RURAL HEALTH CARE IN THE UNITED STATES

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THE CHANGING NATURE OF RURAL HEALTH CARE

In the United States there is a recognized difference between the health-care delivery systems in rural and urban areas. The differences are formally recognized in the Medicare program with special designations for rural hospitals and differences in payments to rural physicians and hospitals. Rural health systems are relatively under-resourced, and many experience shortages of physicians. The proportion of rural hospitals under financial stress is much greater than in urban places. Market and governmental policies have attempted to address some of these disparities by encouraging network development and telemedicine, and by changing the rules for Medicare payments to providers. The health-care conditions of selected rural areas compare unfavorably with the rest of the nation, but overall, rural populations have similar morbidity patterns to urban populations. The public health infrastructure in rural America is not well understood but is potentially the most fragile aspect of the rural health care continuum.

The character of rural health care delivery in the 1990s underwent significant changes due to the rapid transformation of the U.S. health-care system. Rural providers functioned, like their urban counterparts, in a system dominated by fee-for-service payment mechanisms where there were recognizable differences in the philosophies of public and private interests. In the 1990s, both public and private systems began to use managed care principles to control costs, and an emerging emphasis on corporate and business philosophies began to blur the public-private distinction. Rural places felt these changes in ways other than through the dominance of markets by managed care companies because there were fewer opportunities for cost
savings or profit enhancement due to the nature of rural markets (Christianson, 1998). Rural health care changed more as a result of the increased integration and assimilation of professionals and institutions into systems and networks (Moscovice et al., 1997). The pressure of reform across the wider market resulted in important government policy changes for rural health care delivery including the establishment of alternative hospital forms under the Medicare Program, adjustments to other Medicare payment systems that discriminated against rural providers, and the implementation of rural-focused grant programs to encourage networks and system linkages. However, the persistence of recognized and long-standing problems of resource distribution was the salient characteristic of rural health care during the decade.

The distribution of physicians remained skewed toward urban areas; rural America has 20 percent of the nation’s population but less than 11 percent of its physicians. In 1997, patient care physicians in the United States numbered 603,656, of which 64,912 (10.8 percent) practiced in non-metropolitan counties. This imbalance has become worse over time. In 1980, the proportion practicing in non-rural metropolitan counties was 13.6 percent and in 1990, 12 percent. The total supply of patient care physicians grew by 24.3 percent between 1990 and 1997 but by only 11.1 percent in non-metropolitan areas (Pasko & Seidman, 1999). Rural residents have roughly equivalent age-adjusted mortality rates (National Center for Health Statistics, 1998), but

Table 1. Age-adjusted Death Rates According to Race and Urbanization—United States, 1993-1995

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<th>Deaths Per 100,000 Resident Population</th>
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<td>All Races</td>
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<tr>
<td>Large Core Metropolitan</td>
<td>538.2</td>
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<td>459.7</td>
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<td>Medium/Small Metropolitan</td>
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<tr>
<td>Urban Non-Metropolitan</td>
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<td>Rural</td>
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certain rural regions have the highest levels of mortality and morbidity, often accompanied by the fewest health care resources (Ricketts, 1998; Ricketts, Johnson-Webb, & Randolph, 1999). The link between the distribution of these resources and health outcomes is not apparent; for example, Table 1 presents a somewhat mixed message for the relationship between mortality and a person's residence as either urban, suburban or rural.

Rural residents are more often uninsured than urban residents (18.7 percent versus 16.3 percent) (Vistnes & Zuvekas, 1999) and are more likely to report being in fair or poor health, having restricted activity, and lower levels of access to a regular primary care provider (Schur & Franco, 1999).

