10	4	8	12.0	45	46	44
Other surgeons	29	9	23	18.7	26	41	32
Other specialists	64	18	50	34.5	26	44	26
Dentists	47	40	45	-13.0	12	8	11
PAs	12	11	12	16.8	33	32	33
Full-time RNs (hospital-based)	157	130	149	-20.1	50	46	50
Part-time RNs (hospital-based)	349	244	318	16.1	4	1	1

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	6	19	11	33
Population	255,949	374,625	419,225	406,320
Short-term general hospitals	11	23	17	41
Hospital beds/100,000 persons	395	503	409	588
% pop. in persistent poverty counties	0	0	0	3.4
Per capita income (\$)	25,378	22,402	25,434	23,611
% families in poverty	4.6	6.6	6.5	7.0

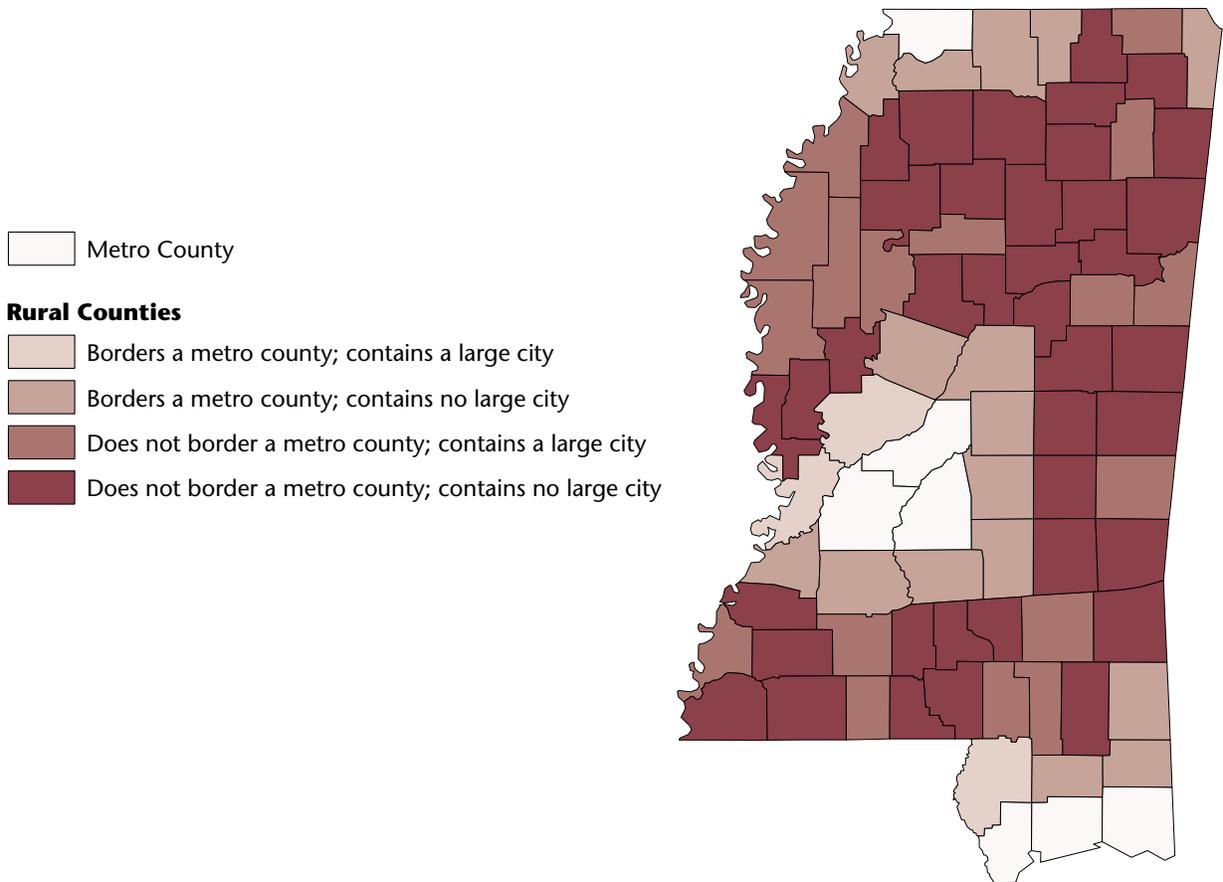
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	98	114	67	81	115	151	73	83
Generalist physicians	60	69	51	61	64	72	57	64
Medical specialists	4	6	1	2	4	13	0	2
Surgical specialists	19	22	9	11	29	33	10	10
General surgeons	8	6	5	4	8	9	6	5
OB-GYNs	4	6	1	3	5	6	2	2
Other surgeons	8	10	2	5	16	18	3	3
Other specialists	14	21	6	9	17	35	6	7
Dentists	50	47	42	36	48	42	41	38
PAs	2	9	5	11	5	12	1	12
Full-time RNs (hospital-based)	101	114	110	106	129	137	133	156
Part-time RNs (hospital-based)	154	251	92	167	238	302	122	253

MISSISSIPPI



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	911,988	1,932,670	2,844,658	10.5	37	6	31
% population > 65	10.5	12.8	12.1	-3.3	40	39	34
% population < 15	22.6	22.5	22.5	-6.7	6	6	7
Per capita income (\$)	24,972	18,971	20,894	20.5	46	45	50
% families in poverty	11.2	18.2	16.0	-20.9	5	3	1

Health Care Providers per 100,000 Population in 2000

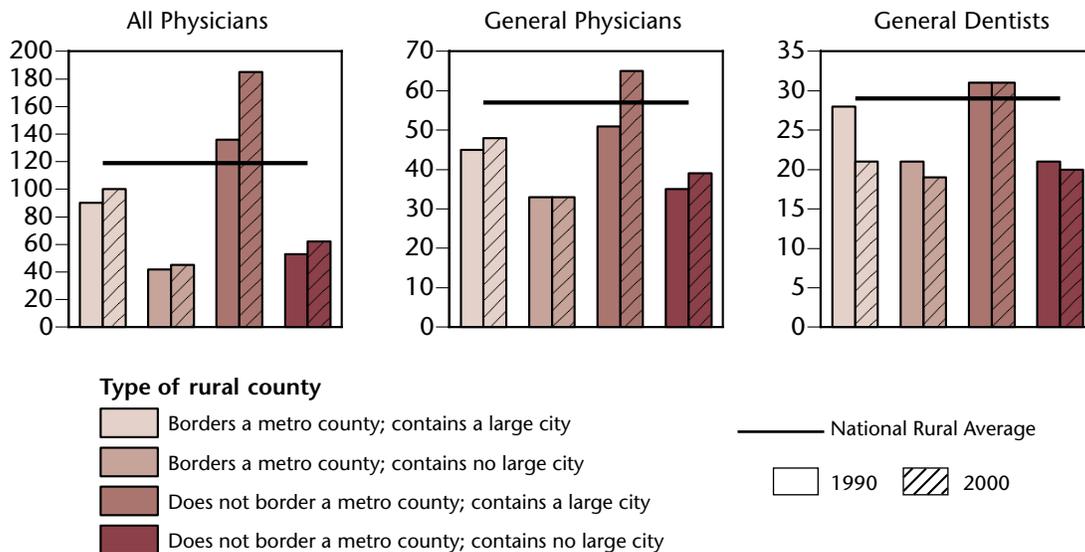
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	209	113	144	28.2	37	31	50
Generalist physicians	62	50	53	18.6	46	41	50
Medical specialists	34	13	20	73.3	36	18	47
Surgical specialists	55	29	37	15.2	15	20	44
General surgeons	11	7	8	-3.0	21	32	37
OB-GYNs	13	7	9	16.5	9	19	35
Other surgeons	32	14	20	24.1	15	19	45
Other specialists	63	22	36	44.1	28	35	50
Dentists	33	24	27	-2.8	42	41	48
PAs	3	0	1	-68.4	49	49	50
Full-time RNs (hospital-based)	518	289	363	28.0	2	4	3
Part-time RNs (hospital-based)	160	90	113	35.3	27	33	38

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	3	16	17	39
Population	126,414	317,886	805,851	682,519
Short-term general hospitals	5	13	24	38
Hospital beds/100,000 persons	555	219	579	454
% pop. in persistent poverty counties	60.7	88.0	73.4	81.8
Per capita income (\$)	20,350	17,332	20,590	17,566
% families in poverty	17.3	18.1	18.5	18.1

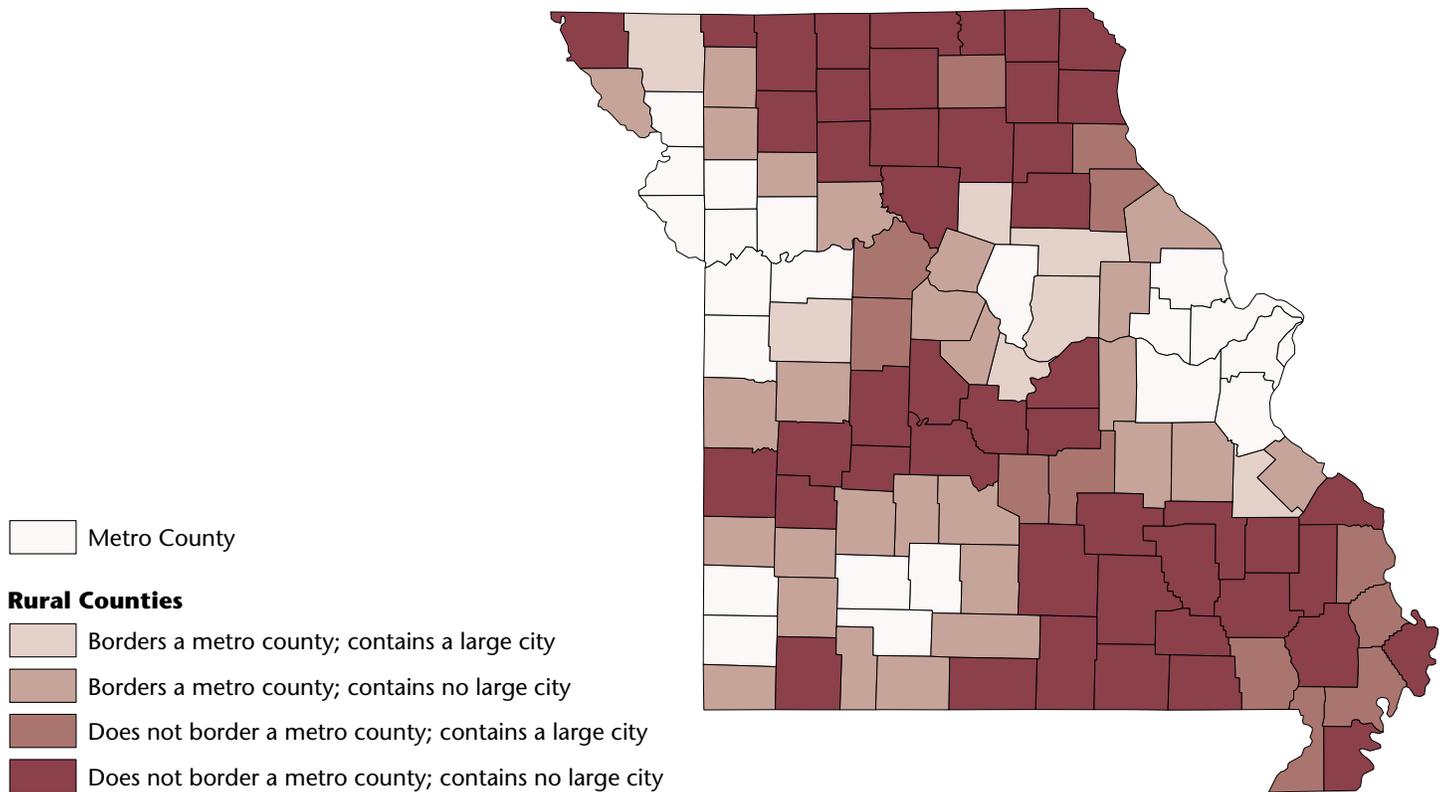
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	90	100	42	45	136	185	53	62
Generalist physicians	45	48	33	33	51	65	35	39
Medical specialists	4	11	0	2	13	26	2	4
Surgical specialists	29	23	4	5	46	54	10	11
General surgeons	7	6	4	3	11	11	5	5
OB-GYNs	10	9	0	0	11	13	3	3
Other surgeons	12	9	0	1	24	30	2	4
Other specialists	12	17	4	4	27	43	6	8
Dentists	28	21	21	19	31	31	21	20
PAs	0	1	0	0	7	0	3	0
Full-time RNs (hospital-based)	179	291	80	83	371	484	141	156
Part-time RNs (hospital-based)	62	107	32	39	103	137	42	56

MISSOURI



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,794,801	1,800,410	5,595,211	9.4	19	10	17
% population > 65	12.4	15.7	13.5	-3.8	15	12	13
% population < 15	21.5	20.3	21.1	-2.6	24	28	24
Per capita income (\$)	27,906	20,499	25,522	18.4	38	37	35
% families in poverty	7.3	11.2	8.6	-15.4	26	17	21

Health Care Providers per 100,000 Population in 2000

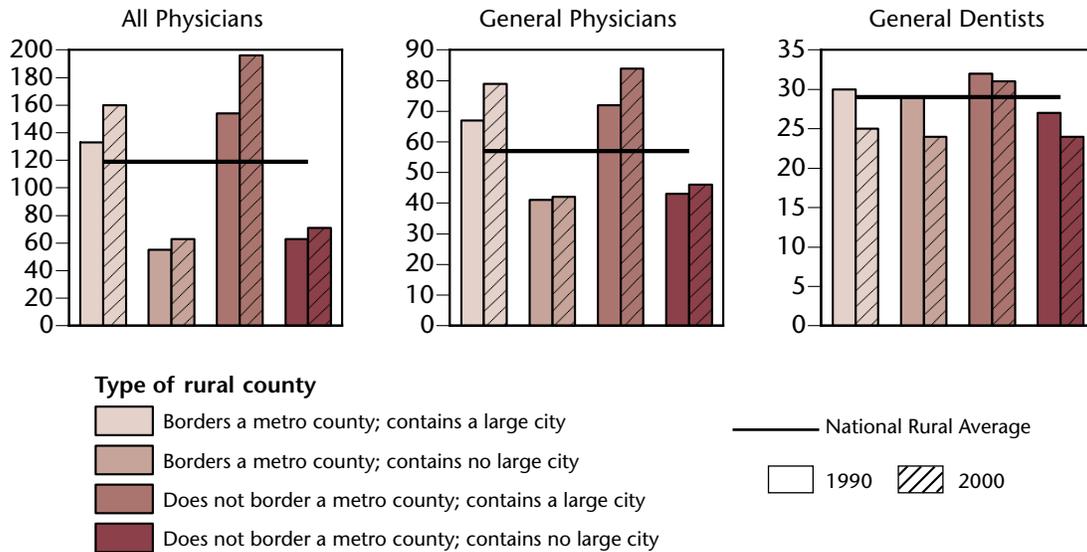
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	239	112	198	19.1	17	36	21
Generalist physicians	79	59	72	15.2	24	26	26
Medical specialists	47	18	38	35.3	14	9	10
Surgical specialists	54	18	43	6.4	21	45	26
General surgeons	11	6	9	-13.7	20	44	25
OB-GYNs	13	4	10	6.2	16	43	25
Other surgeons	31	8	23	17.4	23	45	27
Other specialists	69	26	55	47.9	17	29	21
Dentists	40	26	35	-10.9	30	38	32
PAs	6	4	5	-59.6	46	43	47
Full-time RNs (hospital-based)	381	220	329	6.2	11	23	8
Part-time RNs (hospital-based)	228	88	183	0.2	11	34	16

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	7	27	12	47
Population	288,490	485,156	409,938	616,826
Short-term general hospitals	9	14	12	26
Hospital beds/100,000 persons	315	150	469	222
% pop. in persistent poverty counties	0	15.7	22.9	36.6
Per capita income (\$)	22,356	19,265	22,591	19,210
% families in poverty	8.5	11.0	11.3	12.5

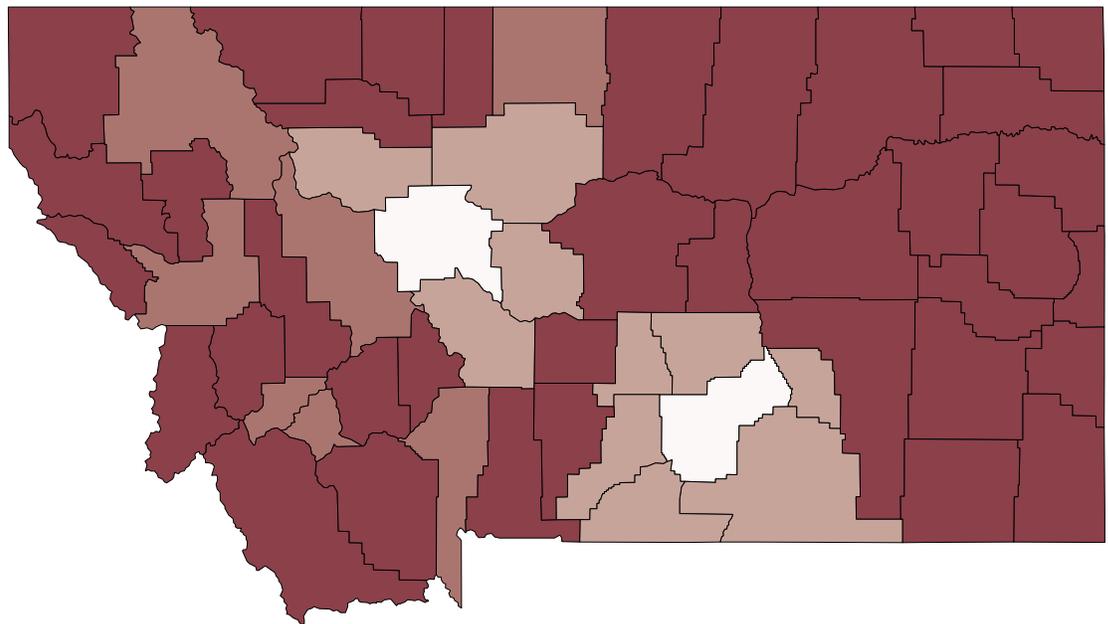
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	133	160	55	63	154	196	63	71
Generalist physicians	67	79	41	42	72	84	43	46
Medical specialists	27	30	4	8	26	37	4	9
Surgical specialists	25	31	5	5	32	39	9	9
General surgeons	9	8	4	3	10	10	4	4
OB-GYNs	8	9	1	0	8	9	2	2
Other surgeons	8	14	1	2	14	20	2	2
Other specialists	14	38	5	13	22	53	7	12
Dentists	30	25	29	24	32	31	27	24
PAs	10	4	22	3	14	7	8	2
Full-time RNs (hospital-based)	238	298	83	125	316	402	99	138
Part-time RNs (hospital-based)	128	156	39	52	165	141	35	51

MONTANA



Metro County

Rural Counties

- Borders a metro county; contains a large city
- Borders a metro county; contains no large city
- Does not border a metro county; contains a large city
- Does not border a metro county; contains no large city

2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	209,709	692,486	902,195	12.9	48	35	44
% population > 65	13.6	13.4	13.4	0.6	6	37	14
% population < 15	21.1	20.5	20.6	-12.1	30	26	35
Per capita income (\$)	25,522	21,606	22,516	10.1	42	30	46
% families in poverty	9.2	10.9	10.5	-12.9	13	19	13

Health Care Providers per 100,000 Population in 2000

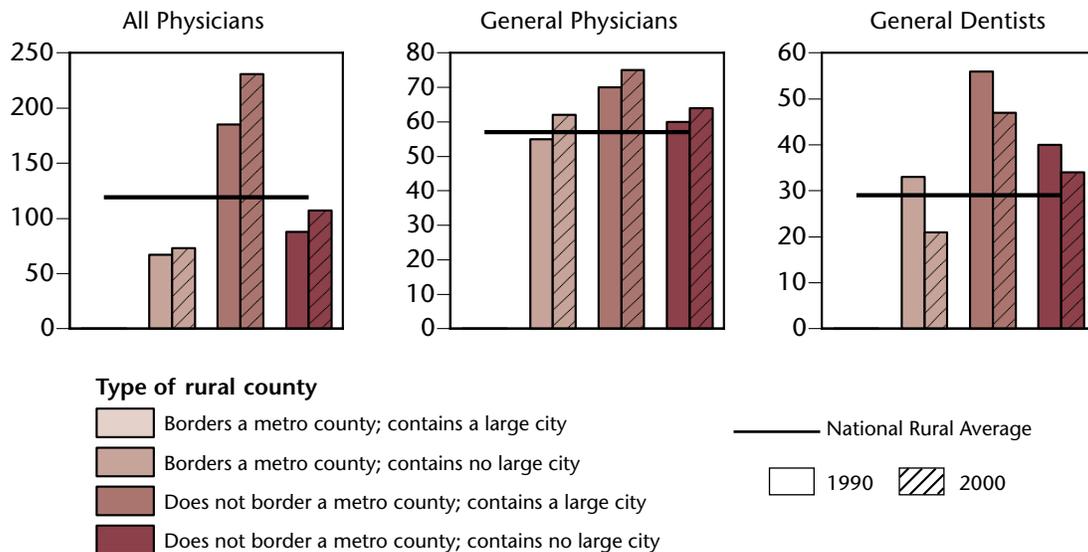
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	272	168	192	25.8	8	8	27
Generalist physicians	72	69	70	14.0	34	10	29
Medical specialists	49	16	24	64.1	8	11	43
Surgical specialists	71	39	47	16.2	1	5	13
General surgeons	12	9	10	-6.0	9	10	21
OB-GYNs	12	8	9	12.5	25	11	36
Other surgeons	46	23	28	27.8	1	3	8
Other specialists	86	45	55	49.0	4	7	22
Dentists	46	40	41	-16.9	15	12	22
PAs	26	18	20	260.3	8	13	14
Full-time RNs (hospital-based)	339	254	274	15.3	17	12	26
Part-time RNs (hospital-based)	207	187	192	-17.0	14	6	11

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	10	7	37
Population	...	53,494	354,516	284,476
Short-term general hospitals	...	9	10	35
Hospital beds/100,000 persons	...	684	322	656
% pop. in persistent poverty counties	...	23.7	0	7.1
Per capita income (\$)	...	18,816	23,755	19,452
% families in poverty	...	13.8	8.8	12.7

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

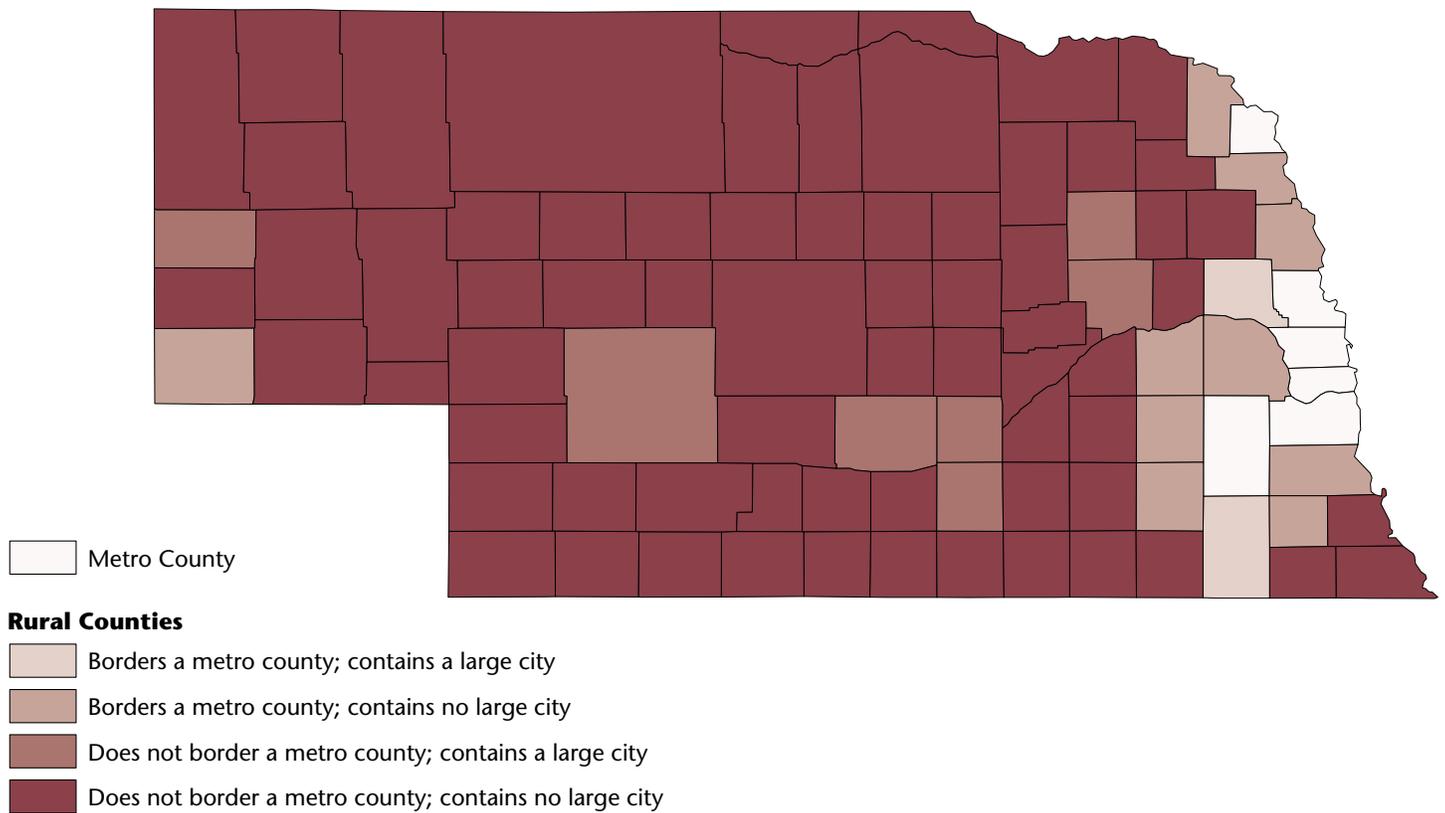


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	67	73	185	231	88	107
Generalist physicians	55	62	70	75	60	64
Medical specialists	0	4	17	28	3	5
Surgical specialists	4	6	51	60	16	21
General surgeons	2	0	12	12	6	7
OB-GYNs	2	0	10	13	4	4
Other surgeons	0	6	29	35	6	10
Other specialists	8	4	48	72	10	19
Dentists	33	21	56	47	40	34
PAs	0	19	7	14	5	24
Full-time RNs (hospital-based)	124	226	233	274	167	233
Part-time RNs (hospital-based)	153	80	234	217	130	171

