

Initiatives to Improve Access to Rural Health Care Services A Briefing Paper

Arizona Health Care Cost
Containment System

July 2001

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Executive Summary

Rural health care systems are unique in comparison to urban markets, and the strategies utilized to enhance these systems must be similarly distinct. No single initiative can improve all rural health systems, in fact, what may work in one area may have the opposite effect in another. The distinctive characteristics of rural residents, physicians, and other providers must be taken into consideration when applying any one initiative. Many states have implemented strategies that have succeeded at various levels to improve the access to rural health care.

William M. Mercer, Incorporated (Mercer) has produced this briefing paper for the Arizona Health Care Cost Containment System (AHCCCS) as part of the Arizona State Planning Grant, which is funded by the Health Resources and Services Administration (HRSA). It is important to note that this is one in a series of papers provided as a tool for policy makers as part of the HRSA grant process to develop strategies to increase access to health care in Arizona. The Statewide Health Care Insurance Plan Task Force (Task Force) will be placed with the responsibility of developing plans for providing Arizona uninsured populations with affordable, accessible health insurance.

The intent of this paper is to put a face on the Rural Uninsured and review strategies that focus on provider issues in rural markets that have a direct impact on the accessibility of health care services. These access concerns encompass strategies to attract and retain providers in rural areas, tools for minimizing the effects of geographic isolation concerns in geographically diverse areas, and general market forces that assist providers with continued service in underserved areas.

Faces of the Rural Uninsured

Rural residents are defined as those family units not living adjacent to a Metropolitan Statistical Area (MSA). Rural residents are remarkably different from urban counterparts, and the following 3 key factors contribute to the increased risk of uninsurance in rural compared to urban areas:

1. Employment factors:

- 73% of rural residents come from families with at least one full-time worker.
- Of the uninsured who are poor, nearly half (47%) of those in rural areas are from families with full-time workers compared to 38% of the poor urban uninsured.
- Rural residents tend to be more seasonally employed, in part-time work, or self-employed, all of which lead to a lower likelihood of being insured.

2. Rural demographics:

- Two-thirds of the uninsured in rural areas are poor or near poor—with family incomes less than 200% of the Federal Poverty Level (FPL).
- Rural people usually have less knowledge about the Medicaid program and are contacted much less by outreach efforts.

- One-fourth of the Rural Uninsured are between the ages of 45 and 64.
- 1 in 8 report being in fair or poor health.
- Among the middle aged, 26% are in fair or poor health.
- The uninsured in rural areas are both older and in poorer health than urban residents.

3. Provider network inadequacies:

- Rural residents have to share the available resources with more people on a per capita basis when compared to urban Arizona.
- Individuals living in urban areas are approximately twice as likely to have access to a health care provider than individuals in rural areas.

In general, the typical rural resident tends to be poorer, older, in poorer health, with less provider accessibility. These characteristics demonstrate the enhanced need for closer inspection of the particular barriers to health care within their unique environment.

Barriers to Rural Health Care

Rural health care has unique issues that make the delivery of rural health care problematic, especially for those without health insurance. Three fundamental barriers are associated with the access to rural health care:

1. a critical lack of physicians and other providers,
2. geographic isolation, and
3. hospital solvency.

The rural health system depends on a declining number of hospitals, that, when coupled with health professional disincentives to work in rural areas and extensive geographic isolation, creates considerable barriers for rural residents to receive adequate health care services. As a result of these barriers, 75% of rural counties in the United States are designated as Medically Underserved Areas (MUA), a measure that includes both provider shortages and poorer health outcomes [1].

Critical Success Factors

For each of the barriers identified above, examples of state initiatives provided the following list of critical success factors:

1. A lack of physicians and other providers:

- expand the state's needs assessment capabilities to recognize areas of health care shortages;
- increase the use of loan repayment programs for flexible and rapid responses to health care shortages;
- focus on mid-level practitioners to provide health care services in rural areas and the expansion of prescriptive authority for these providers;
- provide practitioners with start-up loans, subsidized liability insurance, and technical

- assistance to minimize disincentives to rural practice; and
- increase access to specialists through telemedicine initiatives.