The important U.S. policy issues in rural health during the 1990s continued to focus on resource disparities, and perhaps the most important were payment policies for Medicare and the supply of health professionals. Also capturing the attention of rural health services researchers and policy makers were developments in technology and organization, including the expansion of the use of telemedicine and an increase in the numbers of rural hospitals and rural practitioners becoming parts of networks and systems. Quality of care became an important issue as a larger proportion of the nation's population was covered by managed care (insurance) plans (Gosfield, 1997). Rural providers were not left out of the trend toward greater scrutiny over practice decisions especially where costs could be reduced (Moscovice & Rosenblatt, 1999). More attention is being paid to health-care outcomes for rural and primary care providers as well as urban and specialist providers (Starfield, 1997). The reality of practice in rural America includes the pressures of managed care on both costs and quality of care (Christianson, 1998). This article reviews these transformations focusing on selected issues most important to rural health-care delivery: the supply of professionals, hospitals, telemedicine, networks and systems, policy issues, rural public health and quality of care in rural health. However, there are health-care issues that are of special concern to rural populations and they are considered first.

**Special Problems in Rural Health**

The rural environment, especially where agriculture, mining, forestry and fishing are important or dominant parts of the economy, present job-associated threats to health (Gerberich, Robertson, Gibson, & Renier, 1996;
Williams, Higgins, Furbee, & Prescott, 1997). For example, agriculture often involves the use of pesticides and herbicides as well as heavy and potentially dangerous machinery. A review of the causes for visits to a single rural emergency department found that work-related injuries accounted for 12.5 percent of over 12,000 injuries (Williams et al., 1997) where the national rate in 1997 was 4.2 percent of emergency department visits (Nourjah, 1999). Rural workers who were injured were more often older; the mean age of patients injured on the job was 33.8 years (range, 16-77 years), compared with a mean age of 27.7 years for all injury visits. Of the 1,539 patients who came to the emergency department with occupational injuries, 12 percent were transported via ambulance. Most (91 percent) were treated and released from the Emergency Department, with the remainder hospitalized. Of workers requiring hospitalization, 97 percent were male, and the average length of stay was 4.4 days (Williams et al., 1997).

Children in rural areas have much higher rates of fatal injury; 1992 data show rural children between the ages of 1 and 19 with a 44 percent higher death rate and those between 1 and 14 with a 20 percent higher mortality risk (Clark, Savitz, & Randolph, 1999). A single-state study in Colorado showed rural children to have significantly higher risk of death from motor vehicle crashes and unintentional firearm injuries (Hwang, Stallones, & Keefe, 1997).

Exposure to cancer-causing agents is recognized as a hazard of rural life both for farmers and farmworkers but also for persons living near fields that are sprayed or where runoff is likely. This results in higher than average rates of cancer for farm populations for brain, stomach, lymphatic and hemopoietic, lip, prostate and skin cancer (Blair, Cantor, Burmeister, & Wiklund, 1985). Rural children have been shown to be at higher risk of exposure and have higher rates of pesticide-related illness (Eskenazi, Bradman, & Castorina, 1999; Sanborn & Scott, 1998).

Rural mental health and behavioral health-care systems are fundamentally different from urban and suburban systems (Hartley, Bird, & Dempsey, 1999). Specialists seldom treat the whole constellation of problems. Difficulties arise in creating appropriate referral networks for mental health services where issues related to anonymity and labeling can be substantial in sparsely populated areas.
The personalities and attitudes of rural residents also play an important role in the perceptions of mental illness, substance abuse and in shaping local policy to treat these conditions as well as fund community programs and organizations to address the problems (Johnsen et al., 1997).

RURAL HEALTH PROFESSIONALS

In 1997 the American Medical Association counted 736,264 active physicians in the United States—more than double the number in 1970. The ratio of physicians to population grew from 130 patient care physicians per 100,000 in 1970 to 276 per 100,000 in 1997 (Pasko & Seidman, 1999). This rapid growth has fueled a growing perception that the United States has an oversupply of physicians of as much as 20 percent (Council on Graduate Medical Education, 1999; Lohr, Vanselow, & Detmer, 1996). This perception of an overall surplus flies in the face of continued evidence of shortages, especially in rural places.