... No counties of this type

NEBRASKA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	899,838	811,425	1,711,263	8.4	38	30	38
% population > 65	10.3	17.2	13.6	-4.0	41	5	11
% population < 15	22.0	21.2	21.6	-6.2	16	16	16
Per capita income (\$)	31,468	23,365	27,625	16.0	14	16	26
% families in poverty	5.8	7.7	6.7	-16.2	42	38	35

Health Care Providers per 100,000 Population in 2000

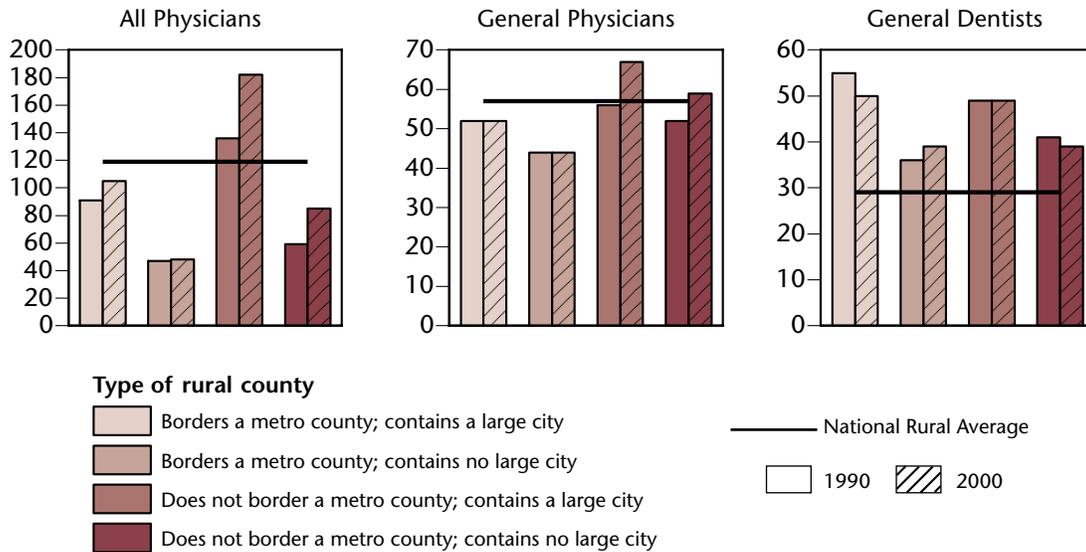
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	229	114	174	27.7	22	30	33
Generalist physicians	73	59	67	17.3	32	25	35
Medical specialists	41	7	25	58.7	19	42	39
Surgical specialists	55	26	41	19.3	17	24	32
General surgeons	13	7	10	5.8	6	31	15
OB-GYNs	11	5	8	24.7	30	38	41
Other surgeons	31	14	23	24.2	21	20	28
Other specialists	64	22	44	45.0	25	36	43
Dentists	45	43	44	-3.2	17	3	14
PA's	29	24	27	104.1	5	7	5
Full-time RNs (hospital-based)	361	270	318	18.0	13	8	13
Part-time RNs (hospital-based)	231	155	195	7.8	10	13	10

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	2	10	7	68
Population	59,153	104,210	265,415	382,647
Short-term general hospitals	2	12	7	52
Hospital beds/100,000 persons	629	568	461	567
% pop. in persistent poverty counties	0	6.9	0	0.6
Per capita income (\$)	25,445	21,850	24,383	22,749
% families in poverty	5.8	6.6	7.7	8.2

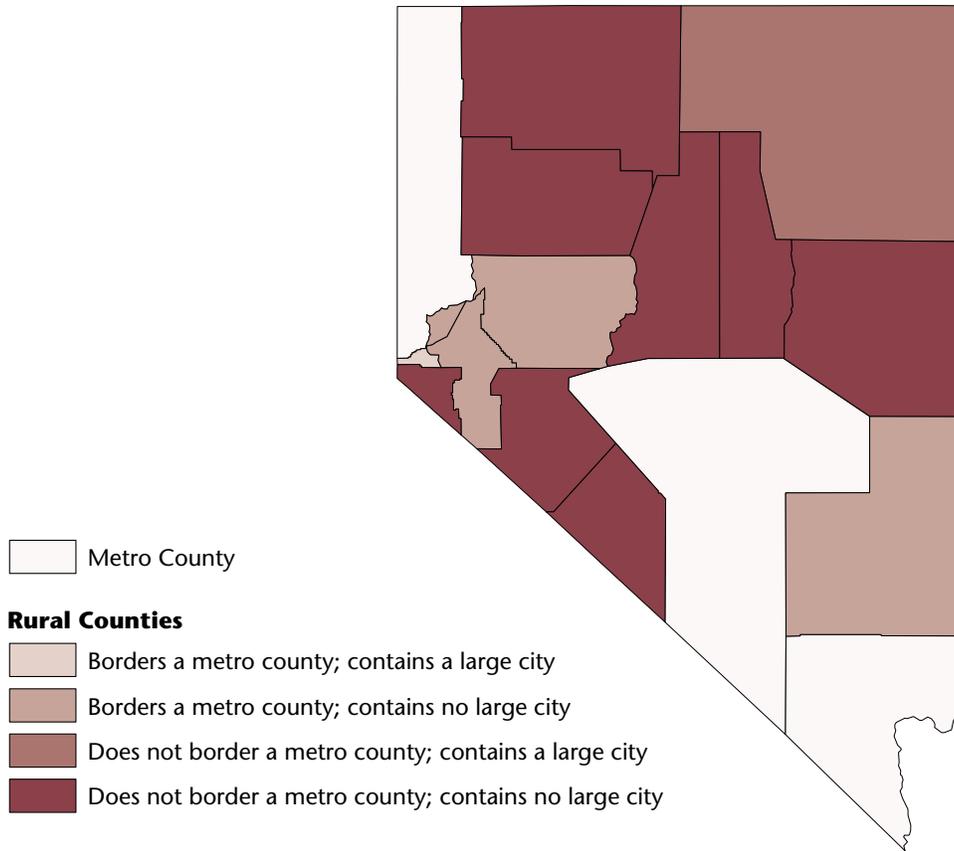
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	91	105	47	48	136	182	59	85
Generalist physicians	52	52	44	44	56	67	52	59
Medical specialists	2	3	0	0	5	15	0	3
Surgical specialists	28	36	0	0	44	58	5	10
General surgeons	12	7	0	0	13	13	4	5
OB-GYNs	5	8	0	0	6	11	0	1
Other surgeons	10	20	0	0	26	34	1	4
Other specialists	9	14	3	4	31	46	2	13
Dentists	55	50	36	39	49	49	41	39
PAs	10	32	12	25	11	19	11	26
Full-time RNs (hospital-based)	198	208	120	198	328	418	123	197
Part-time RNs (hospital-based)	226	235	79	104	188	193	89	131

NEVADA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,747,736	250,521	1,998,257	66.3	30	46	35
% population > 65	10.8	12.1	11.0	3.2	34	45	44
% population < 15	21.7	22.3	21.7	2.9	19	8	15
Per capita income (\$)	29,795	27,507	29,508	8.5	23	5	14
% families in poverty	7.6	7.1	7.5	3.9	23	40	31

Health Care Providers per 100,000 Population in 2000

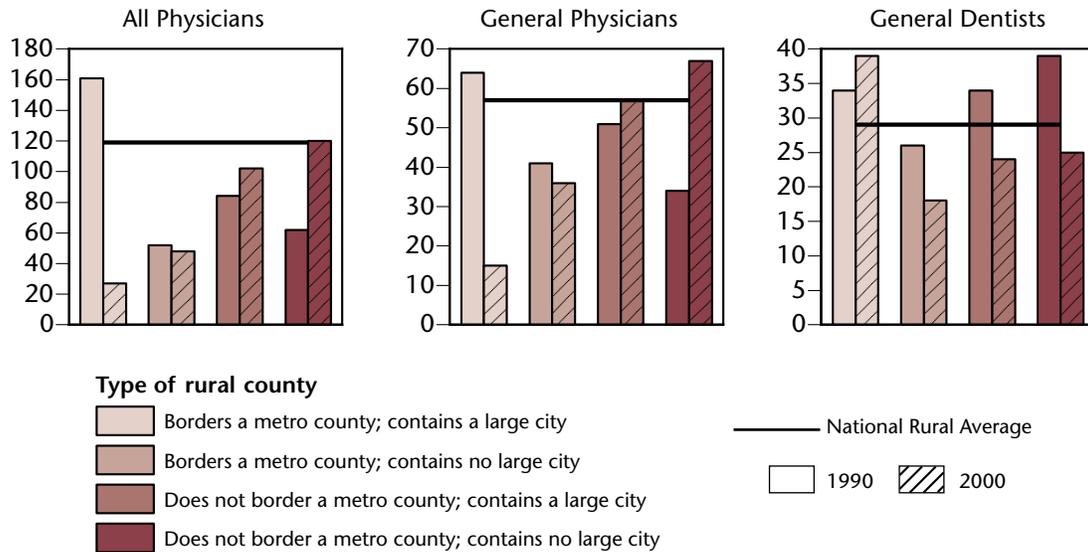
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	177	78	165	22.1	48	48	44
Generalist physicians	60	46	58	28.9	48	45	47
Medical specialists	30	6	27	43.2	45	43	33
Surgical specialists	41	13	38	3.4	48	49	43
General surgeons	8	4	7	-19.8	46	48	47
OB-GYNs	11	4	10	25.7	31	45	23
Other surgeons	22	5	20	5.0	49	49	47
Other specialists	52	16	47	36.2	45	46	36
Dentists	27	26	27	-28.1	50	35	49
PA's	11	12	11	-10.2	37	29	36
Full-time RNs (hospital-based)	246	162	236	3.7	37	40	37
Part-time RNs (hospital-based)	69	85	71	-1.4	49	36	50

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	1	4	1	8
Population	52,457	66,047	45,291	86,726
Short-term general hospitals	1	2	2	5
Hospital beds/100,000 persons	244	156	144	202
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	31,566	22,990	24,909	29,849
% families in poverty	6.9	6.8	7.0	7.4

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	161	27	52	48	84	102	62	120
Generalist physicians	64	15	41	36	51	57	34	67
Medical specialists	7	8	2	0	3	4	7	12
Surgical specialists	45	0	7	8	21	31	7	16
General surgeons	7	0	5	3	3	9	4	5
OB-GYNs	10	0	2	2	9	13	0	3
Other surgeons	27	0	0	3	9	9	3	8
Other specialists	45	11	2	5	9	9	13	30
Dentists	34	39	26	18	34	24	39	25
PAs	27	15	0	11	0	13	14	10
Full-time RNs (hospital-based)	156	261	58	89	170	214	80	129
Part-time RNs (hospital-based)	146	328	9	21	72	26	10	16

NEW HAMPSHIRE

 Metro County

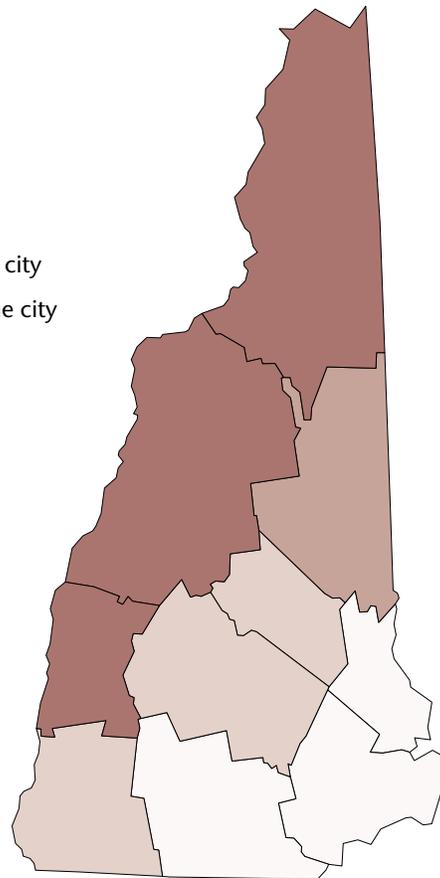
Rural Counties

 Borders a metro county; contains a large city

 Borders a metro county; contains no large city

 Does not border a metro county; contains a large city

 Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	770,433	465,353	1,235,786	11.4	40	38	41
% population > 65	10.5	14.3	12.0	6.2	37	25	36
% population < 15	21.8	19.3	20.8	-2.5	17	42	31
Per capita income (\$)	35,411	29,452	33,167	21.6	5	4	5
% families in poverty	4.0	4.8	4.3	-1.7	50	48	50

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	175	247	202	20.9	49	1	17
Generalist physicians	68	84	74	19.1	39	3	23
Medical specialists	22	41	29	64.3	50	1	25
Surgical specialists	40	55	45	4.2	50	1	17
General surgeons	7	15	10	0.8	50	1	12
OB-GYNs	12	11	11	17.2	24	2	13
Other surgeons	21	29	24	0.4	50	1	25
Other specialists	48	74	58	30.4	50	1	15
Dentists	43	40	42	-5.1	23	7	20
PA's	16	20	18	229.1	25	10	18
Full-time RNs (hospital-based)	188	337	244	9.6	47	1	35
Part-time RNs (hospital-based)	155	202	173	-6.4	28	4	20

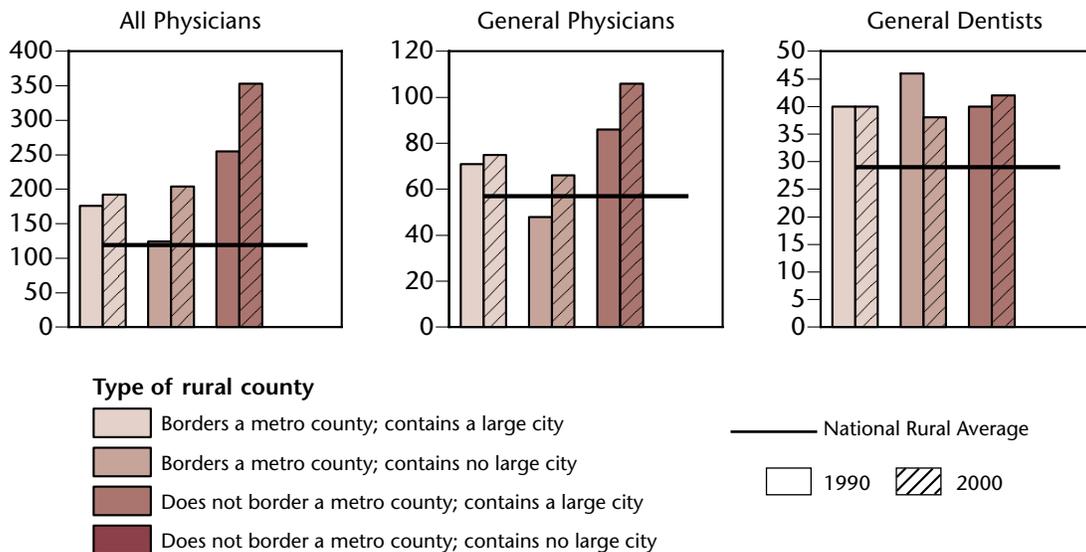
See page 155 for data sources and explanatory notes.

NEW HAMPSHIRE

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	3	1	3	0
Population	266,375	43,666	155,312	...
Short-term general hospitals	5	2	9	...
Hospital beds/100,000 persons	222	362	414	...
% pop. in persistent poverty counties	0	0	0	...
Per capita income (\$)	30,167	28,381	28,527	...
% families in poverty	4.3	5.5	5.5	...

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	176	192	124	204	255	353	...	...
Generalist physicians	71	75	48	66	86	106	...	...
Medical specialists	17	24	0	11	34	77	...	...
Surgical specialists	43	41	42	50	63	79	...	...
General surgeons	9	10	20	23	18	22	...	...
OB-GYNs	8	9	6	9	8	14	...	...
Other surgeons	26	22	17	18	37	44	...	...
Other specialists	45	53	34	80	77	108	...	...
Dentists	40	40	46	38	40	42	...	...
PAs	10	17	6	18	9	26	...	...
Full-time RNs (hospital-based)	220	238	187	275	531	523	...	...
Part-time RNs (hospital-based)	88	144	140	153	393	315	...	...

... No counties of this type

NEW JERSEY

 Metro County

Rural Counties

 Borders a metro county; contains a large city

 Borders a metro county; contains no large city

 Does not border a metro county; contains a large city

 Does not border a metro county; contains no large city



New Jersey has no counties that are classified as rural using the UIC county taxonomy. In other taxonomies, such as the RUCAs, New Jersey does have some rural areas.

2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	8,414,350	...	8,414,350	8.8	8	...	9
% population > 65	13.2	...	13.2	-0.9	10	...	18
% population < 15	20.9	...	20.9	7.3	34	...	30
Per capita income (\$)	37,116	...	37,116	13.8	3	...	3
% families in poverty	6.3	...	6.3	11.9	34	...	43

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	259	...	259	26.6	12	...	5
Generalist physicians	93	...	93	28.1	6	...	3
Medical specialists	52	...	52	45.0	6	...	1
Surgical specialists	54	...	54	7.7	18	...	6
General surgeons	11	...	11	-10.0	19	...	7
OB-GYNs	15	...	15	17.3	4	...	1
Other surgeons	28	...	28	11.5	29	...	9
Other specialists	72	...	72	48.8	13	...	7
Dentists	53	...	53	1.3	4	...	2
PAs	6	...	6	-44.1	47	...	46
Full-time RNs (hospital-based)	268	...	268	-2.6	35	...	28
Part-time RNs (hospital-based)	164	...	164	26.0	25	...	22

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

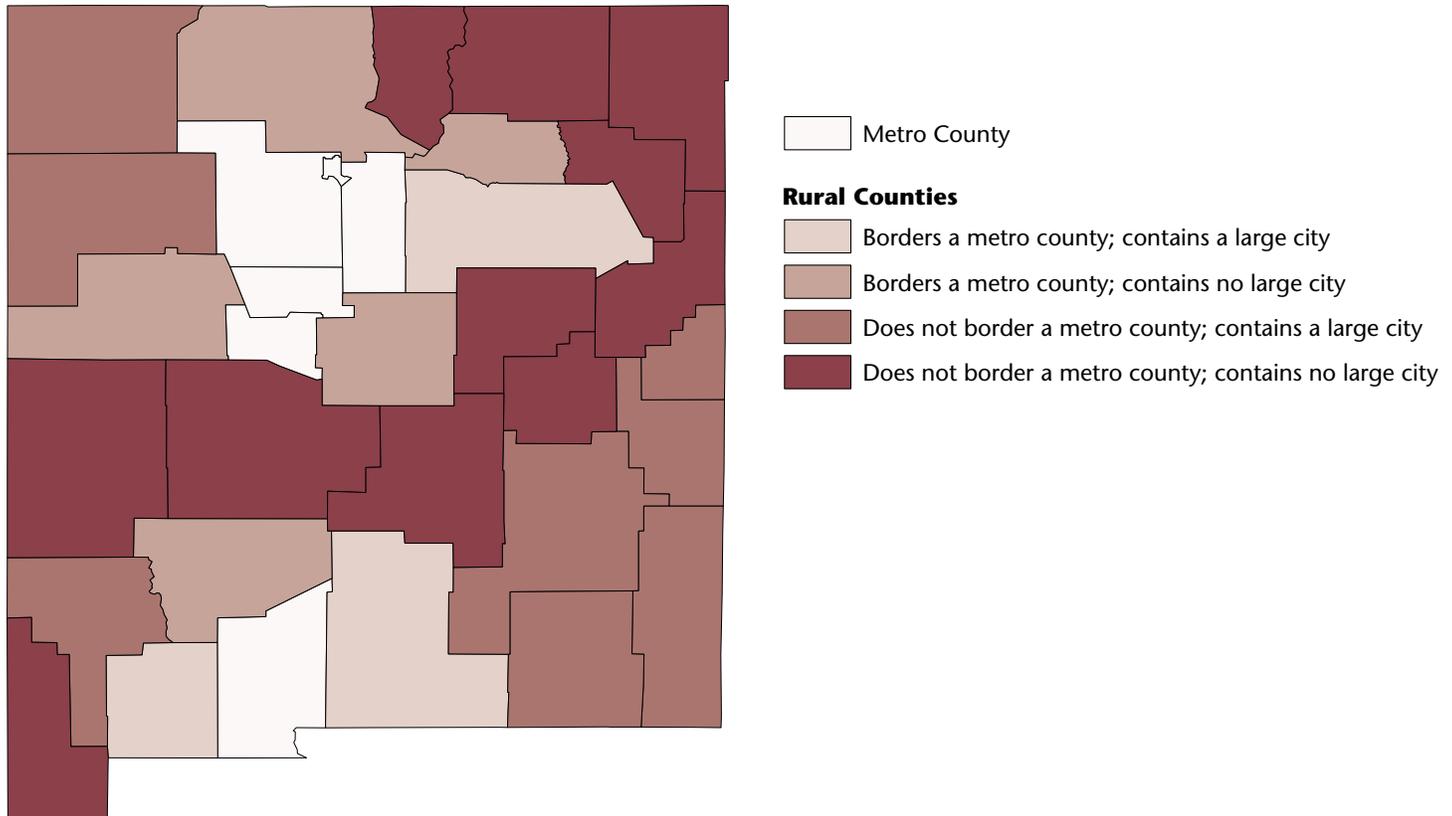
	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	0	0	0
Population
Short-term general hospitals
Hospital beds/100,000 persons
% pop. in persistent poverty counties
Per capita income (\$)
% families in poverty

Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians
Generalist physicians
Medical specialists
Surgical specialists
General surgeons
OB-GYNs
Other surgeons
Other specialists
Dentists
PAs
Full-time RNs (hospital-based)
Part-time RNs (hospital-based)

... No counties of this type

NEW MEXICO



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,035,055	783,991	1,819,046	20.1	35	32	36
% population > 65	11.1	12.4	11.7	8.4	32	42	38
% population < 15	22.0	24.3	23.0	-7.8	14	3	5
Per capita income (\$)	25,216	17,591	21,930	11.4	44	49	48
% families in poverty	11.7	18.3	14.5	-11.7	3	2	3

Health Care Providers per 100,000 Population in 2000

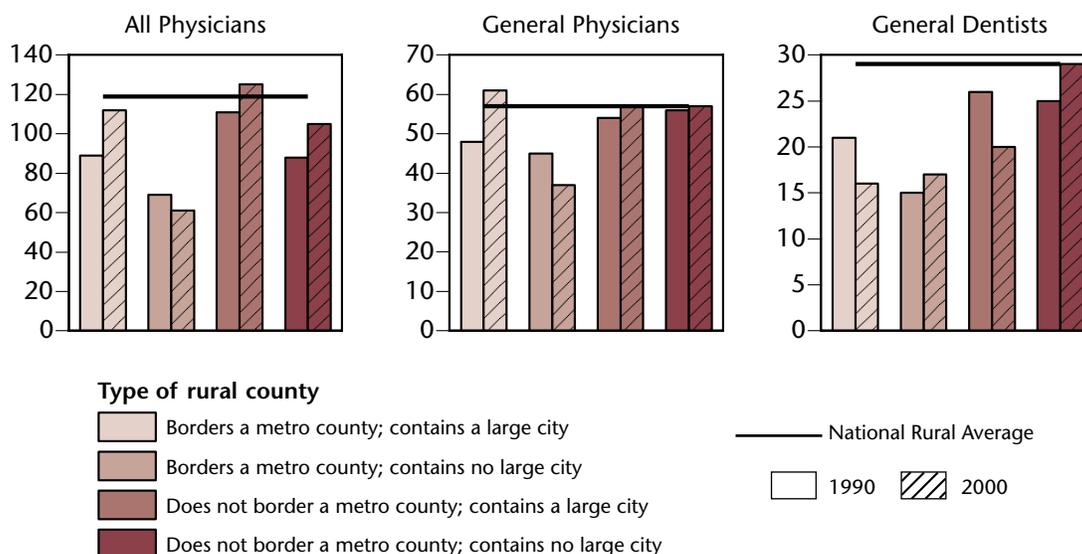
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	214	112	170	13.6	34	35	37
Generalist physicians	76	55	67	14.9	29	31	34
Medical specialists	35	11	25	33.9	32	27	41
Surgical specialists	41	24	34	-11.3	47	32	48
General surgeons	9	8	8	-9.4	41	27	40
OB-GYNs	9	6	8	-15.5	50	28	45
Other surgeons	23	11	18	-10.2	44	32	50
Other specialists	68	23	49	33.9	18	34	32
Dentists	31	20	27	-17.2	47	48	50
PAAs	19	17	18	21.8	17	18	16
Full-time RNs (hospital-based)	267	202	239	1.8	36	27	36
Part-time RNs (hospital-based)	148	91	123	28.2	32	32	34