2. Geographic isolation:

- create collaboration between multiple health and non-health related sources for outreach of health services;
- initiate joint efforts from multiple sources for mobile clinics to schools, markets, and other community events for primary and preventative care services;
- implement telemedicine initiatives to enhance resident education and specialty support for generalists;
- design emergency medical services (EMS) that are integrally linked to the regional health system; and
- encourage volunteer EMS providers to collaborate with local rural governments to enhance the delivery of EMS.

3. Hospital solvency

- utilize excess space within the hospital to house the available health care services under one roof;
- utilize cost-based funds through The Center for Medicare and Medicaid Services (CMS) (formerly known as Health Care Financing Administration (HCFA)), sponsored programs;
- collaborate with full service hospitals to reduce the administrative and capital cost burden associated with providing health care services; and
- assist with attraction and retention of physicians and extenders.

The barriers to rural health care are profound, and these barriers have a direct effect on the quality of care rural residents receive. The strategies that states should consider in overcoming these barriers must be embedded with sensitivities for community-oriented residents, the independent rural practitioners, and financially insecure facilities intrinsic to rural areas.

Methodology

The Arizona Health Care Cost Containment System (AHCCCS) Administration has secured a grant from the Health Resources and Services Administration (HRSA) to answer fundamental questions regarding the uninsured in Arizona. Several factors and characteristics affect the uninsured, although they are not uniform across all populations. It is important to note that as key groups of the uninsured are identified, different solutions will surface for different populations throughout Arizona.

In addition to this paper, AHCCCS has requested the presentation of six other policy issues papers. The seven policy papers including this one, are the following:

- Identification of Sub-Populations,
- Strategies to Improve Rural Access to Health Care,
- Critique of Proposed Basic Benefit Package,
- Incentives to Increase Health Coverage,
- State High-Risk Pools,
- Purchasing Pools, and
- International Health Care Delivery Systems.

Over 150 journals, articles, and states' government sources were reviewed to provide a qualitative study that would yield diverse and reliable information on the issue of the access to health care for the Rural Uninsured. Electronic searches of Mercer's internal electronic research services, the Washington Resource Group (WRG) and the Information Research Center (IRC), as well as a comprehensive list of Web sites (shown below) were utilized to obtain materials describing the uninsured.

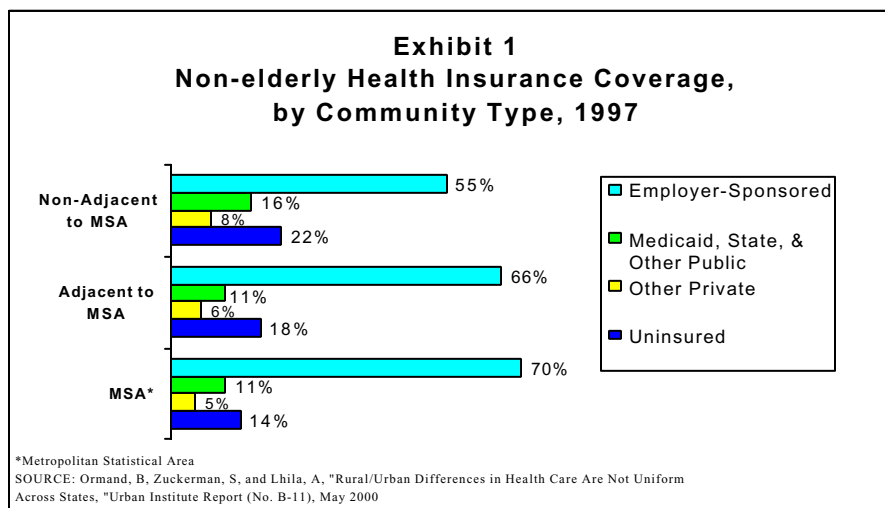
- The Commonwealth Fund, www.cmwf.org;
- National Academy for State Health Policy (NASHP), www.nashp.org;
- The Kaiser Family Foundation, www.kff.org;
- Urban institute, www.urban.org;
- The National Governors Association, www.nga.org;
- Robert Wood Johnson Foundation, www.rwjf.org; and
- The National Rural Health Association, www.nrharural.org.

To provide the state-specific comparisons, Mercer either contacted the state programs directly or the Mercer office responsible for employer-sponsored health coverage for that state.

It is important to note that the literature reviewed did not frequently cite statistical comparisons between urban and rural health care demographics. In addition, the statistical impact of Proposition 204 has not been taken into consideration, which could reduce Arizona's uninsured by an estimated 180,000 individuals.