The contrast of an overall surplus with persisting shortages has created difficult policy options for Graduate Medical Education (GME) (Coffman, Mertz, & Commission, 1998), for changes in policy toward International Medical Graduates (IMGs) (Council on Graduate Medical Education, 1998), and the role of the National Health Service Corps (NHSC). The Pew Health Professions Commission contends the Federal GME policy is not making use of effective mechanisms for improving the geographic distribution of clinicians, such as training in non-hospital settings and support for non-physician primary care professionals. International Medical Graduates are an important source of physicians for rural, underserved areas but their relative contribution to the supply in counties designated as underserved is seen in one study as only slightly greater than United States Medical Graduates (USMGs) (Baer, Ricketts, Konrad, & Mick, 1998). One analysis found IMGs to “worsen distributions” of physicians (Politzer, Cultice, & Meltzer, 1998).

Recruitment and retention of providers remains an issue for many rural places. The National Health Service Corps has been one of the most important programs to place and support physicians and other professionals in rural underserved areas but its early performance did not meet expectations (Pathman, Konrad, & Ricketts, 1992). Subsequent internal policy changes improved the ability of the Corps to place clinicians into long-term service in
rural communities (Rosenblatt et al., 1996). In trying to learn how to influence physicians to practice in rural places, research has traditionally focused on the rural practice environment and the personality and family characteristics of physicians. Recent work points to the positive influence of rural-focused training (Pathman, Steiner, Jones, & Konrad, 1999; Steiner, Pathman, Jones, Williams, & Riggins, 1999).

Physicians are not the only important primary care providers in rural environments. The “New Health Professionals” that emerged in the 1970s, nurse practitioners and physician assistants, have taken on broader and more effective roles in many rural places (Baldwin et al., 1998). In the case of physician assistants, one of the original reasons for developing the profession was to relieve the burdens on house officers and residents in teaching hospitals. Many now work in hospitals less likely to be involved in teaching and rural hospitals (Bergereon, Neuman, & Kinsey, 1999). Issues remain, related to how they are paid in relation to other professionals and how they are used in different settings (Anderson & Hampton, 1999). Nurses also face issues that apply to rural primary care clinicians, although in a more local sense. Recent studies find significant non-wage influences on the decision for nurses to enter or remain in a rural setting (Pan, Dunkin, Muus, Harris, & Geller, 1995; Pan, Straub, & Szigeti, 1998). Chiropractic medicine is often lumped under the term “alternative,” but it is an important source of care for a growing number of both urban and rural people. Little is known about the distribution of these caregivers and how they might modify their practice patterns according to the populations they serve. A 1999 study of the use of chiropractors in the Midwest is one of the very few that focuses on a non-allopathic or mainline nursing or dentistry profession and shows chiropractic to be an important option for rural people to access health care for a wide range of illnesses (Hawk & Long, 1999).

The rural clinician is often described as “another breed” of health professional, willing to cope with relative professional isolation and ready to take on unfamiliar cases. But the rural clinician also is assigned less flattering characterizations. Despite many firmly held perceptions of differences, little is systematically known about what the rural physician does that is different from the urban physician. Researchers at the University of Washington examined what rural doctors do in comparison to their city cousins (Baldwin, Rosenblatt, Schneeweiss, Lishner, & Hart, 1999) and found the differences less striking than the comparative generalizations would lead us to expect and
similarities more acute in their implications about the way all physicians practice medicine.

The ethics of rural and small town health-care practices were a focus of an update appearing in the Hastings Center Report (Roberts, Battaglia, Smithpeter, & Epstein, 1999). There is evidence that perceptions of health and of the health system differ across communities (Garrison, 1998; Heckman, Somlai, Kalichman, Franzoi, & Kelly, 1998; Matthews, Lannin, & Mitchell, 1997; Weinert & Long, 1987). This may influence the course of treatment and how issues of health and illness are viewed by rural clinicians and patients (Purtilo & Sorrell, 1986; Robillard et al., 1989; Turner, Marquis, & Burman, 1996; Ullom-Minnich & Kallail, 1993). For example, rural people may delay treatment due to seasonal demands tied to agriculture. There also is evidence that rural people suffer higher levels of stress than their urban counterparts.

**Hospitals**

The role of the hospital in the American health-care system is changing rapidly. Indeed, some see hospitals disappearing, as networks of professionals and institutions are tied together to replace hospitals through a variety of contractual arrangements that coordinate care and promote health. For many rural communities the hospital serves as the focus of health-care delivery and remains the most prominent, effective institution to organize the delivery of health care.