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	3	5	8	11
Population	117,440	102,146	451,214	113,191
Short-term general hospitals	4	4	12	7
Hospital beds/100,000 persons	221	138	252	190
% pop. in persistent poverty counties	47.0	62.0	45.8	52.3
Per capita income (\$)	16,084	15,504	18,469	17,542
% families in poverty	19.1	17.4	18.8	16.1

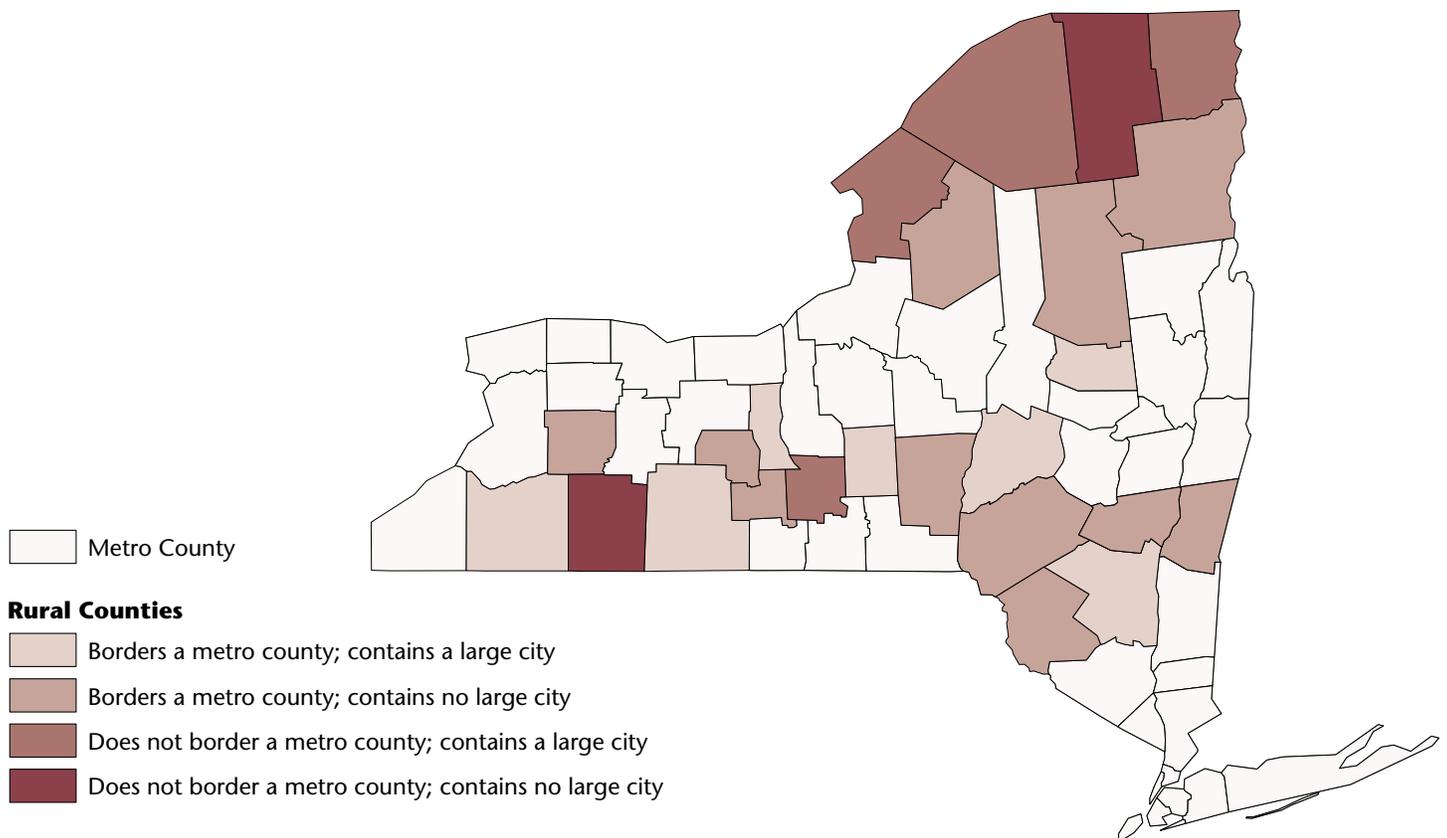
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	89	112	69	61	111	125	88	105
Generalist physicians	48	61	45	37	54	57	56	57
Medical specialists	3	11	2	6	8	14	3	6
Surgical specialists	21	20	10	10	32	29	12	24
General surgeons	7	7	4	4	9	8	5	10
OB-GYNs	9	4	4	1	7	7	2	6
Other surgeons	4	9	2	5	15	14	4	8
Other specialists	17	24	12	8	18	28	17	20
Dentists	21	16	15	17	26	20	25	29
PAs	0	16	22	13	3	18	28	22
Full-time RNs (hospital-based)	130	188	74	105	236	237	122	163
Part-time RNs (hospital-based)	64	135	13	47	42	90	68	87

NEW YORK



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	17,473,058	1,503,399	18,976,457	5.5	3	16	3
% population > 65	12.8	13.8	12.9	-1.8	13	31	24
% population < 15	20.8	19.6	20.7	4.1	38	38	34
Per capita income (\$)	35,715	22,699	34,684	13.0	4	22	4
% families in poverty	11.7	9.2	11.5	14.2	2	26	9

Health Care Providers per 100,000 Population in 2000

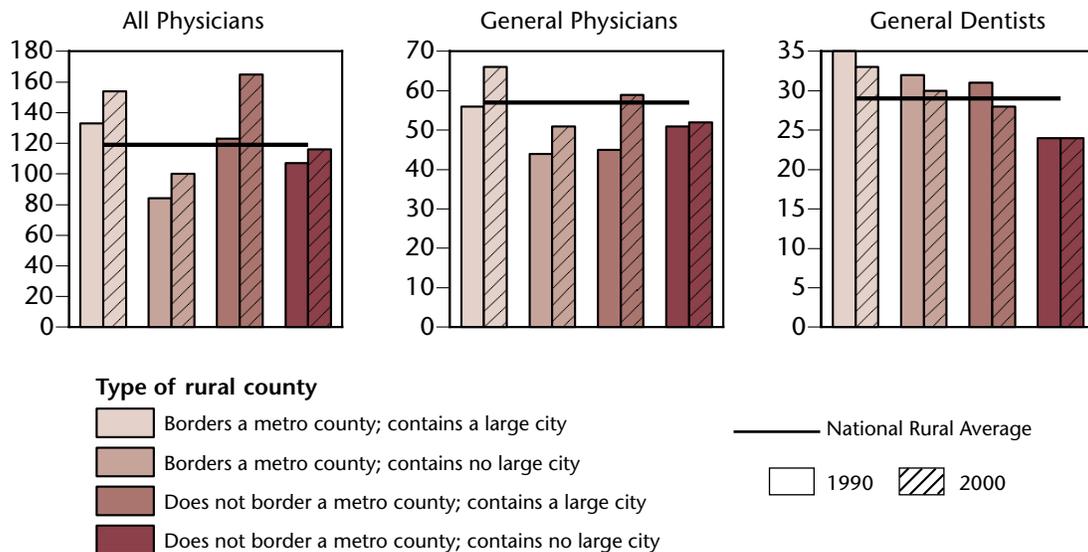
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	278	138	267	24.7	6	15	2
Generalist physicians	93	59	90	25.2	5	27	6
Medical specialists	53	15	50	54.4	4	15	2
Surgical specialists	58	30	56	7.2	11	15	3
General surgeons	13	7	12	-9.6	8	28	3
OB-GYNs	15	7	14	11.2	6	14	5
Other surgeons	31	15	30	13.8	20	15	5
Other specialists	82	36	78	27.6	5	15	2
Dentists	54	30	52	-7.4	3	27	3
PAs	26	25	26	106.5	7	6	7
Full-time RNs (hospital-based)	342	192	330	-5.3	16	29	7
Part-time RNs (hospital-based)	106	114	107	38.1	44	23	39

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	7	11	4	2
Population	559,120	443,154	400,064	101,061
Short-term general hospitals	13	10	11	3
Hospital beds/100,000 persons	469	289	257	307
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	23,829	22,568	22,255	18,780
% families in poverty	8.7	8.8	9.9	10.3

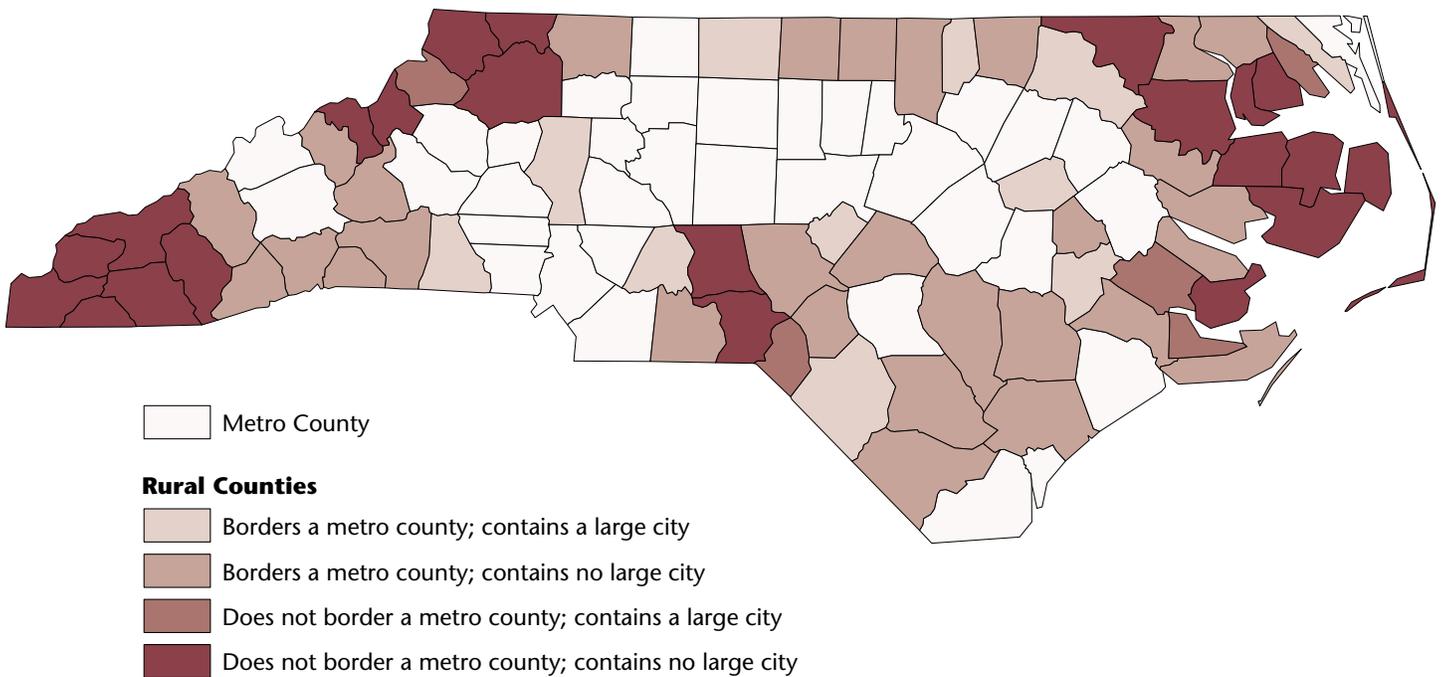
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	133	154	84	100	123	165	107	116
Generalist physicians	56	66	44	51	45	59	51	52
Medical specialists	12	17	6	7	12	22	6	8
Surgical specialists	36	33	18	18	35	42	26	27
General surgeons	11	8	8	5	9	9	13	11
OB-GYNs	7	8	5	4	8	11	5	5
Other surgeons	18	17	5	9	18	22	7	11
Other specialists	30	39	16	25	31	44	25	33
Dentists	35	33	32	30	31	28	24	24
PAs	10	24	6	24	9	26	4	29
Full-time RNs (hospital-based)	250	235	168	123	209	206	260	193
Part-time RNs (hospital-based)	111	139	52	65	109	131	98	130

NORTH CAROLINA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	5,437,056	2,612,257	8,049,313	21.4	13	2	11
% population > 65	10.8	14.7	12.0	-0.8	36	22	35
% population < 15	20.8	20.1	20.5	2.0	39	32	37
Per capita income (\$)	29,031	22,384	26,874	17.6	29	26	30
% families in poverty	7.8	11.6	9.0	-8.3	21	15	19

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	207	121	179	30.9	38	24	32
Generalist physicians	68	52	63	28.8	41	37	40
Medical specialists	36	12	28	67.6	28	22	26
Surgical specialists	51	30	44	12.8	27	17	20
General surgeons	10	8	9	-1.2	24	21	24
OB-GYNs	12	7	11	13.9	23	15	21
Other surgeons	28	15	24	18.9	27	18	23
Other specialists	57	28	47	39.2	42	26	35
Dentists	30	23	28	-5.3	49	43	47
PA's	29	19	26	134.3	4	11	6
Full-time RNs (hospital-based)	351	266	324	3.1	14	9	11
Part-time RNs (hospital-based)	155	86	133	50.2	29	35	30

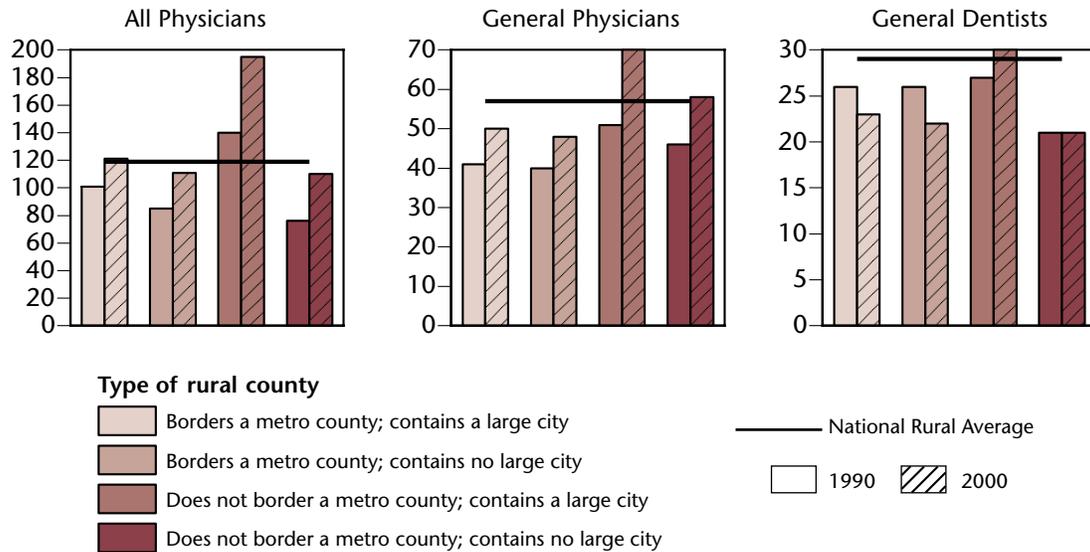
See page 155 for data sources and explanatory notes.

NORTH CAROLINA

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	11	28	4	22
Population	782,025	1,166,955	205,026	458,251
Short-term general hospitals	15	25	6	18
Hospital beds/100,000 persons	336	252	443	324
% pop. in persistent poverty counties	23.1	22.2	20.8	24.9
Per capita income (\$)	22,399	22,346	23,661	21,882
% families in poverty	12.2	11.1	11.7	11.6

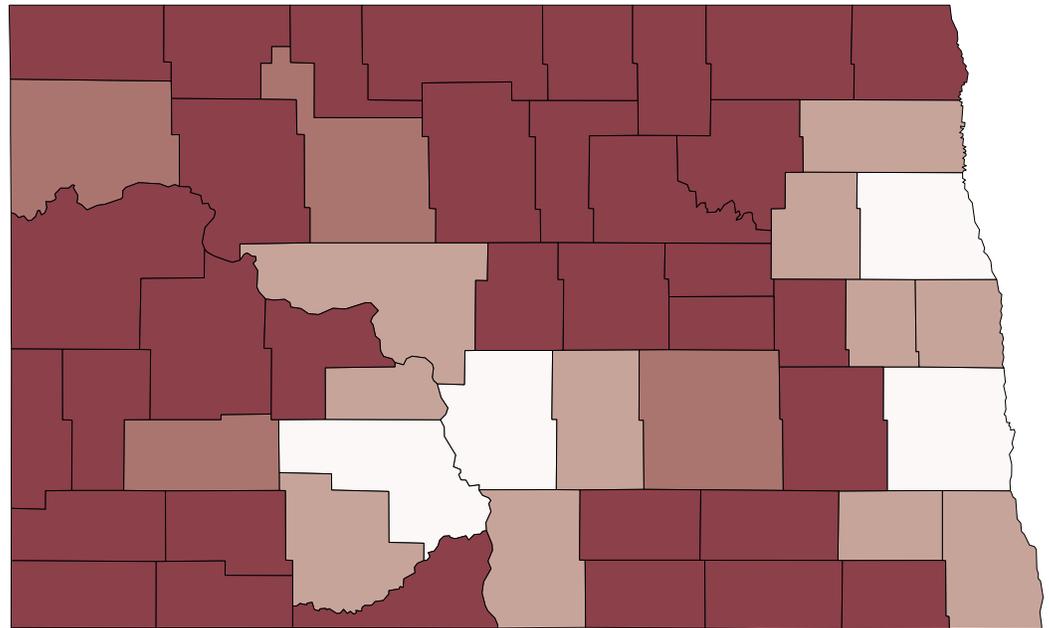
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	101	121	85	111	140	195	76	110
Generalist physicians	41	50	40	48	51	70	46	58
Medical specialists	9	14	4	11	7	24	1	6
Surgical specialists	31	32	23	26	50	55	17	24
General surgeons	8	7	7	7	10	13	7	8
OB-GYNs	8	8	6	6	14	14	4	5
Other surgeons	15	16	10	13	26	29	6	11
Other specialists	21	26	18	28	33	48	12	22
Dentists	26	23	26	22	27	30	21	21
PAs	7	20	9	19	0	17	2	18
Full-time RNs (hospital-based)	252	289	186	228	331	478	173	227
Part-time RNs (hospital-based)	73	92	49	85	120	141	39	56

NORTH DAKOTA



Metro County

Rural Counties

- Borders a metro county; contains a large city
- Borders a metro county; contains no large city
- Does not border a metro county; contains a large city
- Does not border a metro county; contains no large city

2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	283,966	358,234	642,200	0.6	45	42	47
% population > 65	10.8	17.8	14.7	3.2	35	3	5
% population < 15	19.8	20.5	20.2	-13.2	45	24	43
Per capita income (\$)	26,710	23,115	24,705	18.2	39	18	38
% families in poverty	6.2	9.9	8.3	-24.0	35	21	23

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	280	112	187	25.2	5	32	28
Generalist physicians	93	60	74	25.1	7	24	22
Medical specialists	46	9	25	63.7	15	37	37
Surgical specialists	66	21	41	6.3	3	39	33
General surgeons	13	8	10	-5.0	5	20	16
OB-GYNs	11	4	7	-10.5	36	47	49
Other surgeons	42	10	24	18.7	3	38	21
Other specialists	81	25	50	42.5	6	31	28
Dentists	39	36	37	-2.2	33	17	29
PAs	31	30	30	201.4	3	3	3
Full-time RNs (hospital-based)	442	297	361	15.7	4	3	4
Part-time RNs (hospital-based)	454	174	298	0.1	1	10	2

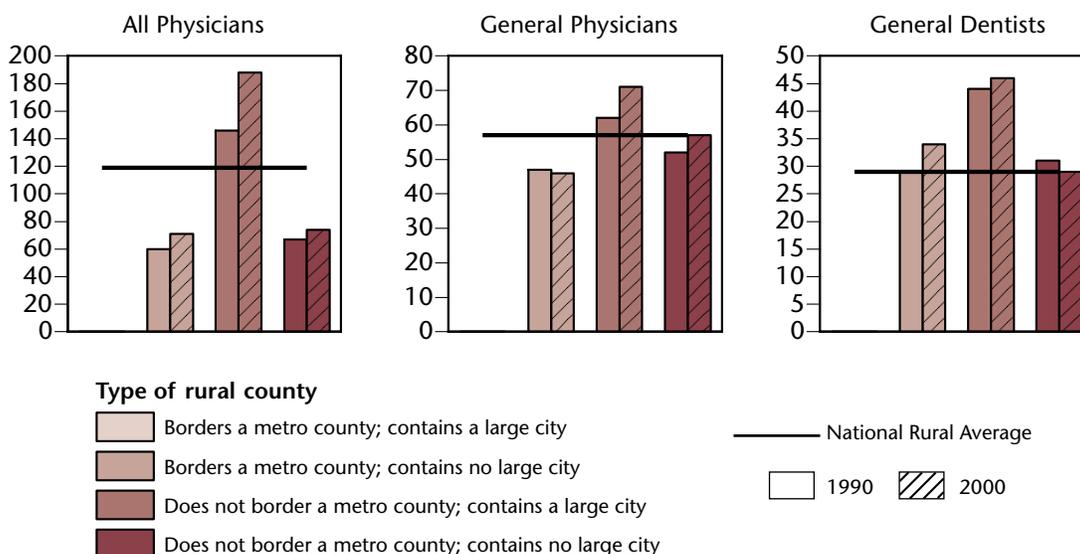
See page 155 for data sources and explanatory notes.

NORTH DAKOTA

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	11	4	34
Population	...	72,028	123,100	163,106
Short-term general hospitals	...	9	7	22
Hospital beds/100,000 persons	...	451	755	769
% pop. in persistent poverty counties	...	7.8	0	18.4
Per capita income (\$)	...	22,237	24,322	22,592
% families in poverty	...	8.6	8.0	11.8

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

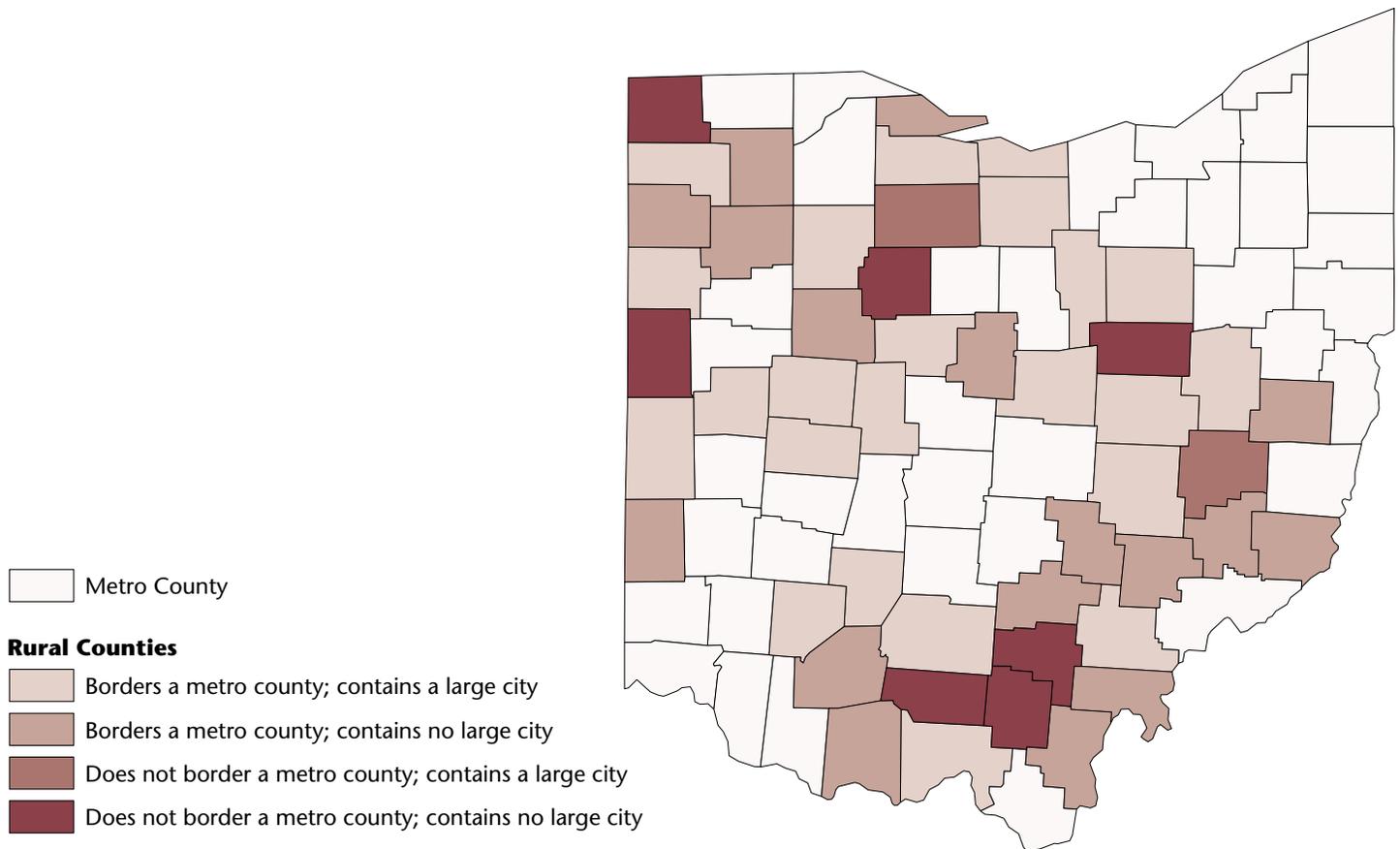


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	60	71	146	188	67	74
Generalist physicians	47	46	62	71	52	57
Medical specialists	3	6	7	19	2	3
Surgical specialists	6	12	39	45	8	7
General surgeons	3	10	10	10	6	6
OB-GYNs	4	3	10	9	2	1
Other surgeons	0	0	19	27	1	1
Other specialists	4	10	37	58	4	7
Dentists	29	34	44	46	31	29
PAs	14	32	4	15	2	40
Full-time RNs (hospital-based)	71	128	312	447	147	259
Part-time RNs (hospital-based)	53	161	231	257	120	117