Faces of the Rural Uninsured

Among the 42 million uninsured in the United States, almost 20% live in rural areas. Their health care needs differ from that of the rest of the country because the rural population as a whole is older, poorer, has fewer transportation options, and are less healthy compared to people in urban areas. Nearly 8 million people living in rural areas—or 18% of the non-elderly rural population—were uninsured in 1999. The type of health insurance coverage, when stratified by proximity to a Metropolitan Statistical Area (MSA)¹, is demonstrated in Exhibit 1 [1].



A 1997 study by the Agency for Health Care Policy and Research (AHCPR) demonstrates that the rate of uninsurance is more than 20% higher in rural areas than in urban areas (for 1996, 19.8% versus 16.3%), despite having a higher percentage of people 65 and older (18% versus 15% in urban areas), who qualify for Medicare [2]. At the same time, the length of time people go uninsured for all geographic areas is increasing, with the Rural Uninsured having longer periods without insurance [1].

Three key factors contribute to the increased risk of uninsurance in rural compared to urban areas:

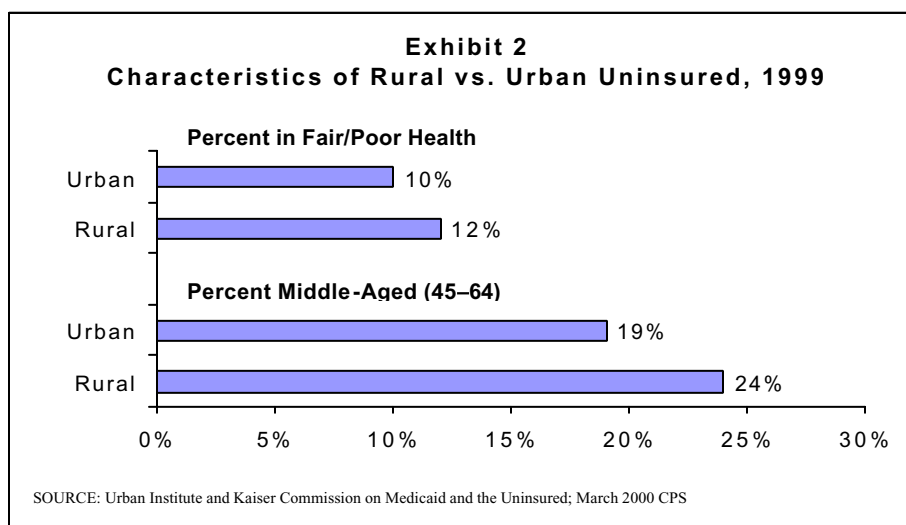
1. employment factors;
2. rural demographics; and
3. provider network inadequacies.

¹ MSA (1990 Standard) is defined as one city with 50,000 or more inhabitants, or a Census Bureau defined urbanized area (of at least 50,000 inhabitants; and a total metropolitan population of at least 100,000 (75,000 in New England) [3].

The focus of this paper is on reviewing strategies related to provider issues in rural markets that have a direct impact on the accessibility of health care services. However, it is important to understand the causes of rural uninsurance. We also examined the employer and demographic factors that demonstrate the rural areas' enhanced need for accessible and high quality health care services.