The leading proposals for national health-care financing reform from the White House and the Congress in 1993 and 1994 did not provide much comfort for rural hospitals. Rural areas were seen as part of the nation where managed competition and vertically integrated networks would have trouble catching on (Kronick, Goodman, Wennberg, & Wagner, 1993). Few specific policy recommendations addressed this problem (Rural Policy Research Institute, 1994a, 1994b). By 1997, the reality of market changes overtook policy proposals; networks were a growing phenomenon and the cost-saving potential of managed care was being realized. Well before the time when national health reform was high on the political agenda, rural hospitals were faced with a prospective payment system under Medicare that paid them less than urban hospitals for the same services.
In the 1980s, as the number of rural hospitals closing their doors grew every year, there was a belief among expert observers of the health-care sector that rural hospitals were perhaps an anachronism, that only those institutions that were very large and integrated with other parts of the health-care system would survive (Lillie-Blanton et al., 1992; Mullner, Rydman, & Whiteis, 1990). Between 1980 and 1998, the total number of community, general hospitals decreased from 5,842 to 5,153, an 11.8 percent drop due to closings, mergers and conversions. During that period, there were approximately 1,072 closings or conversions to some other form of health-care delivery organization, 626 in metropolitan counties and 438 in non-metropolitan areas. Although some hospitals were opening or relocating, a net reduction of 689 hospitals ensued. The pace of closings slowed after 1990; in 2000, 21 urban and 9 rural hospitals closed (Figure 1).

**Figure 1. Rural Hospital Closings, 1980-2000**

![Rural Hospital Closings, 1980-2000](image)


The hospitals most vulnerable to closing or conversions were those that had fewer beds, lower occupancy rates, were more often managed as a for-profit concern, were less likely to be accredited by the Joint Commission on Accreditation of Health Care Organizations (JCAHO) and had a high percentage of Medicaid inpatient days (General Accounting Office, 1991).
Among hospitals located more than 35 miles from their nearest hospital neighbor those more likely to close were in markets with higher population density (Succi, Lee, & Alexander, 1997). Studies that examined the effects of closed hospitals on local communities found significant changes in utilization and, in one case, health status (Bindman, Keane, & Lurie, 1990; Hadley & Nair, 1991; Rosenbach & Dayhoff, 1995). Others found that closings did not significantly impair access. (Bronstein & Morrisey, 1990; Fleming, Williamson, & Hicks, 1995; McKay & Dorner, 1996). Recent work indicates that the effects of rural hospital closings may be overstated in terms of absolute effects on use of services. However, there are important access differences—along with a pervasive sense of loss and a reduction in the social capital of the communities (Reif, DesHarnais, & Bernard, 1999).

Rural hospitals have been able to survive, and some even thrive, because Congress blunted the Medicare payment policies that were discriminatory to rural hospitals. More important, there has always been a justification for the location and mission of hospitals in rural places. Small, rural hospitals have been shown to contribute significantly to local economies (Cordes, Sluis, Lamphear, & Hoffman, 1999), and they have been able to adapt using such payment options as expanding outpatient care that makes use of the Rural Clinics program (Krein, 1999).

After 1994 the dominant theme for rural hospitals has been adaptation and innovation, although survival is still an issue. The “exit” option for rural hospitals has not proven popular in spite of the fact that rural hospitals are at a disadvantage compared to urban hospitals, largely due to differences in the resources available to them. For example, Medicare payments for rural hospitals have consistently been lower than for urban hospitals due to adjustments for lower wage levels in rural communities. Despite these difficulties, rural hospitals have been able to continue in their role as the local and regional centers of health-care activity because of the rapid diffusion of new management techniques, new systems of coordination and networking, new information technology, and the adoption of new structures and approaches to health-care delivery.