... No counties of this type

OHIO



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	9,213,776	2,139,364	11,353,140	4.7	7	4	7
% population > 65	13.2	13.5	13.3	2.4	11	33	15
% population < 15	21.1	21.4	21.1	-2.3	31	12	23
Per capita income (\$)	29,146	22,944	27,977	13.0	27	21	20
% families in poverty	7.8	7.8	7.8	-19.7	19	36	27

Health Care Providers per 100,000 Population in 2000

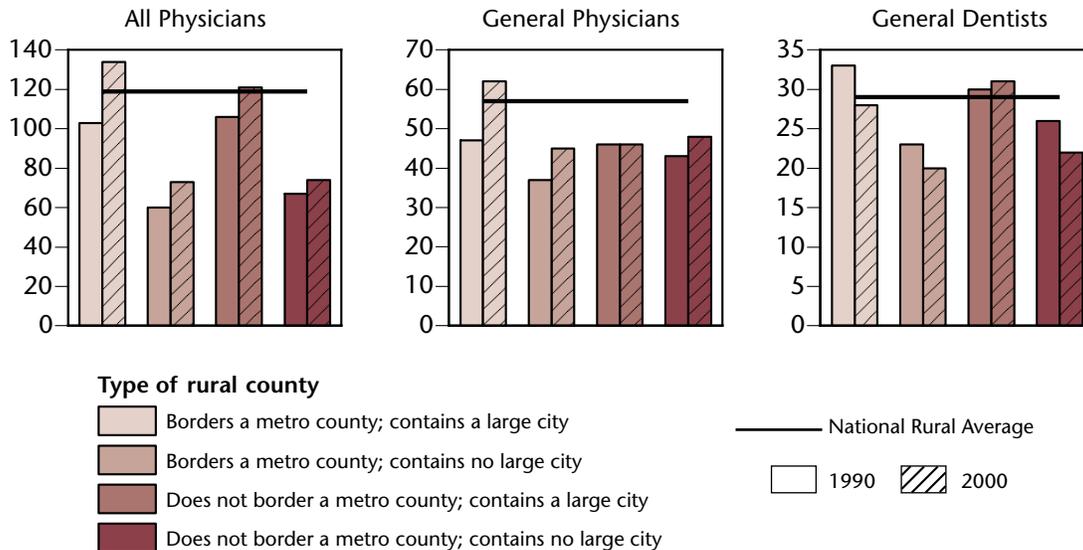
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	226	114	205	24.9	23	29	14
Generalist physicians	81	56	77	25.2	18	30	15
Medical specialists	44	13	38	43.2	16	21	11
Surgical specialists	47	25	43	7.8	37	28	25
General surgeons	10	7	9	-12.7	25	33	22
OB-GYNs	12	7	11	17.5	27	17	18
Other surgeons	25	10	22	14.6	41	36	33
Other specialists	67	26	59	52.4	21	30	13
Dentists	42	26	39	-7.8	26	36	25
PAAs	11	5	10	5.8	35	41	38
Full-time RNs (hospital-based)	310	179	286	-10.8	23	34	22
Part-time RNs (hospital-based)	205	127	190	27.3	15	20	13

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	23	17	2	7
Population	1,349,004	475,780	99,475	215,105
Short-term general hospitals	31	12	3	5
Hospital beds/100,000 persons	255	149	288	132
% pop. in persistent poverty counties	0	5.7	0	12.9
Per capita income (\$)	23,887	21,341	21,317	21,322
% families in poverty	7.3	8.4	8.9	8.8

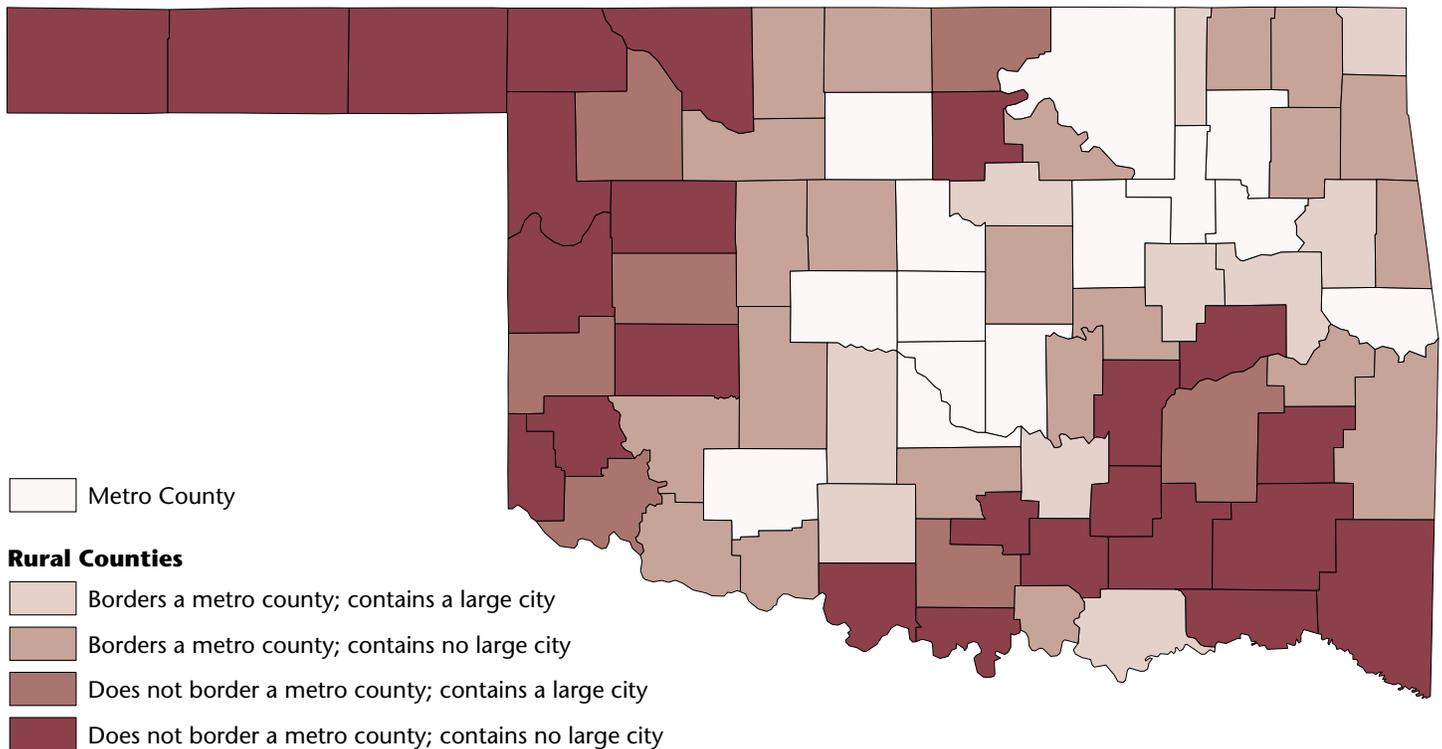
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	103	134	60	73	106	121	67	74
Generalist physicians	47	62	37	45	46	46	43	48
Medical specialists	10	17	4	5	4	13	3	3
Surgical specialists	27	31	10	11	26	34	12	13
General surgeons	8	9	4	5	9	9	7	3
OB-GYNs	6	9	3	3	8	10	3	4
Other surgeons	12	14	3	3	9	15	3	6
Other specialists	19	32	8	13	30	30	9	11
Dentists	33	28	23	20	30	31	26	22
PAs	7	6	6	3	8	1	19	2
Full-time RNs (hospital-based)	216	210	103	119	220	213	136	100
Part-time RNs (hospital-based)	98	159	43	48	96	98	65	113

OKLAHOMA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	2,098,362	1,352,292	3,450,654	9.7	28	20	27
% population > 65	11.6	15.7	13.2	-2.0	24	13	19
% population < 15	21.6	20.6	21.2	-4.9	20	22	22
Per capita income (\$)	26,310	19,521	23,649	10.8	40	43	42
% families in poverty	9.8	13.3	11.2	-14.2	10	12	10

Health Care Providers per 100,000 Population in 2000

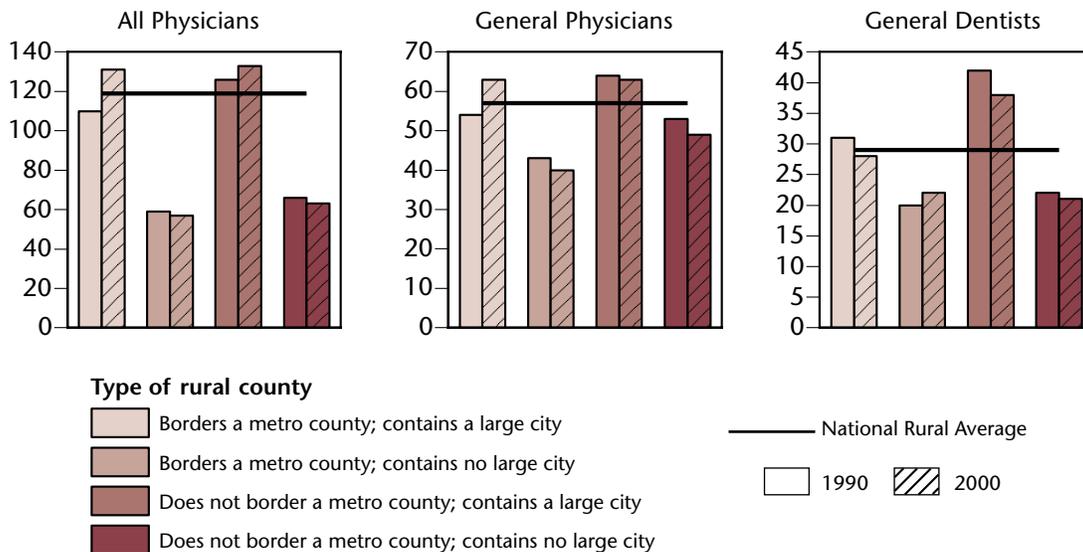
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	214	97	168	15.8	33	43	41
Generalist physicians	79	54	69	12.0	21	34	32
Medical specialists	41	11	29	37.7	20	29	24
Surgical specialists	42	18	33	0.6	45	44	49
General surgeons	8	5	7	-10.0	45	45	50
OB-GYNs	10	5	8	-0.4	48	42	46
Other surgeons	25	8	18	5.8	43	42	49
Other specialists	63	19	46	51.7	30	43	39
Dentists	39	26	34	-3.6	34	34	37
PAAs	19	15	17	64.9	19	23	19
Full-time RNs (hospital-based)	288	201	254	1.9	26	28	33
Part-time RNs (hospital-based)	126	59	99	37.4	39	46	44

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	10	22	7	24
Population	462,412	408,672	230,520	250,688
Short-term general hospitals	15	20	11	24
Hospital beds/100,000 persons	342	184	408	330
% pop. in persistent poverty counties	17.1	34.9	0	58.0
Per capita income (\$)	20,023	18,428	20,765	19,234
% families in poverty	12.5	13.5	12.7	15.0

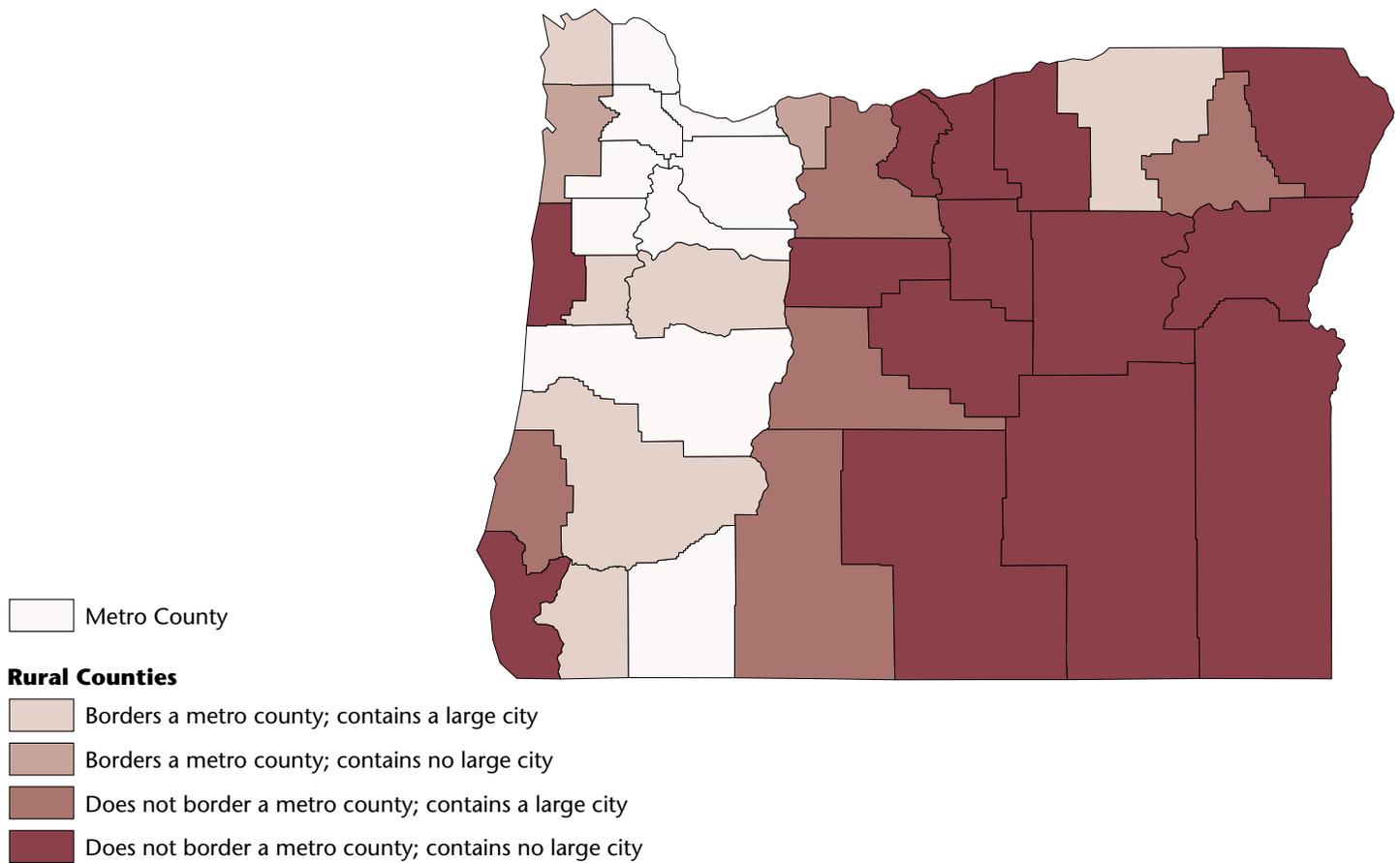
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	110	131	59	57	126	133	66	63
Generalist physicians	54	63	43	40	64	63	53	49
Medical specialists	6	17	2	6	6	13	3	6
Surgical specialists	28	28	7	5	34	36	5	6
General surgeons	5	6	5	3	11	11	3	4
OB-GYNs	7	9	1	1	7	7	1	1
Other surgeons	16	14	1	1	17	18	0	1
Other specialists	22	29	8	10	20	28	6	4
Dentists	31	28	20	22	42	38	22	21
PAs	11	15	1	15	12	15	3	18
Full-time RNs (hospital-based)	264	288	84	99	226	271	112	146
Part-time RNs (hospital-based)	29	83	18	30	69	71	20	50

OREGON



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	2,424,213	997,186	3,421,399	20.4	27	27	28
% population > 65	11.6	15.7	12.8	-7.0	23	14	25
% population < 15	20.6	20.0	20.4	-5.1	41	35	40
Per capita income (\$)	29,560	23,032	27,657	15.1	25	19	25
% families in poverty	7.2	9.5	7.9	-9.3	27	23	25

Health Care Providers per 100,000 Population in 2000

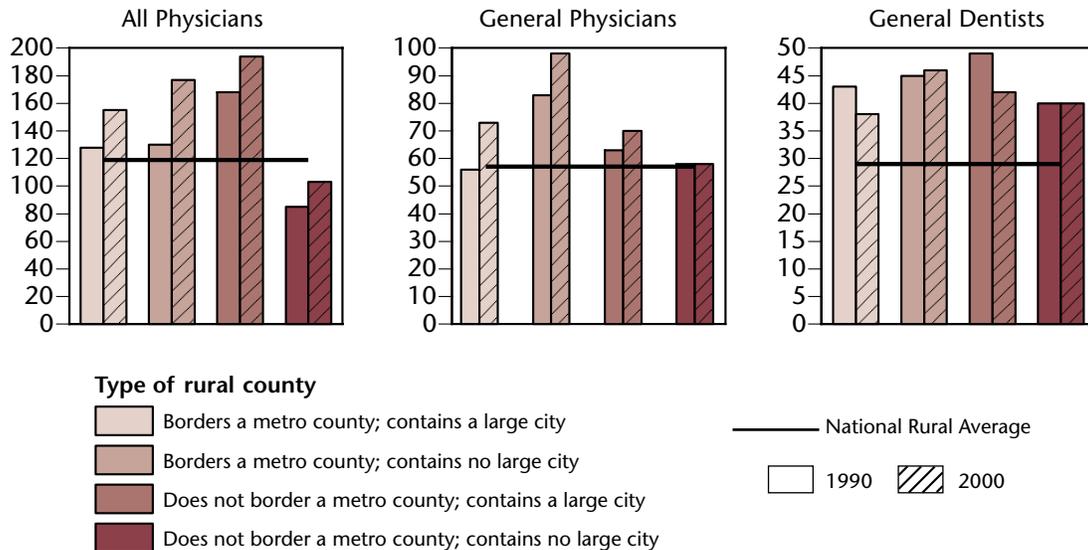
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	216	157	199	12.8	29	11	19
Generalist physicians	79	70	76	18.0	22	9	16
Medical specialists	30	12	25	23.4	46	23	40
Surgical specialists	48	37	45	-3.3	34	7	18
General surgeons	9	9	9	-17.2	37	9	32
OB-GYNs	12	8	11	9.0	26	10	20
Other surgeons	27	20	25	-2.2	34	7	14
Other specialists	64	41	57	23.4	27	10	17
Dentists	49	40	47	-11.9	7	11	8
PAs	11	11	11	19.3	38	34	37
Full-time RNs (hospital-based)	273	173	244	-11.6	33	36	34
Part-time RNs (hospital-based)	193	165	185	14.2	16	11	15

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	6	2	5	14
Population	463,525	44,673	290,242	198,746
Short-term general hospitals	11	2	8	12
Hospital beds/100,000 persons	176	139	254	324
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	23,403	22,172	23,992	20,960
% families in poverty	9.3	8.8	9.1	10.6

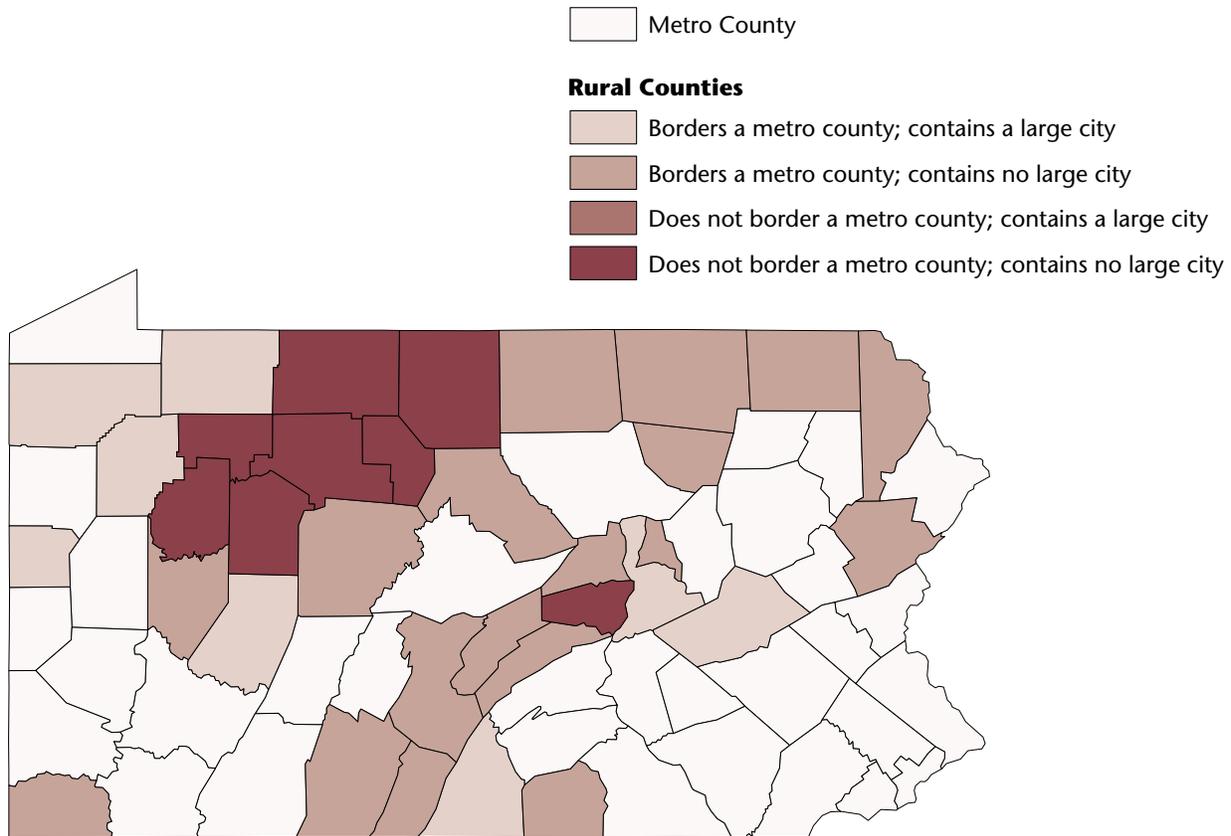
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	128	155	130	177	168	194	85	103
Generalist physicians	56	73	83	98	63	70	58	58
Medical specialists	9	12	8	7	10	18	2	5
Surgical specialists	33	33	23	27	51	54	16	20
General surgeons	9	8	13	9	13	11	7	8
OB-GYNs	6	8	3	9	10	10	2	5
Other surgeons	18	18	8	9	29	33	7	8
Other specialists	30	39	16	47	44	55	9	22
Dentists	43	38	45	46	49	42	40	40
PAs	3	7	0	9	10	14	3	14
Full-time RNs (hospital-based)	209	176	221	143	301	180	153	161
Part-time RNs (hospital-based)	112	162	0	22	150	234	121	103

PENNSYLVANIA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	10,391,529	1,889,525	12,281,054	3.4	6	7	6
% population > 65	15.5	16.4	15.6	1.5	2	8	2
% population < 15	19.8	19.1	19.7	0.0	47	43	47
Per capita income (\$)	30,682	22,984	29,497	13.0	18	20	15
% families in poverty	7.7	7.9	7.8	-4.9	22	33	29

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	269	149	250	25.3	10	12	6
Generalist physicians	96	66	92	25.7	4	14	4
Medical specialists	52	21	47	35.5	5	7	4
Surgical specialists	53	30	49	11.9	23	16	10
General surgeons	11	8	11	-5.7	18	14	11
OB-GYNs	12	6	12	13.2	19	23	11
Other surgeons	29	15	27	20.4	25	16	10
Other specialists	81	37	74	49.7	7	14	6
Dentists	47	32	45	-0.3	10	23	12
PA's	18	19	18	35.8	20	12	17
Full-time RNs (hospital-based)	316	236	304	-10.3	21	16	16
Part-time RNs (hospital-based)	187	101	174	-0.9	17	28	18

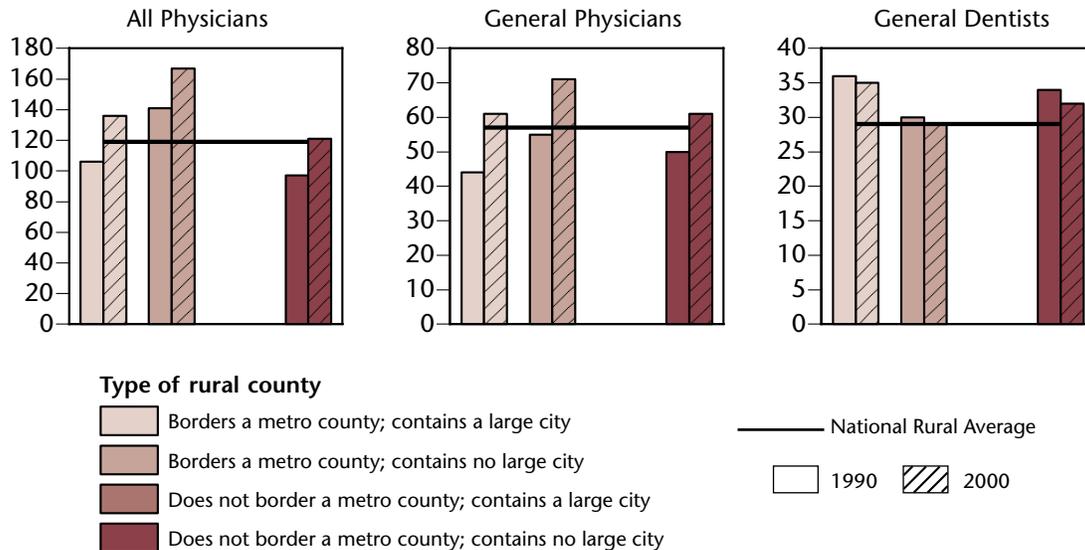
See page 155 for data sources and explanatory notes.