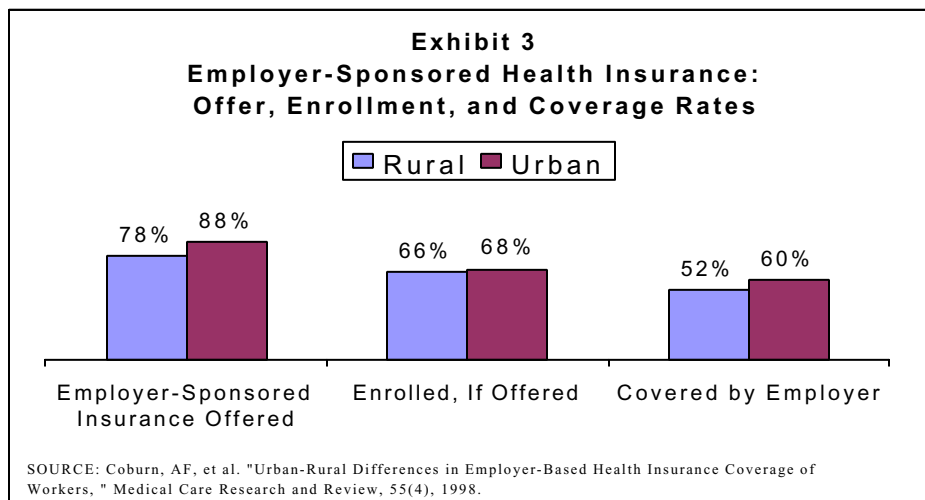
Employers

A majority of the Rural Uninsured population is working or have workers in their families. In fact, 73% come from families with at least one full-time worker. Of the uninsured who are poor, nearly half (47%) of those in rural areas are from families with full-time workers compared to 38% of the poor urban uninsured. The uninsured in rural areas are both older and in poorer health than those living in urban areas, as demonstrated in Exhibit 2 [1].



Rural people are also more likely to be self-employed or to work for small businesses than urban people are. Rural areas have a higher percentage of elderly people with Medicare coverage, but a higher proportion of working age people (ages 18 to 65), who are more likely to lack insurance [4].

Rural people are often employed only seasonally, or in part-time work. Because of the nature of many rural economics, based on agriculture, mining, or timber, rural employers are less likely to provide health insurance, as presented in Exhibit 3 on the following page.



Demographics

Two-thirds of the uninsured in rural areas are poor or near poor, with family incomes less than 200% of the FPL. If all eligibles enrolled, Medicaid and the State Children's Health Insurance Program (SCHIP) could potentially cover all low-income children. Low-income adults, who make up 47% of the Rural Uninsured, qualify for Medicaid only if they are disabled, pregnant, elderly, or have dependent children. Parents' eligibility levels are generally lower than their children's [1]. The composition of the rural uninsured population is demonstrated in Exhibit 4 below.

Exhibit 4. Distribution of Rural Uninsured by Income,
Ages 0–64, United States, 1999

	Less than 200% FPL	200% + FPL
Total Uninsured (thousands)	5,226	2,574
Percent Distribution	67%	33%

Sources: Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on pooled March 2000 Current Population Surveys

Rural residents are also more likely to be in poorer health than urban residents are. For Medicaid, rural residents usually have less knowledge about the program and are contacted much less by outreach efforts. In the area of self-reported health status, one-fourth of the rural uninsured are between the ages of 45 and 64, 1 in 8 report being in fair or poor health, and among the middle aged, 26% are in fair or poor health [1].

Provider Network Inadequacies

Due to the smaller number of providers in rural communities, individuals residing in rural communities have fewer choices for their health care providers. In addition, rural residents have to share the available resources with more people on a per capita basis when compared to urban Arizona. Exhibit 5 illustrates the limited access of health care providers in rural communities in Arizona as compared with urban communities in Arizona.

Individuals living in urban areas are approximately twice as likely to have access to a health care provider than individuals in rural areas. The reasons for disparities in health care access in rural areas are discussed at great length throughout the remainder of the paper.

Exhibit 5. Ratio of Hospital Beds and Physicians in Rural vs. Urban Arizona

	Rural Arizona	Urban Arizona
Hospital Beds per 1,000 Residents	2.1	2.8
Number of Physicians per 1,000 Residents	1.2	2.2

Barriers to Rural Health Care

Urban and rural counties vary in important ways that make the delivery of rural health care unique and more difficult for rural residents, especially for those without health insurance. In a review of the current literature, three fundamental barriers were associated with the access to rural health care:

1. a critical lack of physicians and other providers;
2. geographic isolation; and
3. hospital solvency.

The rural health system depends on a declining number of hospitals, and that coupled with health professional disincentives to work in rural areas and extensive geographic isolation, creates considerable barriers for rural residents to receive adequate health care services. As a result of these barriers, 75% of rural counties are designated as MUAs, a measure that includes both provider shortages and poorer health outcomes [1].

Lack of Physicians and Other Providers

The lack of physicians and other providers is a significant barrier to health care in rural areas. While 20% of the nation's population lives in rural areas, less than 11% of physicians are practicing in rural areas. In 1997, more than 2,200 physicians were needed to eliminate the health professional shortage area (HPSA) designations. In addition, a large number of current rural providers are elderly and close to retirement, which will increase the number of physicians needed.