The “limited service hospital” model has been a policy option for over a decade in the form of the Medical Assistance Facility (MAF) and the Rural Primary Care Hospital (RPCH, often called “peach”). These limited service hospital models were introduced in 1987 in Montana as MAFs and in 1989 in
a seven-state demonstration by the Health Care Financing Administration (HCFA) under the Essential Access Community Hospital-Rural Primary Care Hospital (EACH-RPCH) program (Campion & Dickey, 1995). The MAFs and RPCCHs operated with restrictions on the number of acute care beds they can have in use (up to six) and a limited length of stay for any Medicare patient of up to 72 hours. The hospital also had to have a network arrangement with a larger EACH hospital, which would accept all transfers. The hospitals, in turn, received enhanced payments from HCFA for Medicare patients and were allowed other relief from regulatory requirements.

Conversion to a limited service model is restricted to those who qualify. Not all potential hospitals choose to do so. It is more common for hospitals with more favorable performance measures to convert (Alexander, D’Aunno, & Succi, 1996). These new organizational forms have been accepted in rural communities but not without some misgivings on the part of former users or potential users (Schreffler, Capalbo, Flaherty, & Heggem, 1999).

Changes and conversions will become even more commonplace with the implementation of the Rural Hospital Flexibility Program passed by the Congress in 1997. (Reif & Ricketts, 1999.) There is intense interest in how well this new “model” for rural hospitals will cope with a health-care environment whose dominant characteristic is change. The U.S. Office of Rural Health Policy has funded an evaluation of the Rural Hospital Flexibility Program. Other alternatives are under consideration at the state level. For example, one analysis focuses on the feasibility of a freestanding emergency department substituting for currently operating small, rural hospitals as part of an access network (Avery, 1999). This is an extreme option for restructuring the rural hospital but reflects the desire of regulators and planners to try to allow localities to retain the essential services that hospitals provide.

**TELEMEDICINE**

Telemedicine has been described as the single most important way to equalize the differential in resource availability between rural and urban areas (Puskin, 1992). Telemedicine is a general term for the use of telecommunications,
including live interactive video, the transmission of images and data via the Internet or telephone, or any combination of information transmission combined with the treatment of patients (Bashshur, 1995). Satellite and fiber-optic cable systems have been developed to link health-care providers in central, teaching hospitals with distributed delivery sites within specific states, across state and national borders (Office for the Advancement of Telehealth, 1998). The federal government has stimulated the expansion of this technology with grant programs (Randall, 1994) and the establishment in 1998 of a separate Office for the Advancement of Telehealth in the Health Resources and Services Administration. Of 191 federally funded projects between 1994 and 1997, 118 were primarily to benefit rural communities or involved rural providers or patients. Comparatively little structured evaluation and quality assessment has been completed on telemedicine and telehealth systems, although many studies have been done on single therapeutic areas such as dermatology or radiology, where the transmission of images and data over distance provides a clear benefit. However, cost-benefit analysis of complex video-based telemedicine systems remains necessary. Telemedicine, according to a review of evaluation approaches, “… is an expensive and, to date, poorly evaluated technology” (Yawn, 1999).

Telehealth systems that are accepted in practice make use of appropriate, accessible and stable technologies (Scott, 1994). To the extent that patients and providers become more familiar with systems and technologies and grow more comfortable with the capabilities of telecommunications, telemedicine and telematics will continue to grow in importance in rural health. Policy issues also remain, such as licensing and reimbursement (Bashshur, 1997).

Networks and Systems

Rural health professionals and institutions have chosen in the recent past to join into systems and alliances to cope with the turbulent environment of health-care policy and economics. These networks consist of multiple health-care providers who share the common characteristics of rural health-care delivery: small population bases, limited resources and a need to exploit economies of scale. A rural health network may or may not have been developed as part of managed care systems but is more likely to have been created to cope with general market conditions. By combining resources, rural providers expect to reduce their costs, manage their scarce resources,
compete effectively and increase their bargaining position with insurers and regulators (Zuckerman, Kaluzny, & Ricketts, 1995). Managed care and market pressures have been cited as causes of this clustering, but an overall emphasis on efficiency and measurable quality has made it necessary for individual institutions to seek support and the efficiencies of scale available in these systems (Shortell, Gillies, & Devers, 1995; Shortell, Gillies, Anderson, Mitchell, & Morgan, 1993). Defining a network is not straightforward in the rural context (Weliever, 1999), but Moscovice and colleagues have provided an explicit definition and created a characterization of network structures in and involving rural communities (Moscovice, Weliever, Christianson, Kralewski, & Manning, 1995). The Moscovice et al. study found that of the networks that met their definition, more than half were involved with an urban institution. The reasons hospitals joined these networks were to gain financial advantages, to access resources and to gain operational assistance from partners (Weliever, 1999).