PENNSYLVANIA

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	8	18	0	8
Population	750,247	903,987	...	235,291
Short-term general hospitals	16	21	...	7
Hospital beds/100,000 persons	302	295	...	325
% pop. in persistent poverty counties	0	0	...	0
Per capita income (\$)	23,433	22,283	...	24,246
% families in poverty	7.9	7.9	...	8.4

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

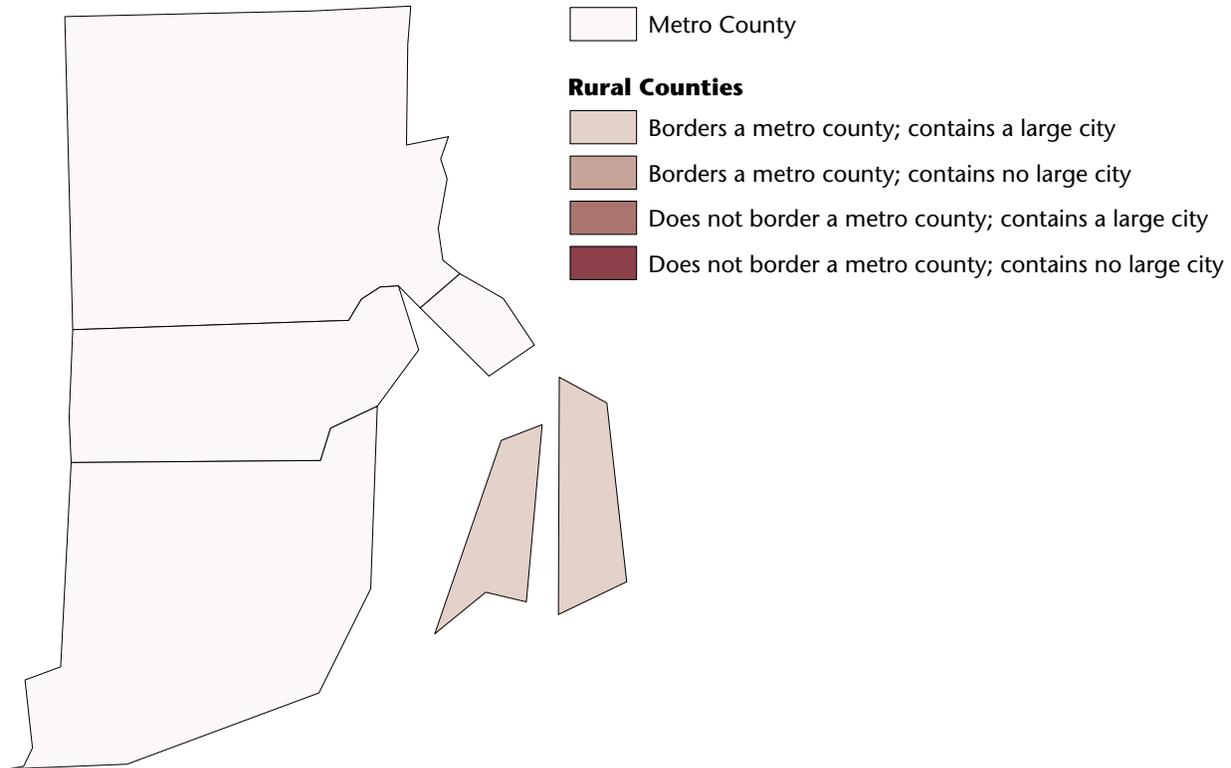


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	106	136	141	167	...	...	97	121
Generalist physicians	44	61	55	71	...	...	50	61
Medical specialists	12	16	23	27	...	...	11	14
Surgical specialists	27	27	32	34	...	...	21	24
General surgeons	9	7	10	10	...	...	9	8
OB-GYNs	6	6	6	7	...	...	4	7
Other surgeons	13	14	16	18	...	...	8	9
Other specialists	22	36	31	40	...	...	15	29
Dentists	36	35	30	29	...	...	34	32
PAs	5	17	15	22	...	...	7	14
Full-time RNs (hospital-based)	229	205	311	260	...	...	187	245
Part-time RNs (hospital-based)	105	111	137	98	...	...	69	75

... No counties of this type

RHODE ISLAND



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	962,886	85,433	1,048,319	4.5	36	49	43
% population > 65	14.6	14.4	14.5	-3.1	4	24	6
% population < 15	19.8	18.9	19.8	4.3	46	44	46
Per capita income (\$)	28,708	33,659	29,111	9.6	31	1	17
% families in poverty	9.2	5.4	8.9	29.2	14	46	20

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	251	192	246	33.3	13	3	7
Generalist physicians	88	76	87	33.0	11	4	8
Medical specialists	49	21	46	61.0	9	6	6
Surgical specialists	56	42	55	14.1	12	3	5
General surgeons	13	9	12	-16.4	4	7	2
OB-GYNs	13	9	13	25.1	12	5	7
Other surgeons	31	23	30	29.0	24	2	4
Other specialists	67	56	66	47.7	20	3	9
Dentists	38	54	40	-3.5	35	1	23
PAAs	12	6	12	102.8	32	38	32
Full-time RNs (hospital-based)	163	55	155	-26.6	49	49	49
Part-time RNs (hospital-based)	262	174	255	6.9	9	8	5

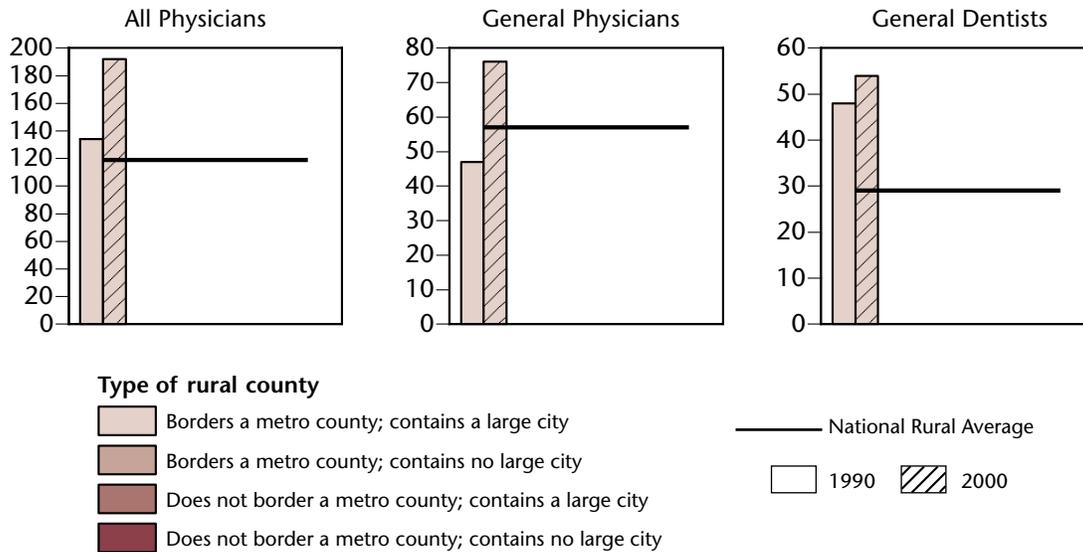
See page 155 for data sources and explanatory notes.

RHODE ISLAND

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	1	0	0	0
Population	85,433	...	...	...
Short-term general hospitals	1	...	...	...
Hospital beds/100,000 persons	173	...	...	...
% pop. in persistent poverty counties	0	...	...	...
Per capita income (\$)	33,659	...	...	...
% families in poverty	5.4	...	...	...

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

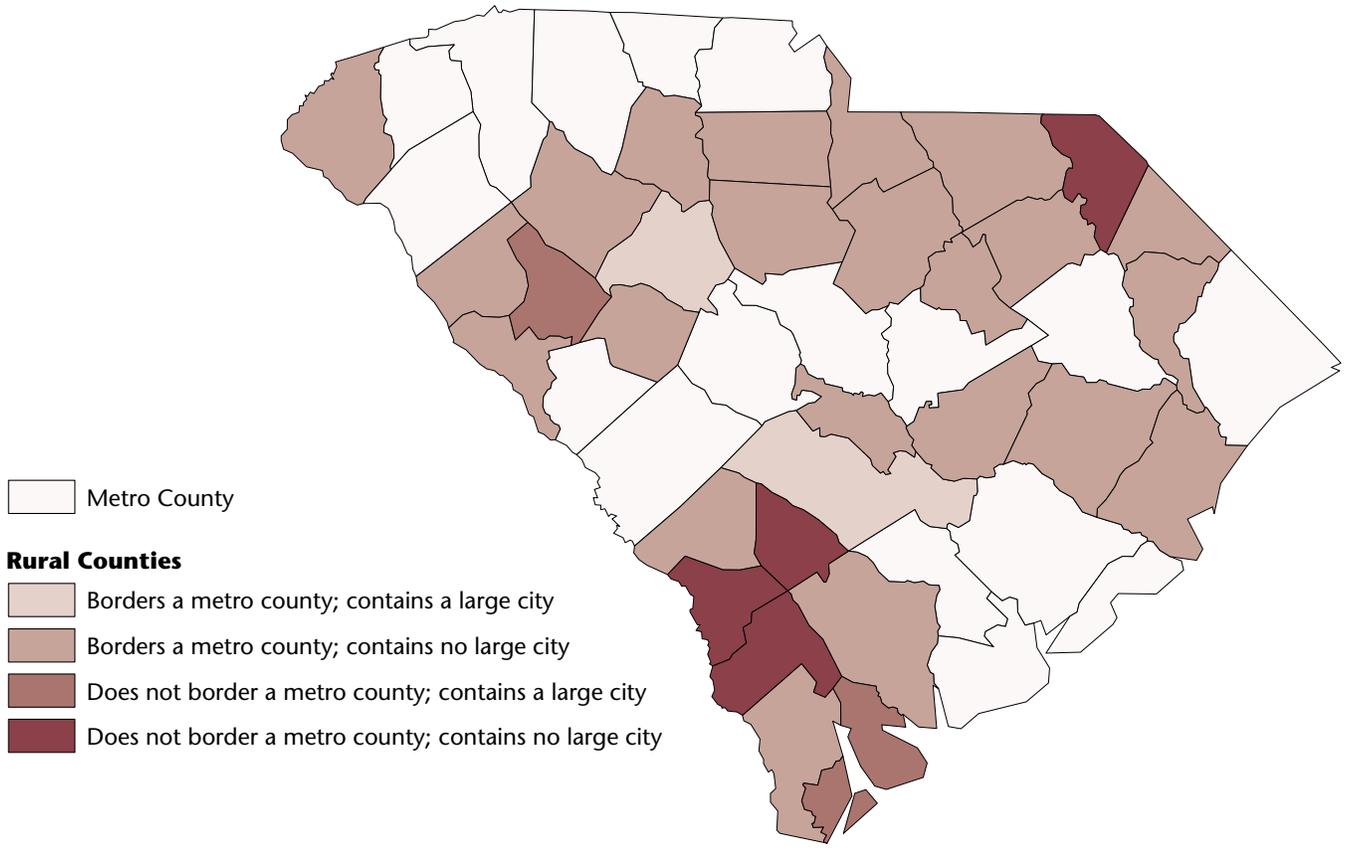


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	134	192	...	...	...	...	...	...
Generalist physicians	47	76	...	...	...	...	...	...
Medical specialists	13	21	...	...	...	...	...	...
Surgical specialists	40	42	...	...	...	...	...	...
General surgeons	14	9	...	...	...	...	...	...
OB-GYNs	9	9	...	...	...	...	...	...
Other surgeons	17	23	...	...	...	...	...	...
Other specialists	34	56	...	...	...	...	...	...
Dentists	48	54	...	...	...	...	...	...
PAs	8	6	...	...	...	...	...	...
Full-time RNs (hospital-based)	239	55	...	...	...	...	...	...
Part-time RNs (hospital-based)	0	174	...	...	...	...	...	...

... No counties of this type

SOUTH CAROLINA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	2,806,962	1,205,050	4,012,012	15.1	26	21	26
% population > 65	11.5	13.5	12.1	6.3	26	36	31
% population < 15	20.8	21.2	20.9	-4.7	37	15	29
Per capita income (\$)	25,096	21,433	23,996	13.6	45	32	40
% families in poverty	9.4	13.8	10.7	-9.6	12	9	11

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	201	112	174	40.2	40	33	34
Generalist physicians	64	51	60	28.0	45	39	42
Medical specialists	32	11	26	94.2	39	30	35
Surgical specialists	51	28	44	26.0	28	22	22
General surgeons	11	8	10	9.3	22	22	20
OB-GYNs	12	8	11	35.1	21	9	16
Other surgeons	28	11	23	30.2	30	30	30
Other specialists	58	25	48	57.5	38	33	33
Dentists	30	25	29	-2.4	48	40	45
PAs	10	4	8	-21.2	41	42	41
Full-time RNs (hospital-based)	328	191	287	11.4	19	30	21
Part-time RNs (hospital-based)	140	82	123	32.8	35	38	35

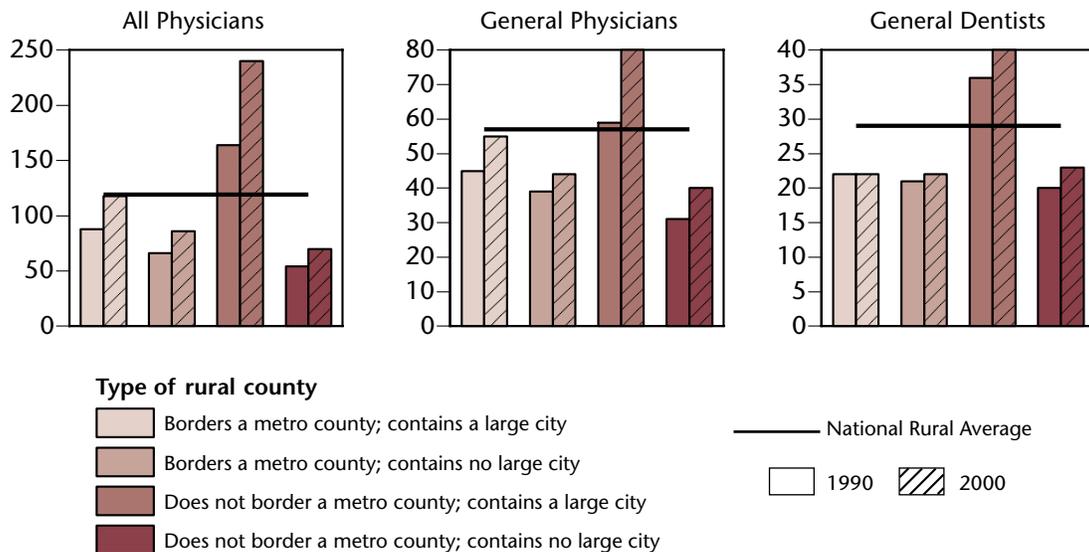
See page 155 for data sources and explanatory notes.

SOUTH CAROLINA

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	2	22	2	4
Population	127,690	812,079	187,208	78,073
Short-term general hospitals	2	19	4	4
Hospital beds/100,000 persons	284	251	344	446
% pop. in persistent poverty counties	71.7	39.3	0	100
Per capita income (\$)	19,907	20,229	29,119	18,023
% families in poverty	16.0	14.0	8.7	20.5

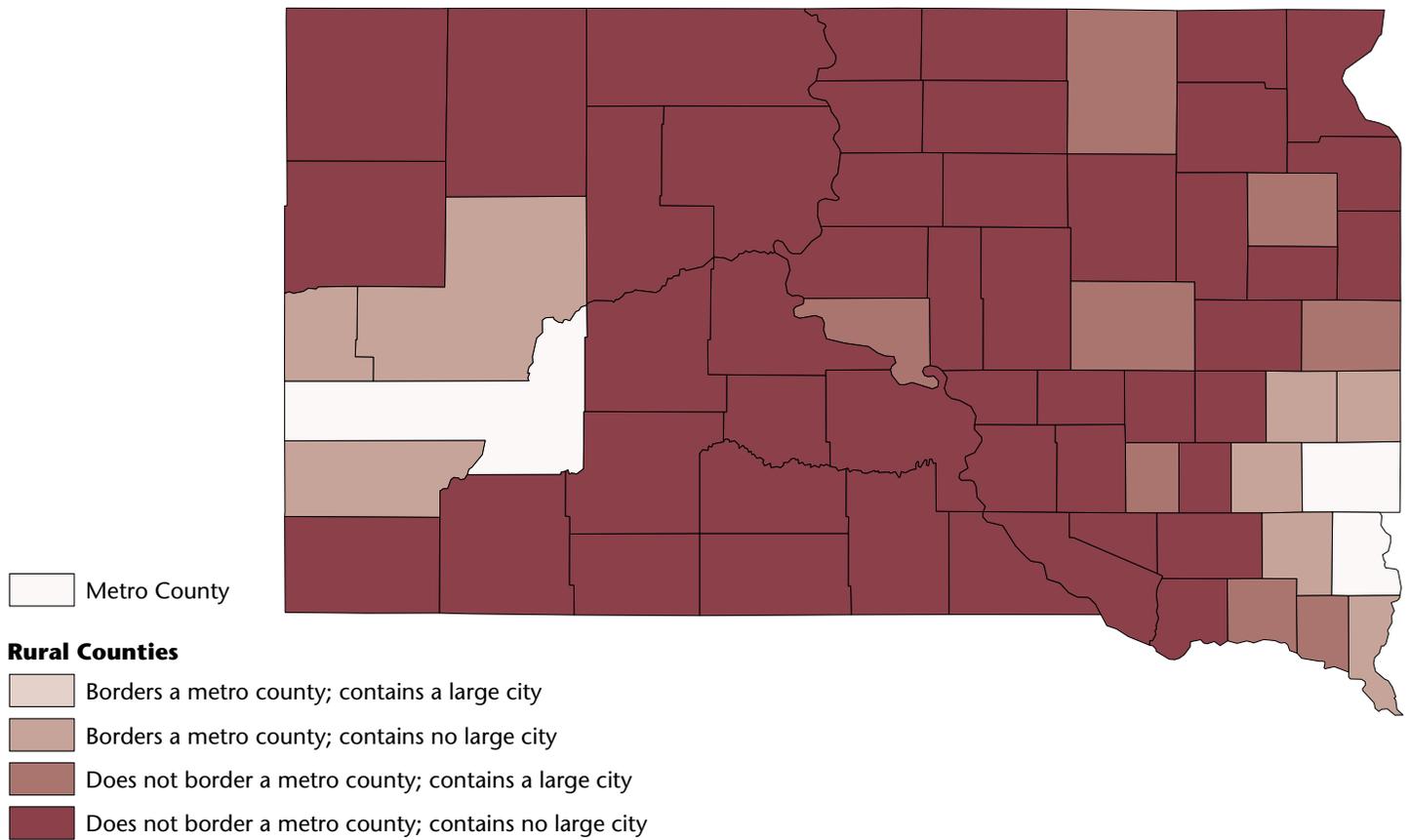
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	88	118	66	86	164	240	54	70
Generalist physicians	45	55	39	44	59	80	31	40
Medical specialists	7	20	3	7	10	21	5	10
Surgical specialists	22	26	15	18	54	75	10	12
General surgeons	7	6	6	7	14	17	7	3
OB-GYNs	4	8	4	6	17	22	3	4
Other surgeons	11	12	5	6	23	37	1	5
Other specialists	14	23	9	17	40	65	7	10
Dentists	22	22	21	22	36	40	20	23
PAs	12	2	8	3	0	7	0	8
Full-time RNs (hospital-based)	187	267	126	161	250	294	116	137
Part-time RNs (hospital-based)	62	88	44	76	72	111	34	70

SOUTH DAKOTA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	260,977	493,867	754,844	8.4	46	37	46
% population > 65	11.2	16.0	14.3	-2.5	30	10	8
% population < 15	22.1	21.7	21.9	-9.8	13	10	12
Per capita income (\$)	29,219	24,232	25,956	21.4	26	12	33
% families in poverty	6.1	11.0	9.3	-19.8	38	18	17

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	286	112	172	34.9	3	34	36
Generalist physicians	86	61	70	16.1	13	20	31
Medical specialists	56	4	22	106.6	3	49	46
Surgical specialists	70	27	42	32.9	2	23	30
General surgeons	14	9	11	3.6	2	8	10
OB-GYNs	11	5	7	32.4	28	32	47
Other surgeons	45	13	24	52.9	2	23	24
Other specialists	76	21	40	59.2	10	39	46
Dentists	43	31	35	-6.8	22	26	33
PAs	28	33	32	99.6	6	2	2
Full-time RNs (hospital-based)	584	282	386	-0.8	1	5	2
Part-time RNs (hospital-based)	416	154	244	7.1	3	14	7

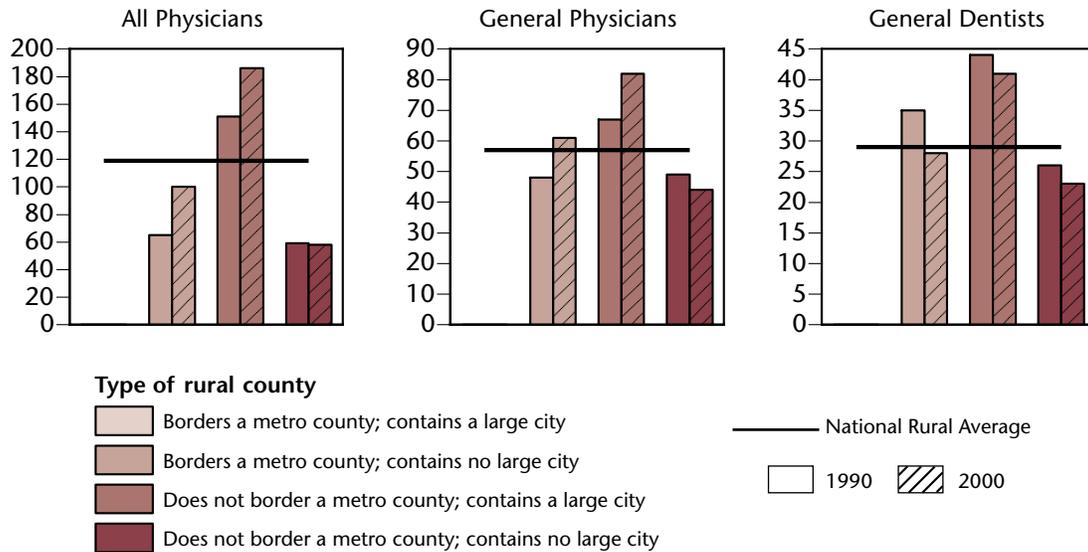
See page 155 for data sources and explanatory notes.

SOUTH DAKOTA

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	8	8	47
Population	...	98,466	177,011	218,390
Short-term general hospitals	...	8	8	30
Hospital beds/100,000 persons	...	637	763	596
% pop. in persistent poverty counties	...	0	0	38.9
Per capita income (\$)	...	25,097	26,664	21,869
% families in poverty	...	6.9	7.1	16.1

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

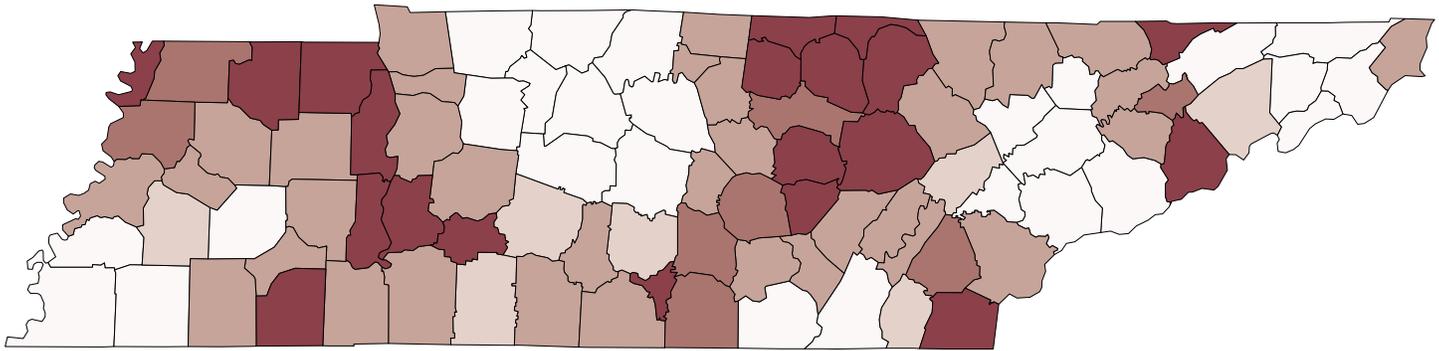


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	65	100	151	186	59	58
Generalist physicians	48	61	67	82	49	44
Medical specialists	0	3	7	8	1	2
Surgical specialists	9	19	50	56	5	7
General surgeons	4	6	17	16	5	5
OB-GYNs	2	6	8	11	0	0
Other surgeons	2	7	25	29	0	2
Other specialists	9	19	26	41	4	5
Dentists	35	28	44	41	26	23
PAs	12	35	29	33	9	33
Full-time RNs (hospital-based)	230	297	368	366	190	207
Part-time RNs (hospital-based)	103	80	290	298	94	70

... No counties of this type

TENNESSEE



Metro County

Rural Counties

- Borders a metro county; contains a large city
- Borders a metro county; contains no large city
- Does not border a metro county; contains a large city
- Does not border a metro county; contains no large city

2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,846,604	1,842,679	5,689,283	16.7	18	9	16
% population > 65	11.4	14.3	12.4	-2.6	27	26	29
% population < 15	20.9	19.6	20.5	-1.0	35	37	39
Per capita income (\$)	28,536	20,543	25,947	17.2	32	36	34
% families in poverty	9.5	11.9	10.3	-16.8	11	14	14

Health Care Providers per 100,000 Population in 2000

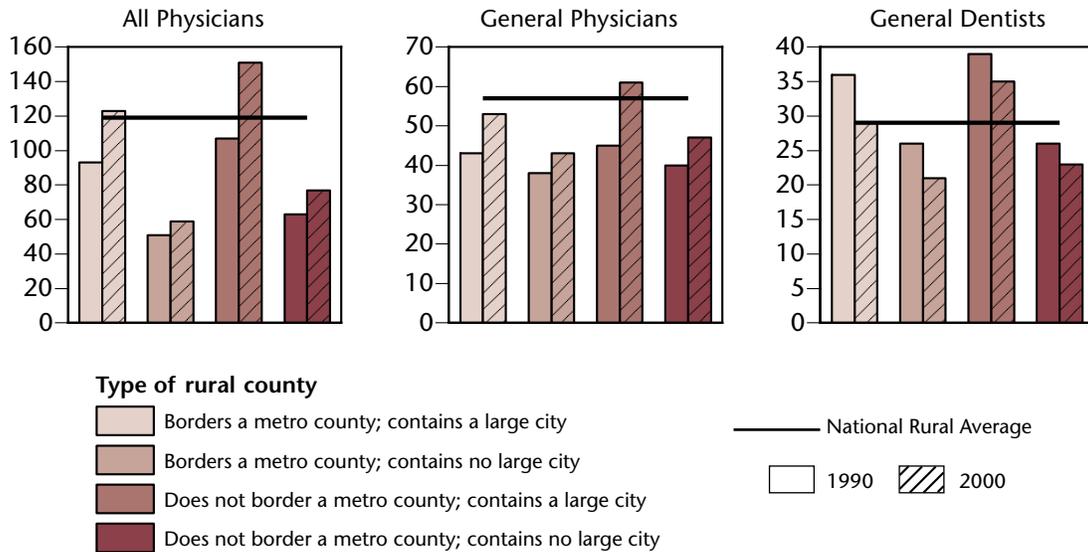
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	240	94	193	28.4	15	45	25
Generalist physicians	76	49	68	30.7	28	42	33
Medical specialists	42	8	31	70.7	17	39	16
Surgical specialists	60	21	48	9.6	9	40	12
General surgeons	12	7	10	-14.0	15	36	14
OB-GYNs	13	5	10	19.8	10	37	22
Other surgeons	35	9	27	17.8	5	40	11
Other specialists	66	17	50	31.2	23	45	27
Dentists	39	26	35	-11.6	32	37	34
PAAs	10	5	8	-20.2	39	40	40
Full-time RNs (hospital-based)	404	172	329	0.2	8	37	9
Part-time RNs (hospital-based)	149	63	121	3.4	31	45	36

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	7	34	8	20
Population	369,591	764,257	364,747	344,084
Short-term general hospitals	9	29	12	13
Hospital beds/100,000 persons	330	237	416	319
% pop. in persistent poverty counties	5.4	35.7	0	29.1
Per capita income (\$)	22,555	19,107	22,623	19,367
% families in poverty	10.1	12.7	11.0	13.0

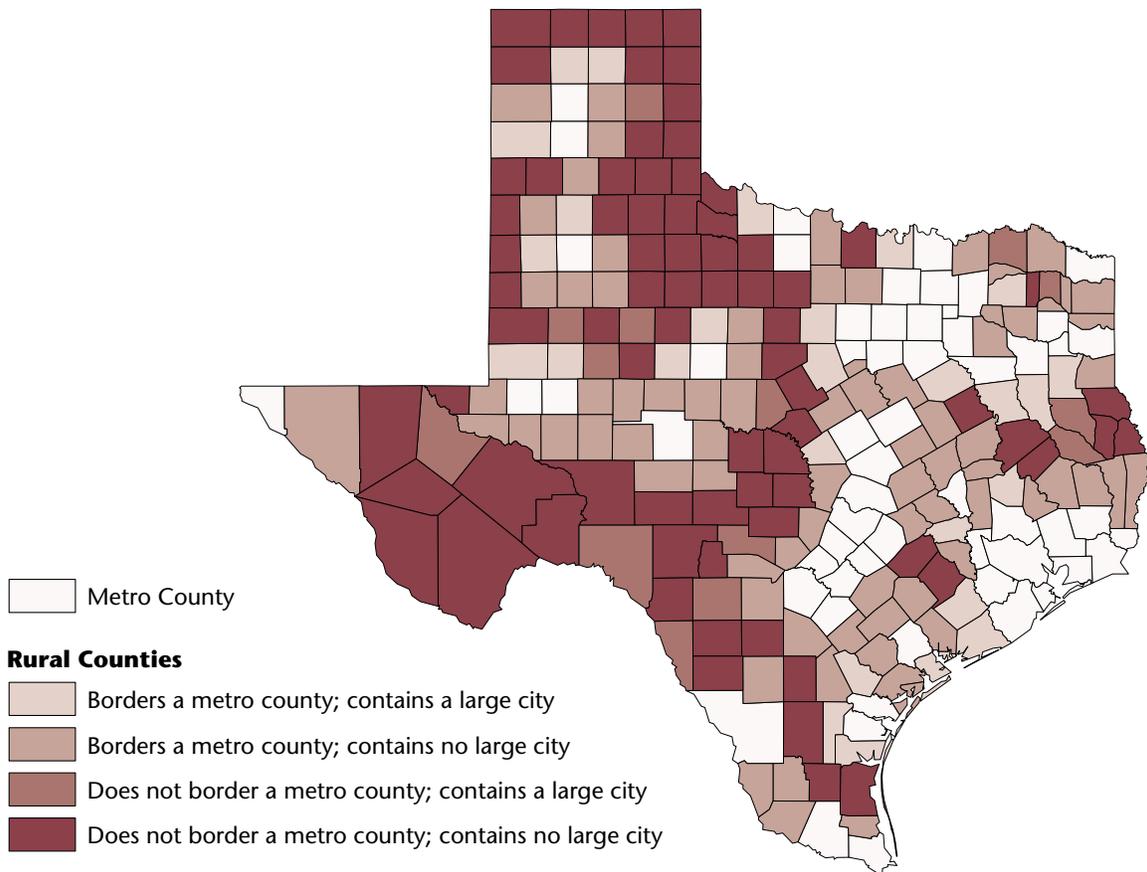
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	93	123	51	59	107	151	63	77
Generalist physicians	43	53	38	43	45	61	40	47
Medical specialists	7	13	0	3	7	19	1	4
Surgical specialists	25	31	8	7	35	41	14	16
General surgeons	8	8	6	4	12	10	8	7
OB-GYNs	4	7	1	2	9	12	2	3
Other surgeons	13	16	1	2	15	19	3	7
Other specialists	18	27	6	7	19	34	8	11
Dentists	36	29	26	21	39	35	26	23
PAs	11	8	3	5	8	4	15	6
Full-time RNs (hospital-based)	181	217	87	110	195	255	149	174
Part-time RNs (hospital-based)	101	75	31	44	57	98	31	58

TEXAS



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	17,691,880	3,159,940	20,851,820	22.8	2	1	2
% population > 65	9.0	15.3	9.9	-1.6	47	17	46
% population < 15	23.9	21.7	23.5	-2.0	3	11	3
Per capita income (\$)	29,042	20,490	27,746	20.7	28	38	24
% families in poverty	11.5	14.5	12.0	-15.0	4	8	8

Health Care Providers per 100,000 Population in 2000

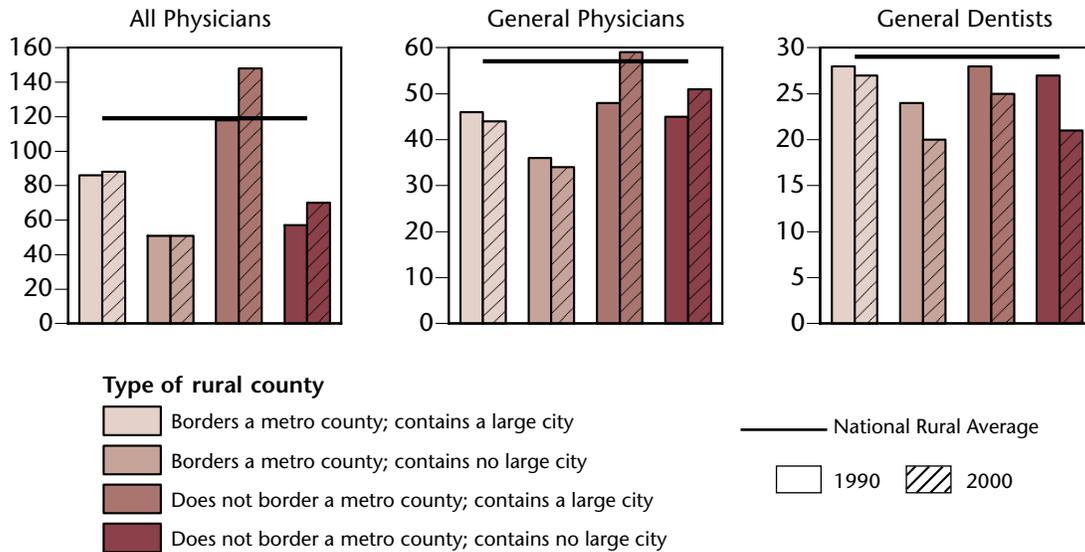
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	180	80	165	17.8	47	47	42
Generalist physicians	61	44	59	17.8	47	48	46
Medical specialists	31	7	27	35.9	40	41	29
Surgical specialists	42	16	38	1.9	46	47	41
General surgeons	8	5	7	-16.5	48	46	49
OB-GYNs	11	4	10	11.5	40	48	30
Other surgeons	23	8	21	6.0	46	46	40
Other specialists	51	15	46	32.0	46	47	38
Dentists	32	23	31	-10.0	44	42	42
PA's	12	13	12	22.0	34	26	34
Full-time RNs (hospital-based)	274	160	256	9.3	32	41	32
Part-time RNs (hospital-based)	87	47	81	4.0	47	48	48

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	27	79	14	76
Population	826,403	1,238,224	516,210	579,103
Short-term general hospitals	34	55	18	55
Hospital beds/100,000 persons	264	153	414	272
% pop. in persistent poverty counties	24.4	39.0	28.3	44.8
Per capita income (\$)	20,684	20,090	20,477	21,081
% families in poverty	13.4	14.4	16.2	14.7

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

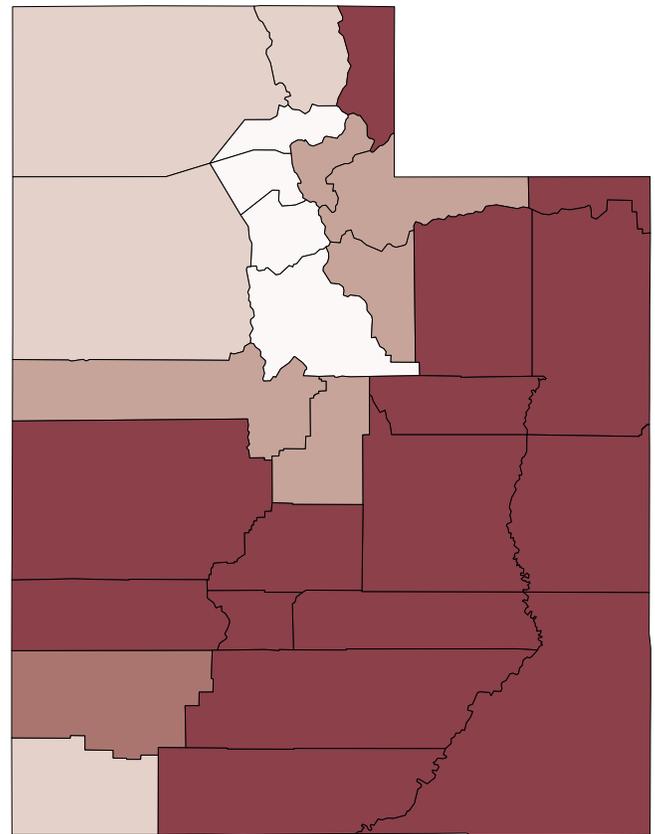
	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	86	88	51	51	118	148	57	70
Generalist physicians	46	44	36	34	48	59	45	51
Medical specialists	5	8	3	4	10	18	1	2
Surgical specialists	24	23	6	6	35	39	7	10
General surgeons	9	7	4	2	10	9	4	4
OB-GYNs	5	6	1	1	6	8	1	2
Other surgeons	10	10	2	2	19	21	2	4
Other specialists	12	16	6	8	26	36	4	7
Dentists	28	27	24	20	28	25	27	21
PAs	9	12	9	12	24	14	5	14
Full-time RNs (hospital-based)	143	186	64	79	262	331	98	142
Part-time RNs (hospital-based)	54	53	19	33	61	78	33	41

UTAH

 Metro County

Rural Counties

-  Borders a metro county; contains a large city
-  Borders a metro county; contains no large city
-  Does not border a metro county; contains a large city
-  Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	1,702,450	530,719	2,233,169	29.6	31	36	34
% population > 65	7.9	10.6	8.5	-2.1	49	48	49
% population < 15	26.5	26.9	26.6	-14.6	1	1	1
Per capita income (\$)	24,573	19,809	23,441	18.8	49	40	44
% families in poverty	5.8	8.5	6.5	-24.5	40	27	40

Health Care Providers per 100,000 Population in 2000

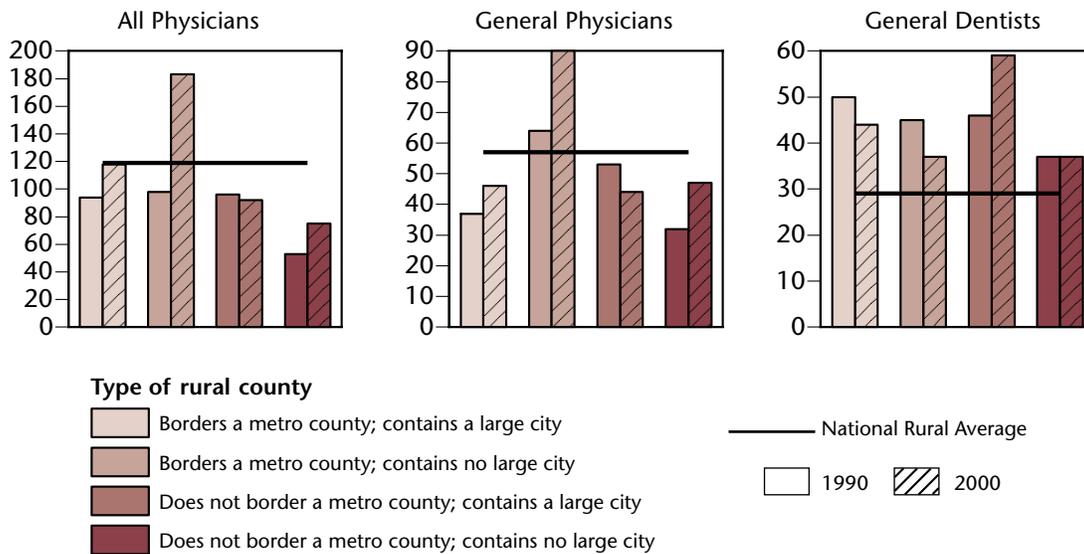
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	174	115	160	15.5	50	27	46
Generalist physicians	56	53	55	24.5	50	35	49
Medical specialists	27	9	23	40.1	49	35	45
Surgical specialists	44	25	39	-1.7	42	29	38
General surgeons	8	6	7	-16.3	47	43	48
OB-GYNs	11	6	10	4.8	35	24	28
Other surgeons	25	12	22	1.4	39	24	35
Other specialists	50	29	45	13.8	48	24	42
Dentists	44	42	44	-15.2	21	6	16
PA's	14	16	15	143.9	27	21	26
Full-time RNs (hospital-based)	180	151	173	-14.0	48	43	48
Part-time RNs (hospital-based)	155	97	141	-3.3	30	31	27

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	4	5	1	15
Population	265,225	83,081	33,779	148,634
Short-term general hospitals	5	4	1	12
Hospital beds/100,000 persons	178	90	101	277
% pop. in persistent poverty counties	0	0	0	9.7
Per capita income (\$)	19,342	25,918	16,104	18,071
% families in poverty	7.1	5.6	13.1	11.4

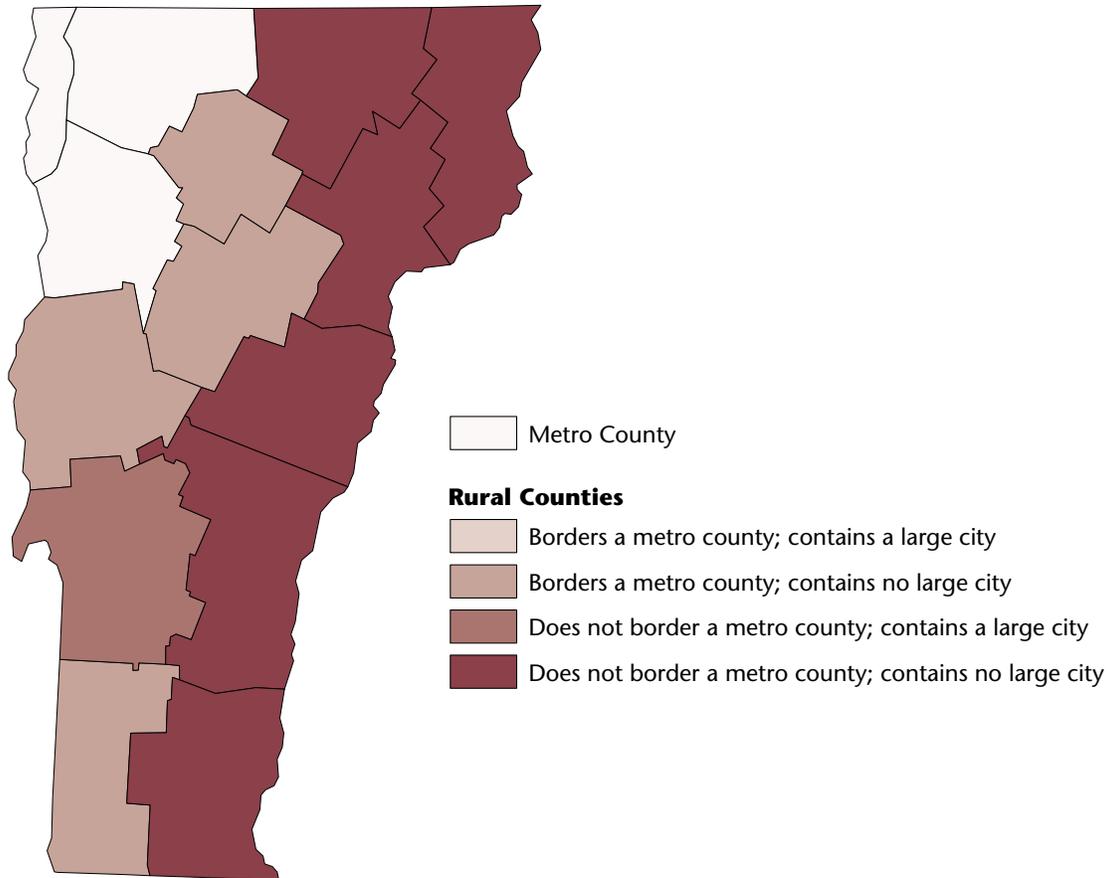
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	94	118	98	183	96	92	53	75
Generalist physicians	37	46	64	90	53	44	32	47
Medical specialists	7	12	4	14	5	3	0	3
Surgical specialists	32	34	8	18	19	27	9	12
General surgeons	8	8	2	5	0	6	2	3
OB-GYNs	9	9	0	2	5	6	4	3
Other surgeons	15	17	6	11	14	15	3	5
Other specialists	18	28	23	66	19	18	12	13
Dentists	50	44	45	37	46	59	37	37
PAs	13	14	4	18	0	15	16	19
Full-time RNs (hospital-based)	136	168	62	87	127	189	111	147
Part-time RNs (hospital-based)	122	108	36	36	80	80	105	116

VERMONT



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	198,889	409,938	608,827	8.2	49	39	49
% population > 65	9.9	14.1	12.7	8.3	44	28	26
% population < 15	20.5	19.5	19.8	-8.0	42	39	45
Per capita income (\$)	29,614	25,507	26,848	12.9	24	9	31
% families in poverty	5.5	6.6	6.3	-9.8	47	41	42

Health Care Providers per 100,000 Population in 2000

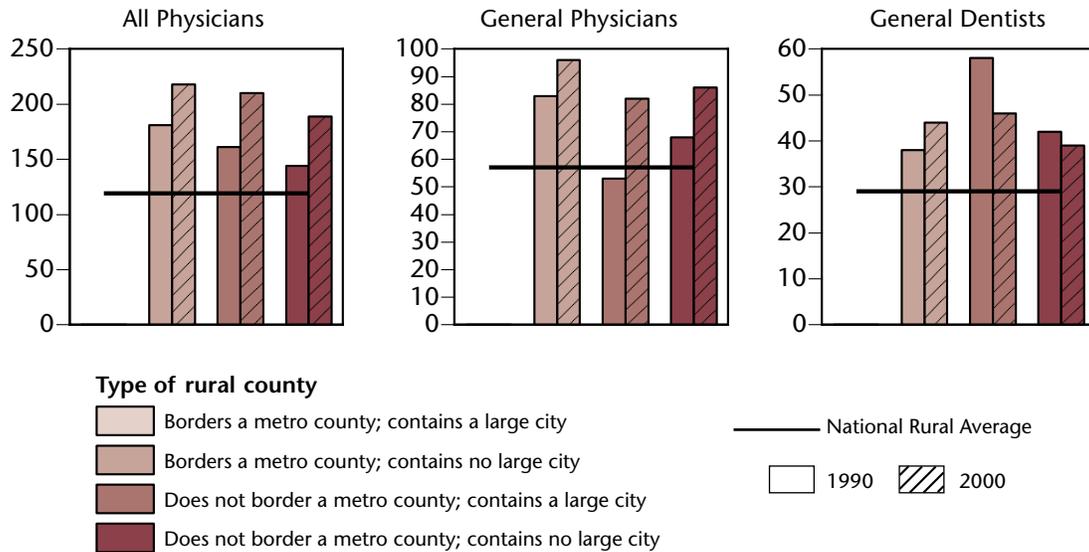
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	323	203	242	33.2	1	2	8
Generalist physicians	107	89	95	31.0	2	1	2
Medical specialists	64	16	32	76.6	1	14	15
Surgical specialists	63	43	50	11.6	4	2	9
General surgeons	14	12	13	0.1	1	2	1
OB-GYNs	13	10	11	7.3	18	3	19
Other surgeons	37	21	26	20.5	4	4	13
Other specialists	109	58	74	52.2	1	2	5
Dentists	45	42	43	-3.0	20	4	19
PAs	25	18	20	56.6	10	16	13
Full-time RNs (hospital-based)	212	159	176	-22.0	43	42	47
Part-time RNs (hospital-based)	453	186	273	49.0	2	7	3

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	4	1	6
Population	...	154,240	63,400	192,298
Short-term general hospitals	...	4	1	8
Hospital beds/100,000 persons	...	381	208	235
% pop. in persistent poverty counties	...	0	0	0
Per capita income (\$)	...	26,536	25,279	24,756
% families in poverty	...	5.9	7.1	7.0

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	181	218	161	210	144	189
Generalist physicians	83	96	53	82	68	86
Medical specialists	10	14	16	28	11	14
Surgical specialists	44	47	48	47	29	38
General surgeons	13	13	16	9	12	12
OB-GYNs	8	10	8	9	7	10
Other surgeons	23	24	24	28	11	16
Other specialists	43	63	43	58	37	54
Dentists	38	44	58	46	42	39
PAs	9	16	14	14	7	20
Full-time RNs (hospital-based)	200	147	163	185	192	160
Part-time RNs (hospital-based)	122	197	309	259	145	153

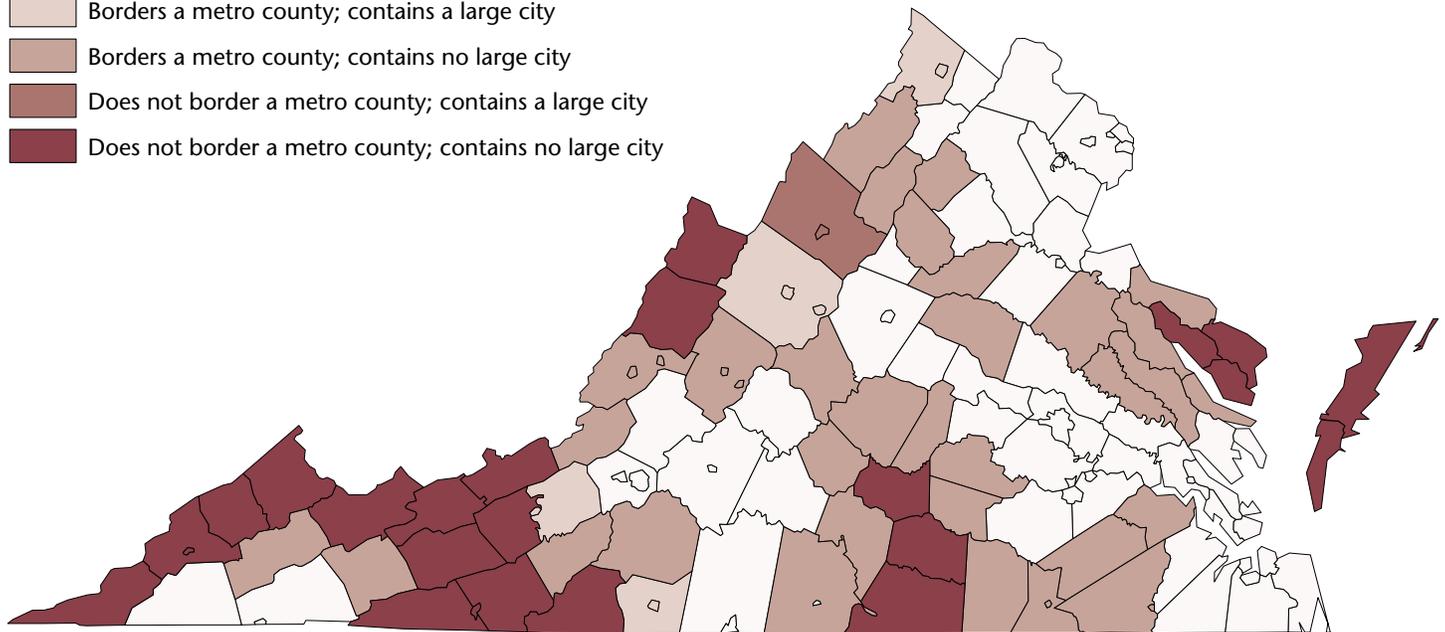
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VIRGINIA