Hospital networks are not the only integrated structure appearing in rural communities; there are many cooperative and collaborative systems emerging as a result of policy initiatives and in response to incentives from foundations and payment systems. One such state initiative was the New York State Rural Health Network Demonstration Program, initiated in 1986 to promote more effective health-care delivery systems and to maintain essential community services. The 1996 Health Care Reform Act of the State of New York made available $7 million per year for network development between 1997 and 1999. Thirty-four awards ranging from approximately $50,000 to $340,000 were made in 1997.

The federal government initiated Essential Access Community Hospital (EACH) demonstrations that required the formation of networks to support the Rural Primary Care Hospitals, but the network activities were given less emphasis than the viability of the converted hospitals (Wright, Felt, Weliever, Lake, & Sweetland, 1995). The federal Agency for Health Care Policy and Research created a series of Rural Managed Care Centers in 1994 linking rural communities with university health systems to determine if this form of technical assistance networking could help rural places better integrate with managed care systems. The evaluation of that program has been qualitative and presents a picture, to date, of potential—more than realized—benefits (Fasciano, Felt-Lisk, Ricketts, & Popkin, 1999; Hartley, Jackson, Mueller, Nichols, & Williams, 1999). Other rural networks have relied on private, nonprofit foundations for pilot project support.
The Medicare Rural Hospital Flexibility Program was enacted as part of the Balanced Budget Act of 1997 and is a nationwide program that creates a new category of rural hospitals called “Critical Access Hospitals” (CAH) as well as authorizes a program of grants to develop rural health-care systems. Those grants, available to 48 qualifying states, can be used for network development, which is a required component of the Flexibility program. The initial year of the program found that states had moved deliberately toward implementation of network-supporting systems but networks were not the primary focus of the program. Rather, more attention was being paid to the individual hospitals and their decisions to become Critical Access Hospitals (Reif & Ricketts, 1999).

Despite the secular trend toward greater involvement in networks and alliances, there remains little strong empirical evidence of their benefits for members (Wellever, 1999). Questions remain about the degree to which networks actually affect access to care and the eventual outcomes of care for rural populations.

**Policy and Legislation**

The most important change in rural health policy in recent years has come from those parts of the Balanced Budget Act of 1997 (BBA) that created special rural-focused programs like the Rural Hospital Flexibility Program but also created major changes in how rural providers are paid. The BBA and its effects have drawn the attention of rural health advocates and policy analysts. The Rural Policy Research Institute (RUPRI), a consortium of academic centers covering a wide range of rural issues, has addressed policy concerns mentioned in the legislation including: payment levels for rural hospitals, the phasing out of cost-based payments to Federally Qualified Health Centers (FQHCs), revised payments for post-acute care based on averages, the use of the hospital wage index for skilled nursing facility payments, reductions in home health payments, and the lack of sufficient market conditions to allow rural areas to benefit from Medicare+Choice and Provider Service Organizations (PSO) (Coburn et al., 1999). Further, the BBA replaced the adjusted average per capita cost system with one in which county payment rates are set as the highest of (1) a local/national blended rate; (2) a national payment floor; or (3) a 2 percent minimum update from the prior year’s rate. Simulations of payments anticipated under the BBA indicated that rural areas would suffer very large negative effects under the changes (Schoenman, 1999).
RURAL HEALTH CARE IN JAPAN AND THE UNITED STATES: SHARED CHALLENGES AND SOLUTIONS

RURAL advocates have responded by revitalizing their Congressional presence and developing new leadership in the caucuses in the House and Senate. This has resulted in the development of both comprehensive and targeted bills to address problems in existing law and regulations that negatively affect rural communities and providers as well as strengthen rural-directed programs.