 Metro County

Rural Counties

-  Borders a metro county; contains a large city
-  Borders a metro county; contains no large city
-  Does not border a metro county; contains a large city
-  Does not border a metro county; contains no large city



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	5,528,068	1,550,447	7,078,515	14.4	12	15	12
% population > 65	10.1	14.9	11.2	4.2	43	20	43
% population < 15	21.2	18.1	20.5	0.3	28	47	38
Per capita income (\$)	31,759	18,468	28,847	6.1	13	47	18
% families in poverty	6.2	9.8	7.0	-9.6	36	22	34

Health Care Providers per 100,000 Population in 2000

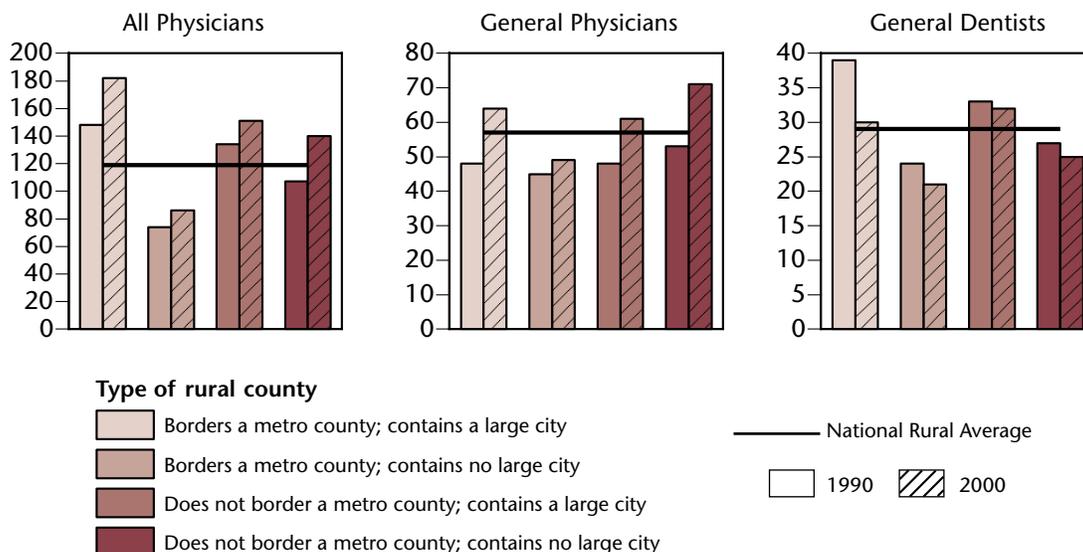
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	212	129	194	25.8	35	21	24
Generalist physicians	73	60	70	29.1	33	23	28
Medical specialists	34	13	30	58.5	33	19	22
Surgical specialists	50	30	46	11.9	30	18	16
General surgeons	10	8	9	-0.3	27	15	23
OB-GYNs	13	8	12	16.0	17	13	10
Other surgeons	28	14	25	15.3	31	21	19
Other specialists	59	28	52	26.0	36	25	25
Dentists	40	25	37	-2.8	29	39	30
PAs	10	6	9	62.4	40	39	39
Full-time RNs (hospital-based)	278	236	269	6.1	31	18	27
Part-time RNs (hospital-based)	109	83	103	-2.2	42	37	42

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	9	38	2	24
Population	364,616	605,528	108,193	472,110
Short-term general hospitals	5	11	1	18
Hospital beds/100,000 persons	245	222	222	398
% pop. in persistent poverty counties	0	3.0	0	12.0
Per capita income (\$)	16,615	19,837	13,823	19,209
% families in poverty	7.2	9.4	6.9	12.6

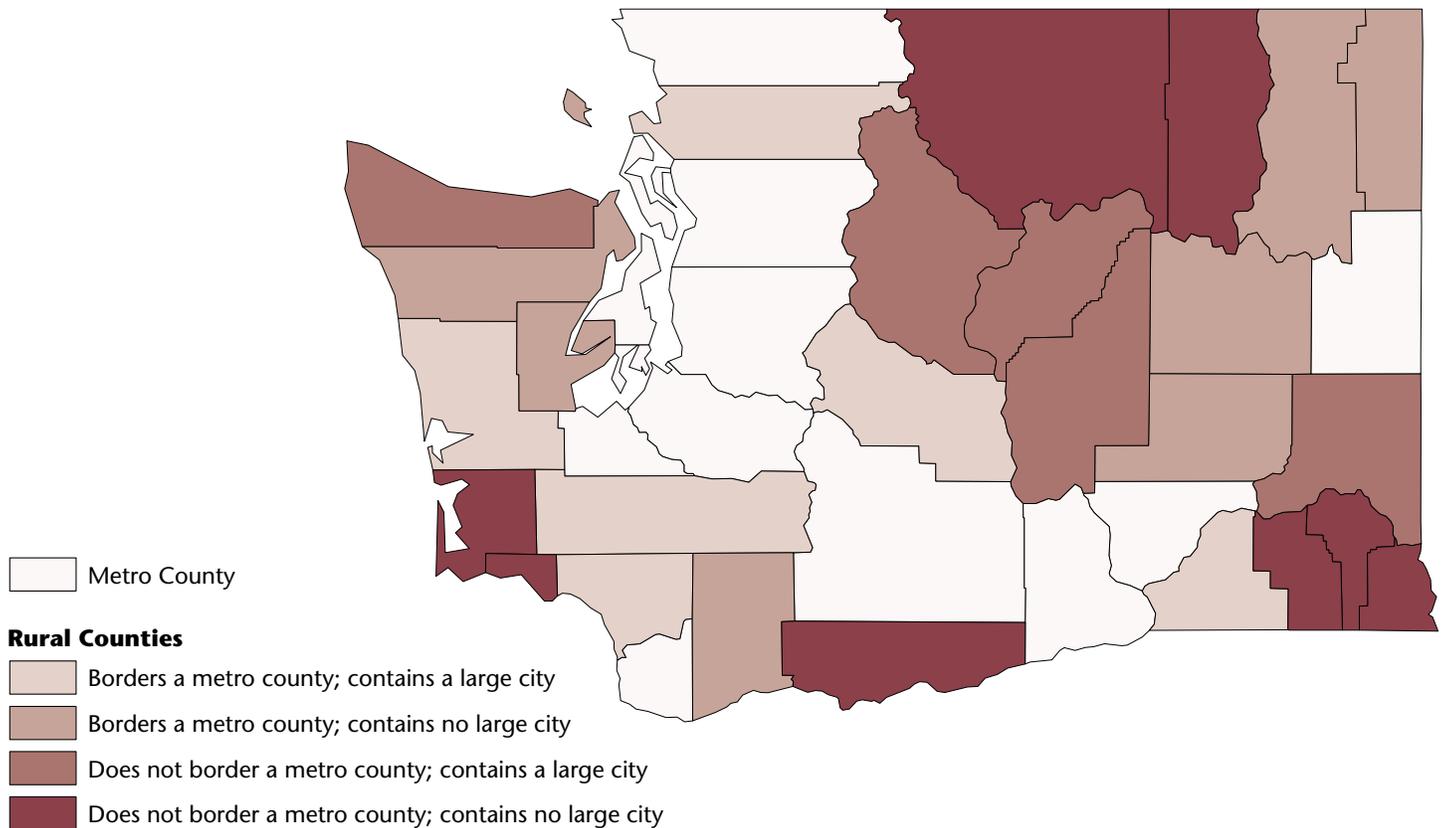
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	148	182	74	86	134	151	107	140
Generalist physicians	48	64	45	49	48	61	53	71
Medical specialists	13	22	3	6	11	19	6	12
Surgical specialists	46	49	13	15	37	32	26	32
General surgeons	9	9	5	6	9	6	10	11
OB-GYNs	9	13	3	4	7	8	6	8
Other surgeons	27	28	5	6	22	18	10	12
Other specialists	40	47	13	17	37	38	22	26
Dentists	39	30	24	21	33	32	27	25
PAs	4	11	3	3	0	6	3	6
Full-time RNs (hospital-based)	271	353	106	140	247	222	233	272
Part-time RNs (hospital-based)	107	130	30	55	131	183	51	60

WASHINGTON



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	4,899,154	994,967	5,894,121	21.1	15	28	15
% population > 65	10.5	14.8	11.2	-5.0	39	21	42
% population < 15	21.4	21.0	21.3	-3.6	25	19	21
Per capita income (\$)	32,998	22,592	31,241	18.5	11	25	10
% families in poverty	6.7	10.4	7.3	-6.6	31	20	33

Health Care Providers per 100,000 Population in 2000

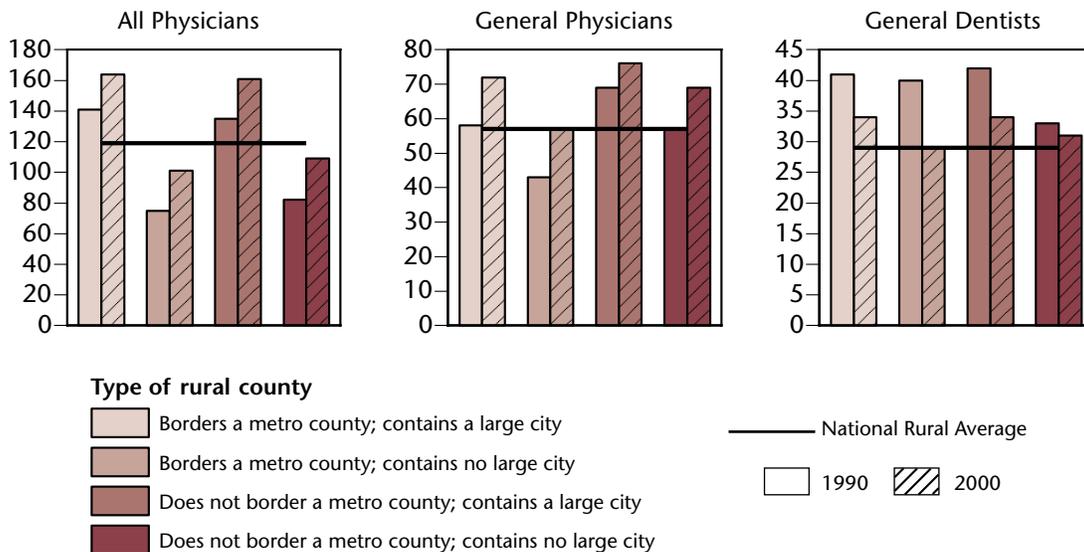
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	210	146	199	17.1	36	13	18
Generalist physicians	78	70	77	18.6	26	8	14
Medical specialists	30	12	27	32.8	43	25	31
Surgical specialists	44	31	42	3.6	40	14	28
General surgeons	8	7	8	-9.6	42	34	38
OB-GYNs	10	7	10	19.2	41	16	27
Other surgeons	26	16	24	3.2	38	13	22
Other specialists	61	35	57	25.3	33	16	18
Dentists	45	33	43	-15.1	18	22	18
PA's	19	21	20	98.9	16	9	15
Full-time RNs (hospital-based)	193	148	185	-8.5	46	44	46
Part-time RNs (hospital-based)	180	174	179	5.0	18	9	17

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	6	8	5	8
Population	420,263	177,717	279,182	117,805
Short-term general hospitals	11	10	8	11
Hospital beds/100,000 persons	276	258	207	315
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	23,265	22,468	22,271	21,140
% families in poverty	10.0	9.7	10.5	12.5

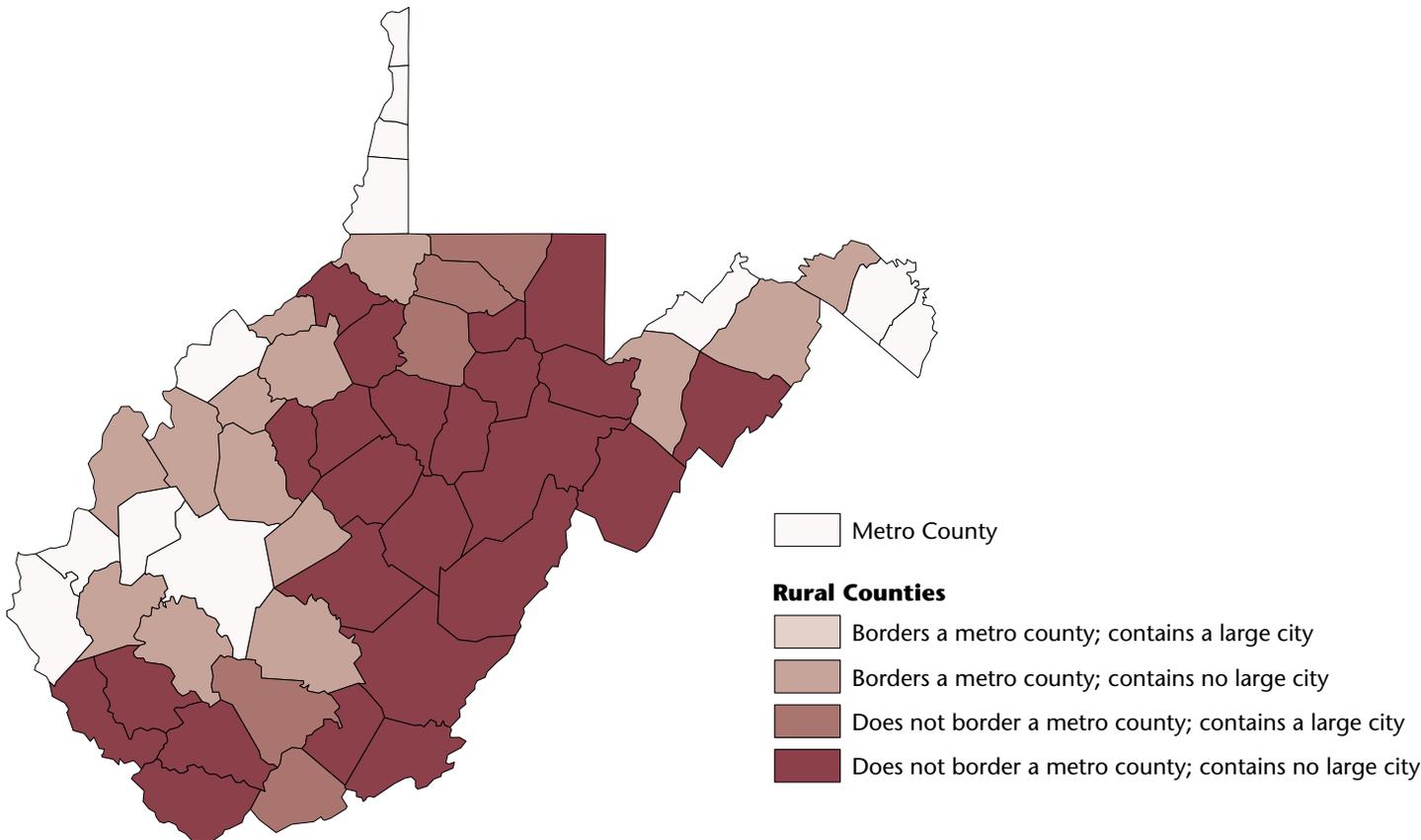
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	141	164	75	101	135	161	82	109
Generalist physicians	58	72	43	57	69	76	57	69
Medical specialists	9	13	1	5	8	15	4	8
Surgical specialists	39	39	15	18	32	34	5	10
General surgeons	9	9	7	7	7	6	2	3
OB-GYNs	8	10	1	3	7	8	2	3
Other surgeons	21	21	6	8	19	20	1	4
Other specialists	34	42	15	23	25	38	17	25
Dentists	41	34	40	29	42	34	33	31
PAs	11	17	9	31	7	17	5	26
Full-time RNs (hospital-based)	189	177	113	83	132	112	171	227
Part-time RNs (hospital-based)	151	216	69	145	100	150	34	127

WEST VIRGINIA



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	765,568	1,042,776	1,808,344	0.8	41	26	37
% population > 65	15.3	15.3	15.3	2.1	3	16	3
% population < 15	18.4	18.0	18.2	-9.7	50	48	50
Per capita income (\$)	24,731	19,539	21,737	13.2	48	42	49
% families in poverty	10.9	16.1	13.9	-13.2	7	4	4

Health Care Providers per 100,000 Population in 2000

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	240	162	195	29.9	16	9	23
Generalist physicians	90	76	82	37.3	9	5	12
Medical specialists	35	22	27	53.2	30	5	28
Surgical specialists	54	33	42	6.8	19	12	29
General surgeons	12	10	11	-5.6	14	3	9
OB-GYNs	11	7	9	11.4	38	18	40
Other surgeons	32	16	22	12.2	14	14	34
Other specialists	67	37	50	47.8	22	13	29
Dentists	37	28	32	-0.8	36	32	40
PA's	20	29	25	83.5	15	4	8
Full-time RNs (hospital-based)	510	332	407	28.9	3	2	1
Part-time RNs (hospital-based)	179	104	136	9.8	20	26	29

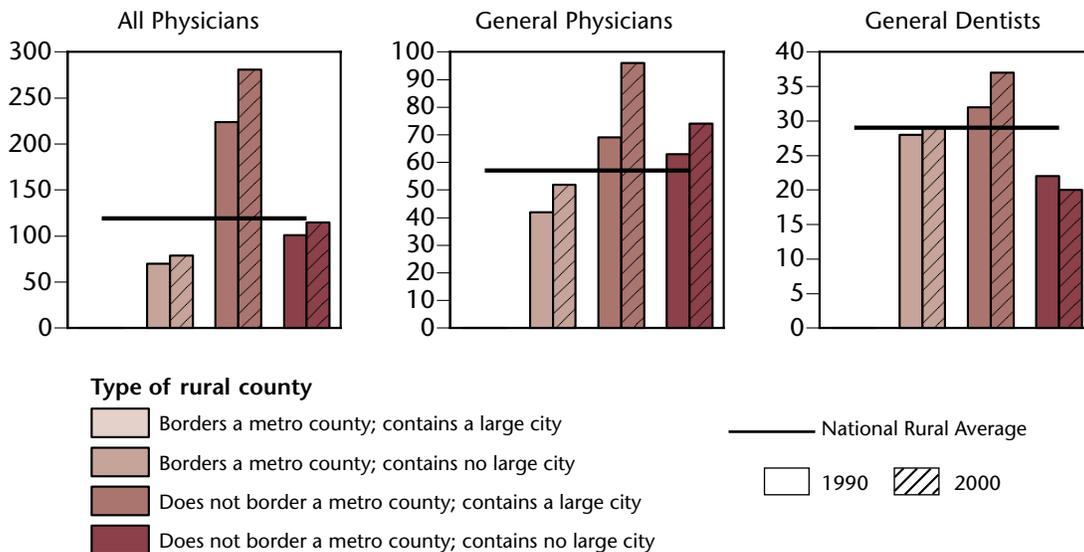
See page 155 for data sources and explanatory notes.

WEST VIRGINIA

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	14	5	24
Population	...	262,823	349,316	430,637
Short-term general hospitals	...	10	11	18
Hospital beds/100,000 persons	...	282	664	294
% pop. in persistent poverty counties	...	12.3	0	30.1
Per capita income (\$)	...	18,292	22,770	17,680
% families in poverty	...	16.2	13.3	18.1

Rural Snapshot: Provider Availability – Changes and Comparison to National Average

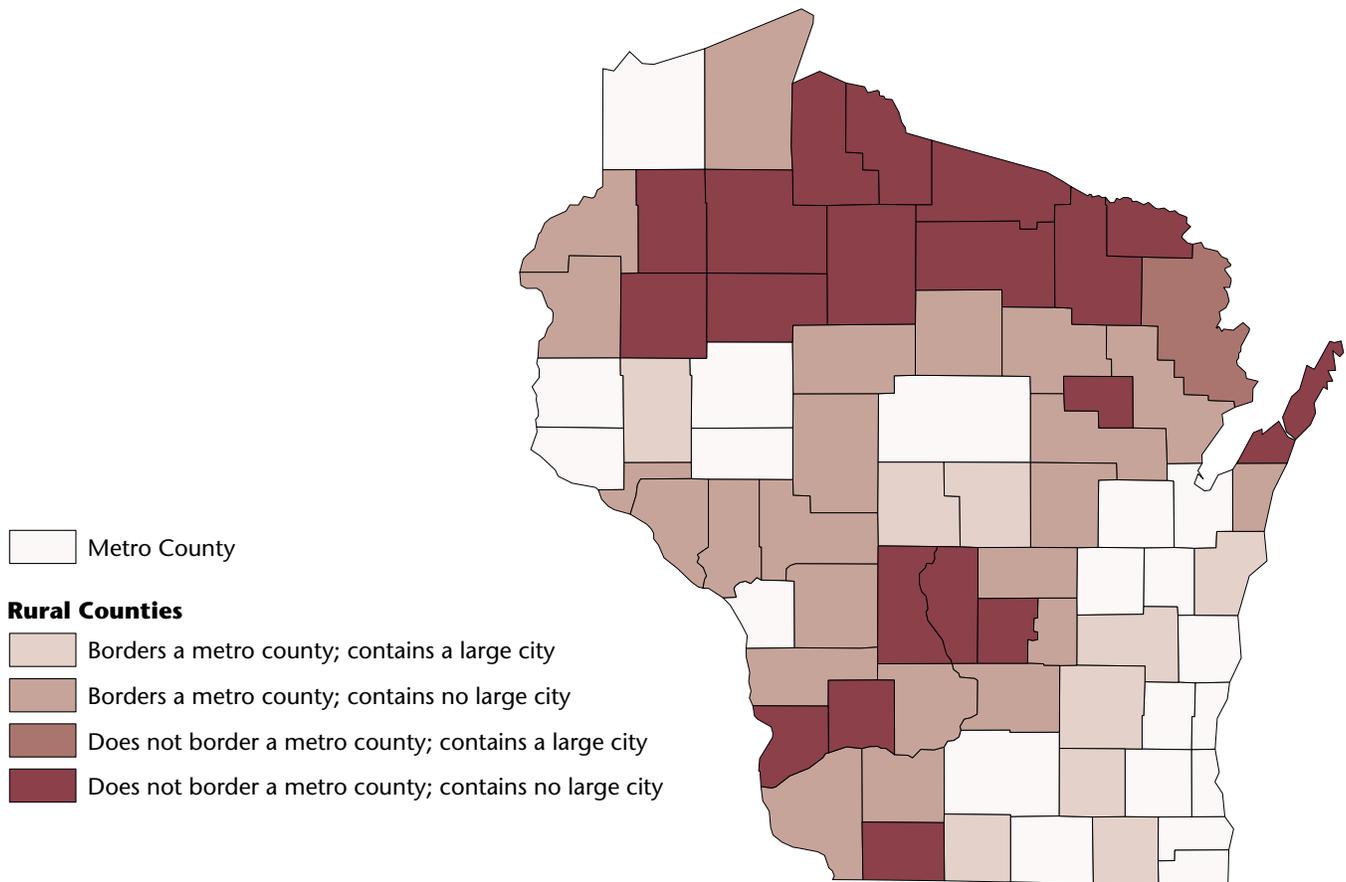


Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	70	79	224	281	101	115
Generalist physicians	42	52	69	96	63	74
Medical specialists	4	5	34	50	7	9
Surgical specialists	13	13	65	67	18	18
General surgeons	8	8	16	17	8	7
OB-GYNs	3	2	12	14	4	5
Other surgeons	2	3	37	36	6	6
Other specialists	11	12	58	80	13	18
Dentists	28	29	32	37	22	20
PAs	1	14	19	36	11	33
Full-time RNs (hospital-based)	131	160	477	637	158	190
Part-time RNs (hospital-based)	42	46	118	217	40	48

... No counties of this type

WISCONSIN



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	3,640,308	1,723,367	5,363,675	9.6	20	12	18
% population > 65	12.0	15.5	13.1	-1.6	17	15	20
% population < 15	21.3	20.2	21.0	-5.9	26	29	26
Per capita income (\$)	30,403	23,228	28,098	17.5	20	17	19
% families in poverty	5.8	5.3	5.6	-26.1	45	47	48