RURAL PUBLIC HEALTH

The rural public health infrastructure has not been given much attention in American rural health policy or rural health research in the recent past. Limited examples are available of managed care effects on rural public health departments, although health departments, in general, are scaling back direct patient services (Sifkin, Silberman, & Reif, 1999). As of May 1997, 57 percent of rural counties participated in Medicaid managed care programs in some form, including case management (Slifkin, Hoag, Silberman, Felt-Lisk, & Popkin, 1998). The move to managed care in the Medicaid system poses a particular risk to public health departments, as public health departments have historically focused the provision of clinical services on Medicaid-eligible or other low-income populations. In a study that examined the impact of Medicaid managed care in rural communities in 10 states, local health departments in almost all of the states reported a sharp decrease in the provision of well-child services (Felt-Lisk, Silberman, Hoag, & Slifkin, 1999). One study found that 10 percent of local health departments, especially those in rural areas, reported that they were sole providers of care to the medically indigent (Lipson & Naierman, 1996); thus, rural communities may be more adversely affected if rural public health departments cease providing clinical services due to the influences of statewide Medicaid managed care programs or policies that call for health departments to de-emphasize direct patient care. Health departments have also reportedly used Medicaid revenues to partially cross-subsidize population-oriented services; thus a concern has been raised that the loss of Medicaid revenues may also affect the ability of local health departments to meet their core public health responsibilities (Wall, 1998).
QUALITY OF CARE IN RURAL PLACES

Whether the quality of care provided in rural areas is different from that in urban places remains an issue. Keeler and colleagues (Keeler et al., 1992) drew strong responses from other researchers and rural health advocates when they found rural and non-teaching hospitals to have lower levels of quality (Behringer et al., 1993). The rural research center at the University of Minnesota completed an overview of issues related to quality of care in rural versus other places in the United States (Moscovice & Rosenblatt, 1999). This review points to the few studies of quality that consider rural conditions and the realities of the workforce and practice conditions in rural communities. Much of the fundamental information necessary to assess quality in the rural environment has not been collected. For example, only recently has the content of rural versus urban practice been described (Baldwin et al., 1999). To promote overall quality in medical care, many have suggested expanding the use of practice guidelines. However, a study by Yawn and colleagues (Yawn, Casey, & Hebert, 1999) indicated that adherence to published guidelines for diabetes would require an additional 1 percent to 3 percent more total primary care physicians in the United States; there are approximately 216,000 patient care primary care physicians in the United States; a 1 percent increment in demand would exceed the number of physicians necessary to remove the shortage designations of Health Professional Shortage Areas across non-metropolitan counties of the United States.

Low patient volume remains an important factor in the determination of the appropriate mix of services to provide in rural areas (Hartz, Kuhn, & Krakauer, 1997; Jollis et al., 1997; McGrath et al., 1998). However, the only review of volume-outcome relationships that specifically considered the types of procedures normally done in rural and smaller hospitals found those procedures done in rural hospitals had little variation in outcomes associated with volume (Schlenker, Hittle, Hrincevish, & Kachny, 1996).

The quality of care provided by rural physicians is often described in case-study descriptions that focus on a single rural practice. For example, one study of the process and costs of care for Medicaid children found that rural providers had lower costs but their content of care was, in the words of the researchers studying rural Medicaid care delivery, “potentially unfavorable” (Bronstein, Johnson, & Fargason, 1997).
CONCLUSIONS

The issues that are important to rural providers—of professionals and institutions working under stress with uncertain futures and reduced streams of income—are the same issues faced by the broader health system. The analysis of rural provider behavior is important for its implications for rural health policy, but there are other reasons to pay attention to the rural experience. Rural health-care contexts can be seen as harbingers of the more general national health-care system where pressures for efficiency and cost control may create systems that are expected to function with far fewer resources, heavily dependent on communications and telemetry, where a heightened concern for outcomes places the systems in a unique ethical bind.
LITERATURE CITED