Health Care Providers per 100,000 Population in 2000

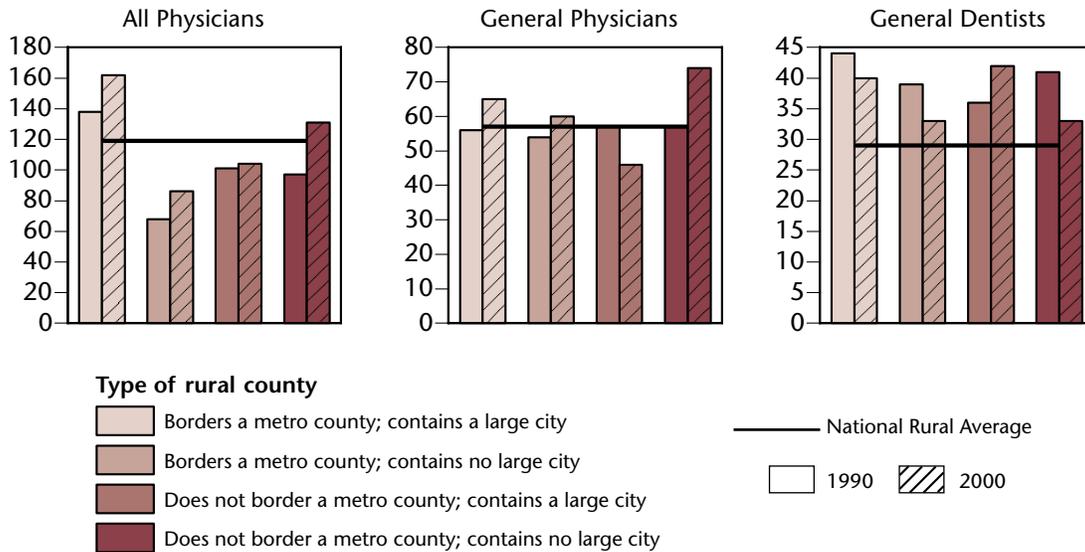
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	225	124	192	27.5	24	23	26
Generalist physicians	79	64	74	24.2	23	16	24
Medical specialists	35	11	27	62.4	31	26	27
Surgical specialists	48	24	40	11.8	33	34	34
General surgeons	9	8	9	-3.0	32	25	33
OB-GYNs	11	4	9	11.1	39	44	38
Other surgeons	28	12	23	19.1	28	28	29
Other specialists	67	27	54	39.6	19	27	23
Dentists	47	36	43	-15.1	11	15	17
PAs	16	14	16	144.9	26	25	25
Full-time RNs (hospital-based)	213	143	191	-7.0	42	45	45
Part-time RNs (hospital-based)	290	151	246	7.3	6	15	6

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	9	23	1	19
Population	650,102	682,251	43,384	347,630
Short-term general hospitals	14	31	1	17
Hospital beds/100,000 persons	293	308	265	357
% pop. in persistent poverty counties	0	0	0	0
Per capita income (\$)	25,233	22,105	21,923	21,847
% families in poverty	4.1	5.6	5.6	6.7

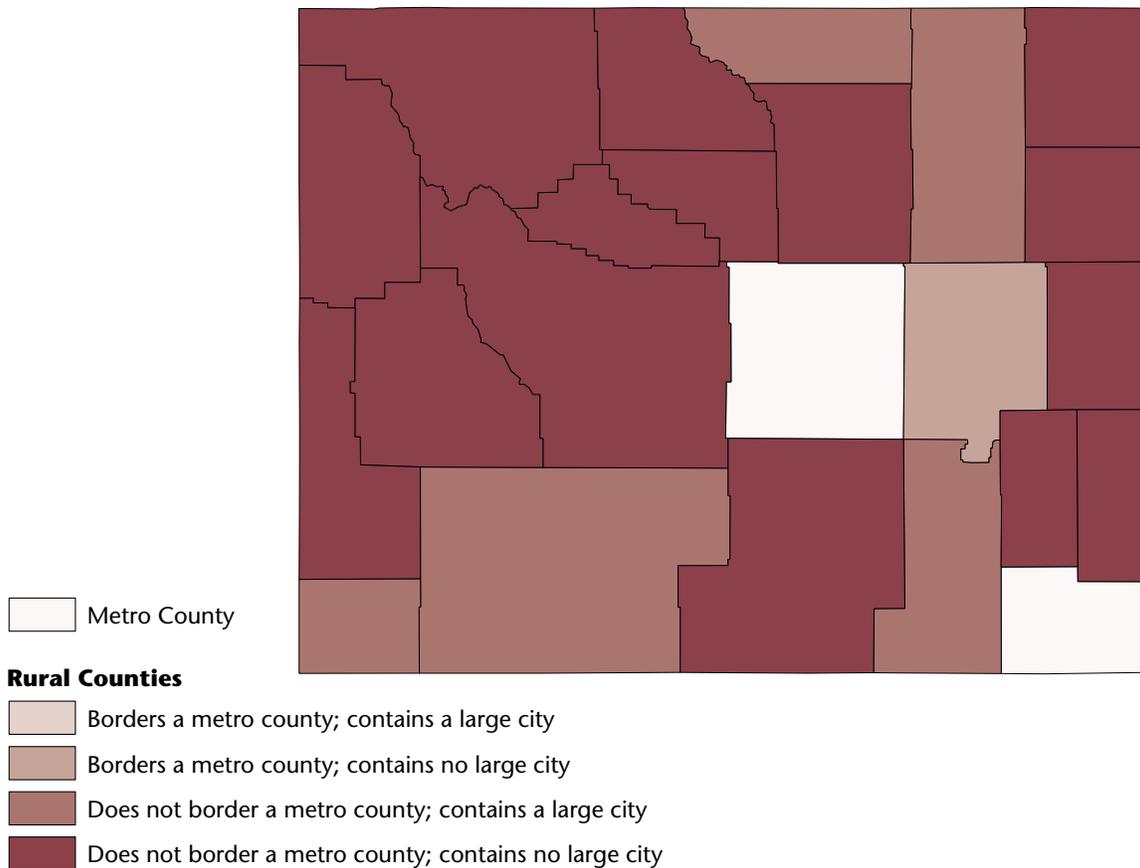
Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	138	162	68	86	101	104	97	131
Generalist physicians	56	65	54	60	57	46	57	74
Medical specialists	17	23	0	3	5	9	2	6
Surgical specialists	34	36	8	11	27	32	22	27
General surgeons	9	8	6	7	7	7	10	10
OB-GYNs	7	7	0	1	7	9	3	6
Other surgeons	18	21	2	3	12	16	10	12
Other specialists	32	43	6	13	12	16	15	26
Dentists	44	40	39	33	36	42	41	33
PAs	2	13	4	15	5	7	7	16
Full-time RNs (hospital-based)	159	169	108	95	164	95	198	196
Part-time RNs (hospital-based)	201	202	113	111	149	260	142	122

WYOMING



2000 Demography

	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (Rank)
Total population	148,140	345,642	493,782	8.9	50	43	50
% population > 65	12.0	11.5	11.7	12.3	16	47	37
% population < 15	21.2	20.8	20.9	-16.9	29	20	27
Per capita income (\$)	29,866	26,295	27,366	15.5	22	6	27
% families in poverty	7.5	8.3	8.0	-13.6	24	29	24

Health Care Providers per 100,000 Population in 2000

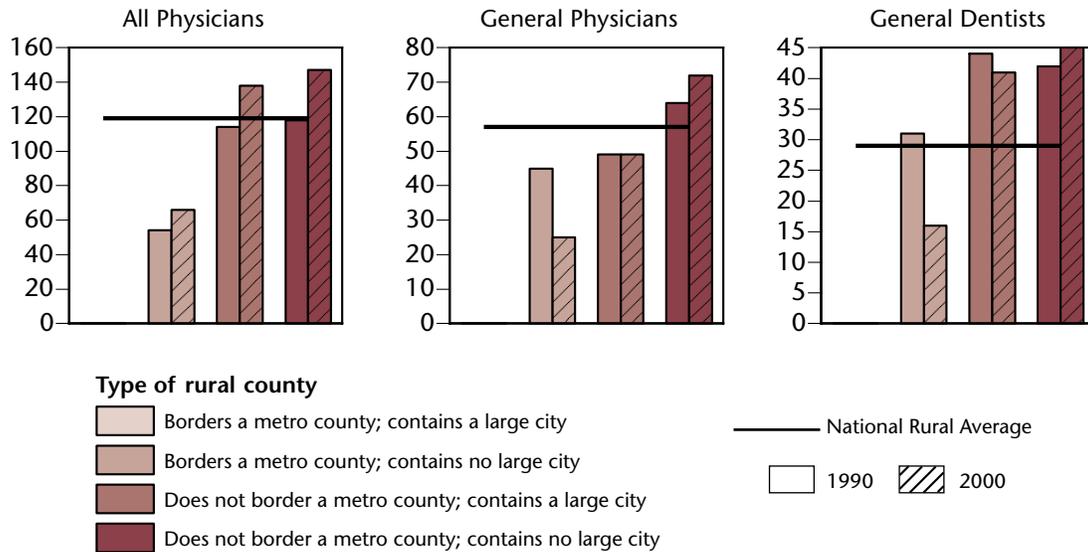
	Metro	Rural	Total	% Change from 1990	Metro (Rank)	Rural (Rank)	Total (rank)
Physicians	199	140	158	21.0	42	14	47
Generalist physicians	71	60	64	8.4	36	21	37
Medical specialists	28	6	13	141.1	48	44	50
Surgical specialists	53	36	42	17.7	22	8	31
General surgeons	9	9	9	1.0	31	11	31
OB-GYNs	9	9	9	18.1	49	6	34
Other surgeons	34	19	23	25.3	8	11	26
Other specialists	51	40	43	37.8	47	11	44
Dentists	42	42	42	-1.0	25	5	21
PAs	26	21	22	363.4	9	8	10
Full-time RNs (hospital-based)	326	236	263	-0.8	20	17	30
Part-time RNs (hospital-based)	60	108	94	-9.0	50	24	46

See page 155 for data sources and explanatory notes.

Health Care Facilities and Access in Rural Counties in 2000

	Type of rural county			
	Bordering metro county		Not bordering metro county	
	Contains large city	Contains no large city	Contains large city	Contains no large city
Number of counties	0	1	5	15
Population	...	12,052	149,627	183,963
Short-term general hospitals	...	1	5	16
Hospital beds/100,000 persons	...	282	239	597
% pop. in persistent poverty counties	...	0	0	0
Per capita income (\$)	...	23,381	26,541	26,285
% families in poverty	...	9.2	7.3	9.0

Rural Snapshot: Provider Availability – Changes and Comparison to National Average



Health Care Providers per 100,000 Population in Rural Counties

	Type of rural county							
	Bordering metro county				Not bordering metro county			
	Contains large city		Contains no large city		Contains large city		Contains no large city	
	1990	2000	1990	2000	1990	2000	1990	2000
Physicians	54	66	114	138	118	147
Generalist physicians	45	25	49	49	64	72
Medical specialists	0	8	1	7	2	5
Surgical specialists	9	25	33	41	26	34
General surgeons	9	17	10	9	7	8
OB-GYNs	0	0	8	11	6	8
Other surgeons	0	8	15	20	14	18
Other specialists	0	8	30	45	25	38
Dentists	31	16	44	41	42	45
PAs	0	8	5	16	8	26
Full-time RNs (hospital-based)	108	224	232	221	235	250
Part-time RNs (hospital-based)	90	58	96	99	101	120

... No counties of this type



Conclusion: Rural Health Care Workforce Issues for the 21st Century

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The geographic maldistribution of health providers is one of the most persistent problems affecting the U.S. health care system. For example, even though the 1990s were marked by rapid expansion in the absolute and relative number of practicing physicians, many small rural areas continue to face physician shortages. Across the country, rural communities still struggle to attract an adequate number of health professionals of all types to provide high quality care to local residents (Rosenblatt & Hart, 1999).

The very nature of rural areas fosters provider shortage and maldistribution. Low population density in general, and smaller numbers of people who can afford health care in particular, make it difficult to sustain financially viable health services, especially in the context of the trend toward managed care. In addition, long distances to health care facilities—especially to tertiary care hospitals—and scarcity of a variety of specialists discourage providers from practicing in remote rural locations because these factors limit providers' options for referrals, emergency care, and call coverage. Finally, while many health providers enjoy living in rural areas, research shows that the majority of providers, especially female providers, prefer to live in urban areas. These structural barriers create a need for special programs to promote the training, deployment, and support of rural health professionals (Rosenblatt & Hart, 1999).

A complex mix of federal, state, and private programs has been developed to address—either directly or indirectly—rural health professional shortages. Federal and state health policies play an essential role in supporting local rural health care systems and the providers whom they employ. For example, without Medicare funding for the elderly, or establishment of rural health clinics, the health care delivery system in rural communities would be seriously compromised. Other programs and policies designed to reduce rural health care provider shortages include federal ameliorative programs such as the National Health Service Corps (NHSC), Community Health Clinics, international medical graduate (IMG) visa waiver programs (e.g., the Conrad-30 Program), and state-based student loan repayment programs. The Small Rural Hospital Flexibility Program, which includes the Critical Access Hospital Program, is helping to create a small rural community environment that is more conducive to the recruitment and retention of health care providers. Changes have also occurred in the education of physicians, with overdue attention to the production of primary care providers and the preparation of providers for rural practice.

Although such efforts have improved the supply of health professionals in some rural areas, we remain far from ensuring equitable health care in small and remote communities. Certain trends suggest that rural-urban disparities will persist well into the future, as described in **Chapter 2**. For example, the tendency of many health care providers to choose specialist disciplines undermines access of rural communities to generalist physicians and other providers. The increasing numbers of female physicians, physician assistants, and other providers, coupled with their lesser propensity to locate in rural areas, may further diminish the supply of rural providers. Other issues that influence the makeup and availability of rural providers, usually in an indirect manner, include Medicare reimbursement policies, initiatives designed to promote quality of care, privacy guarantees, and managed care.

Any solution to the seemingly intractable problem of health care provider shortages in rural America requires sustained, concerted and multidimensional efforts on the part of many parties, including local citizens, providers, and state and federal government policy makers. Ensuring an adequate supply of health professionals will not, on its own, solve the myriad challenges involved in guaranteeing adequate health care in rural America. But it is a necessary step. To reduce the shortage of rural health care providers, it is critical that policy makers and program implementers better understand the nature and complexity of rural health workforce issues and concepts. Only then can we optimize the outcomes we obtain from our scarce public investments.

To that end, this volume presents workforce statistics, trends, and conceptual tools to help policy makers comprehend and address key health workforce issues in rural communities. As we explained in **Chapter 3**, understanding the rural health workforce is far from simple. Even defining rural areas proves complicated. Different categorizations exist, and each one has its own strengths and weaknesses. In addition, gathering data about such a basic question as how many providers work in rural areas is currently problematic; accurate, nationally consistent, and timely data are available for very few provider types. Other considerations include methods for counting basic provider supply and associated problems with the use of head counts and inappropriate geographic scales.

Despite such methodological considerations, several national patterns stand out. **Chapter 4** illustrates the wide variation across the 50 states in terms of demography, and provider supply and training. These comparisons illustrate

the power and utility of comparing workforce data across states, but they address only a sample of the issues and information that are important to health care policy. Too often our knowledge of rural workforce is local in nature, leading to myopic vision, programs, and policies that do not take into account major differences among rural areas of the United States. We encourage policy makers and analysts to refer to these figures to evaluate the national health workforce more effectively. For example, analysts can examine comparative state data and see that their state is ranked lowest in the amount of rural training taking place within that state for a particular provider type. This observation provides a broader context in which to frame health workforce policy issues and upon which to develop informed policy directions.

Until now, little research showed how rural areas within states differ in terms of the health care workforce. **Chapter 5**, the crux of this volume, presents specific workforce data for each of the 50 states. The information provides the opportunity to examine rural intrastate variations in provider supply, temporal changes in interstate supply, and to make interstate comparisons. This information is provided to help policy makers, program managers, and policy analysts understand the context of the health workforce situation within their state and others.

This monograph has barely scratched the surface of the issues associated with the rural health workforce. We have included only selected health provider types, for example. Among provider types that we have not included—because there are little or no data available—are some that are critical to the health of rural populations. Furthermore, Chapters 2 and 3 have only briefly and selectively discussed the complex concerns related to the analysis and interpretation of rural health workforce issues. For instance, we did not discuss the various workforce models (e.g., supply, demand, need) or all the various types of relevant data (e.g., provider-based data on vacancy rates). In order to give some additional information about these and other issues, we conclude with a section entitled “**Rural Health Workforce Resources**,” where readers will find references to materials and Web sites that delve more deeply into many of the subjects we discuss throughout this monograph.

Many additional health workforce policy issues will arise at the federal, state, and local levels during the next 10 years. A recent rural health research agenda-setting conference (hosted by the National Rural Health Association in Washington, D.C., 13 August 2000) produced a list of high priority policy and research questions, from which the following questions are modified (Hart, Salsberg, Phillips, & Lishner, 2002). They are not meant to be inclusive, but to provide readers

with ideas about the types and breadth of rural health workforce issues that need to be addressed. The questions highlight physicians because we know the most about their demographics and practice patterns. It is essential that we develop a similar level of knowledge about other provider types, particularly given the increasing role of mid-level providers (e.g., physician assistants and nurse practitioners) in the health care system.

SPECIALTY AND GEOGRAPHIC DISTRIBUTION

- How does the preponderance of generalist physicians and other types of providers in small and remote rural towns influence the type of clinical care provided, and are there consequent outcome differences?
- How has the distribution of physicians and other types of providers changed over time at the sub-county level per the rural-urban continuum?

CHANGE IN DISTRIBUTION ACROSS TIME

- Can generalist physicians be fiscally rewarded enough to practice in adequate numbers in small and remote rural towns and, if they can, what will it cost and how will this influence clinical care?

GENDER AND AGE DISTRIBUTION

- How will the growing number and percentage of female generalist physicians entering practice influence access to physician care within small and remote rural communities? What effects will arise from changes in the gender distribution of other specialties, such as nurses?
- Are there practice, training, and community approaches conducive to increasing the number of female generalist physicians who locate and remain practicing in small and remote rural communities?

DISTRIBUTION BY REGION

- What are the factors that cause the significant regional maldistribution of rural providers? Should we be concerned about the maldistribution, and what practical policies could change the provider distribution?

QUALITY OF CARE

- Is the care provided for chronic conditions by rural generalist providers less intense than that provided by their urban counterparts, and do the differences translate into different patient outcomes?

RECRUITMENT AND RETENTION

- Do IMGs who locate in underserved rural towns continue to practice there?
- How would a change in IMG policy affect rural care?

RURAL TRAINING

- What is the best model of education for rural areas, and how can graduate medical education funds best be distributed to rural sites to cover training costs?
- If rural generalist residency training programs are substantially increased in size, will the rural provider yield justify the expense?
- What are the ramifications of the increasing debt that medical students are incurring regarding their ability to then practice in small rural towns?
- How does the amount of federal funding for training affect medical school and residency production of rural and inner-city generalist physicians?

PRODUCTIVITY AND INCOME

- Are female physicians fairly reimbursed for the rural care they provide compared to their male counterparts?
- Are rural female physicians more or less productive than male physicians, and what are the workforce supply and clinical care consequences of differences in productivity?

REIMBURSEMENT AND MANAGED CARE

- Are reimbursement pressures and red tape overhead increasing the minimum viable size of rural practices, and how will this influence access to care for millions of small- and remote-town rural residents?
- How does the deterioration of components of the rural health care delivery system influence physician recruitment and retention?

FEDERAL AND STATE AMELIORATIVE PROGRAMS

- Is the NHSC more cost effective in producing rural physicians than expanded residency training programs?
- How effective are the Medicare Incentive Payment bonus payments in helping to retain generalist physicians within shortage areas?

MALPRACTICE INSURANCE

- What are the rural workforce and care ramifications of recent dramatically increased malpractice premiums?

SAFETY NET

- Does the safety net work in small and remote rural towns where there is no publicly-funded facility, and if it does work, who pays the cost of care?
- How do rural providers clinically treat indigents when their care is either not paid for or paid for at a deep discount?
- How effective will the increase in federally-funded health clinics be at treating those without access to care and will they be able to find adequate workforce staffing?

TELEHEALTH

- Will clinical telehealth prove to be practical for rural health generalist providers in towns that have provider shortages, and will it increase retention by reducing physician isolation?
- How will clinical telehealth influence generalist provider practice in towns with provider shortages? To what extent and at what cost can it increase the health status of rural populations?

PROVIDER TYPE SCOPE OF PRACTICE OVERLAP

- What are the most efficient and effective provider type configurations for small rural towns and within clinics?

THE NURSING SHORTAGE

- How is the registered nurse shortage influencing rural health care, and what policies and programs can lessen its impact?

The development of a rural health care workforce policy and research agenda under circumstances of scarce resources requires difficult judgments about the health care system. It takes accurate and unbiased data to inform the debates and to facilitate better policy decisions. Only through more thoughtful and informed health workforce policies and decisions can we materially improve the rural health care delivery system and the health of rural populations. Finally, it is paramount to remember that no vision of the future of rural health can come to fruition if it does not promote stable, rewarding, and fulfilling professional and personal lives for rural health care providers.





DATA SOURCES

AMA, 2002; Alaska Dept. of Labor, 2000; BEA, 2003; BHP, 1996; BHP, 2001; BHP, 2002; U.S. Census, 2002a; U.S. Census, 2002b.

URBAN-RURAL DEFINITION

The basic urban-rural classification of counties used in the state workforce profiles corresponds to the metropolitan-nonmetropolitan definition in use in 1999. The four rural categories used are based on the 1996 revision of the Urban Influence Codes (which were still in use in 1999). A revision of the metropolitan-nonmetropolitan definition based on 2000 census data has been released very recently (OMB, 2003). There is as yet, however, no corresponding revision of the Urban Influence Codes (UICs). For this reason, and in order to facilitate comparison of changes in the health care workforce between 1990 and 2000, we elected to use the metropolitan-nonmetropolitan definition and UICs that were in use in 1999 for all the data presented in the profiles.

INCLUDED COUNTIES AND COUNTY-EQUIVALENTS

State and total population, provider and county numbers may differ slightly from previously published data for several reasons. Washington, D.C. has been excluded, accordingly reducing national totals for people and providers. Denali County, AK, has been excluded since it has no UIC code. While there are no health care providers there, people do live there. Thus, state population totals do not match what is published by the Census Bureau. In addition, due to data limitations, we have grouped together data for the Alaska counties Skagway-Hoonah-Angoon and Yakutat. Because of these decisions, the total number of counties and county-equivalents is 3139 instead of 3142.

PHYSICIAN DATA INCLUSIONS AND EXCLUSIONS

Physicians include nonfederal M.D.s and D.O.s who are active in patient care. Physician data for 1990 are comprised of 1990 M.D. information and 1989 D.O. information. Physician data for 2000 are comprised of 2000 M.D. information and 2001 D.O. information. M.D. physician numbers exclude residents, unless otherwise indicated. Also excluded are physicians who are active primarily as administrators, educators or researchers.

DATA ON DENTISTS

Data for 1990 and 2000 for dentists were unavailable. Data for 1987 and 1998, respectively, were substituted.

ORDER OF RANKED DATA

All ranks are descending.

ALASKA DATA

Data for 1990 are unavailable for Alaska for many variables.

NEW JERSEY DATA

New Jersey has no counties that are classified as rural using the UIC county taxonomy. In other taxonomies, such as the RUCAs, New Jersey does have some rural areas.

POVERTY DATA

The variable indicating the percent families under the federal poverty level is based on a census question asked of a representative population sample. The survey was conducted in 2000 but asked about 1999 income. Similarly, information collected in the 1990 census asked about 1989 income.

DATA ON REGISTERED NURSES

RNs enumerated in the state profiles work in short-term general hospitals or in nursing homes. The numbers date from 1991 and 2000.



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FEDERAL AGENCIES

Federal Office of Rural Health Policy (FORHP)
<http://www.ruralhealth.hrsa.gov/>

Bureau of Health Professions
<http://bhpr.hrsa.gov/>

Economic Research Service, U.S. Department of Agriculture
<http://www.ers.usda.gov/>

National Center for Health Workforce Analysis
<http://bhpr.hrsa.gov/healthworkforce/>

ORGANIZATIONS

National Rural Health Association
<http://www.nrharural.org/>

National Organization of State Offices of Rural Health
<http://www.nrharural.org/nosorh/>

ONLINE RESOURCES

The Rural Assistance Center (RAC) is a HRSA funded center that can direct users to a wide variety of rural health and human services information. See <http://www.raconline.org/>

The Maine Rural Health Research Center maintains a searchable database on rural health services research in progress at FORHP funded research centers. See <http://www.rural-health.org>

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University of Washington WWAMI
Rural Health Research Center
Department of Family Medicine
University of Washington
Box 354982
Seattle, WA 98195-4982
(206) 685-0401
(206) 616-4768 (fax)
<http://www.fammed.washington.edu/wwamirhrc/>

South Carolina Rural Health Research Center
200 Stoneridge Drive, Suite 204
Columbia, SC 29210
(803) 251-6317
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Southwest Rural Health Research Center
The School of Rural Public Health
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Bryan, Texas 77808
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(979) 458-0656 (fax)
<http://srphmain.tamu.edu/srhc>

North Carolina Rural Health Research Center
Cecil G. Sheps Center for Health Services Research
725 Airport Road, CB 7590, UNC-CH
Chapel Hill, NC 27599-7590
(919) 966-5541
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http://www.shepscenter.unc.edu/research_programs/Rural_Program/rhp.html

Project HOPE Walsh Center for Rural Health Analysis
7500 Old Georgetown Road, Suite 600
Bethesda, MD 20814-6133
(301) 656-7401
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<http://www.projhope.org/>

RUPRI, Rural Policy Research Institute
University of Nebraska Medical Center
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3333 California Street, Suite 410
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<http://futurehealth.ucsf.edu/cchws.html>

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