Rural providers are in a different position compared to their urban counterparts. They are less able to turn patients away in rural settings where the selection of providers is much more limited. Specialists and ancillary providers (e.g., physical therapists) are also less available in rural areas, and when they do come to rural areas, their appointment availability is typically very limited. Rural residents tend to delay medical care due to the lack of appointment availability, making their needs, when they arise, more urgent than urban residents. The lack of specialists leads to a smaller local pool of knowledge for formal and informal consultation by generalists. In addition, rural regions of the country frequently do not have a large network of safety net providers eligible for public grant dollars to help underwrite the costs of caring for the uninsured.

Health plans, whether they are an health maintenance organization (HMO) or preferred provider organization (PPO), tend not to gravitate to rural areas for a number of reasons. These reasons are related to a lack of large numbers of providers, as well as consumers. When health plans do service rural areas, one of the main reasons they cite is that it is because they believe they must cover the rural area to obtain urban market share. An example would be a large commercial employer with many rural employees. To obtain the contract with the employer, the health plan

must contract with both the urban and rural providers (physicians, hospitals, ancillary providers) that serve this company's employees.

While the health plan has a broad selection of providers to contract within urban areas, rural areas have a much smaller group of providers. During negotiations, these providers are much less willing to accept lower contract rates. They know that the health plan must contract with them to provide geographic coverage. This makes contracting very difficult for health plans, and is part of the reason premiums in rural areas are higher than in urban areas. While some of the higher costs are due to the fact that rural providers have higher operating expenses, it is also because providers do not have to accept lower contract rates. This is a significant barrier to health plans entering rural areas.

The additional barrier of a lack of aggregate member demand is also a concern to health plans. Large employers are rare in rural markets and, therefore, actuarial risk is spread out in rural markets over a large geographic area with multiple groups of residents. While some of these residents are younger and need only healthy checkup and preventive care, many are older and need catastrophic care. This typically smaller, yet diverse range of health care needs, spreads out the variation of costs, making predictive cost models difficult and resulting in higher premiums for rural residents. The lack of rural providers can also affect member demand in that they may prefer to go to an urban provider, no matter how far away, due to a real or perceived lack of appointment availability, lack of specialty consultation, and low confidence in the quality of services provided by the local physician(s).

Historically, health plans have felt they had to cover rural areas to gain urban market share, and also that serving rural areas would "feed" urban market share. However, this market share has proven elusive, and the barriers identified above have caused health plans to generally avoid or move away from rural areas.

A shortage of qualified health care providers, both generalists and specialists, is also a common reason for the inadequate access to health care in rural areas. The shortage has multiple causes. Reimbursement is higher for specialty than for primary care, causing many medical school graduates (who have large debts) to gravitate towards specialization. But specialists require a large population base from which to draw, which is less likely to be available in a rural area. Providers who remain focused on primary care face personal, professional, and economic disincentives to practice in isolated rural areas. Low Medicaid reimbursement rates in many states have provided a further disincentive to practice in these states. In addition, policy and practice barriers have unnecessarily restricted what mid-level practitioners could do. For example, states' laws and regulations often prohibit mid-level providers from prescribing drugs, or admitting and discharging patients to hospitals. In addition, many physicians are not accustomed to sharing responsibilities with mid-level practitioners.

Many factors are related to physicians being attracted to and staying in rural areas, such as:

- emotional issues;
- practice issues; and
- life style issues.

Emotional Issues

Emotional issues include autonomy, community relationships, and family time. These issues are often in conflict with issues of salary, adequacy of hospital facilities, and spousal employment.

Practice Issues

A number of factors, positively and negatively, influence a physician's preference to practice in a specific rural community. They include:

Incentives	Disincentives
▪ Familiarity with the community	▪ Insufficient time off due to lack of respite and back-up support
▪ A dynamic and growing community	▪ Inadequate salaries
▪ Availability of visiting consultants on a regularly scheduled basis	▪ Competition and/or instability within the medical community
▪ A high-quality hospital that is financially secure and committed to maintaining quality	▪ Lack of sufficient specialty providers in rural areas
▪ An impressive, competent administrator	▪ Limited scope of clinical practice
▪ Economic incentives, such as repayment of medical school loans, below-market housing subsidies, and guaranteed incomes	

Life Style Issues

Life style-related concerns for providers include:

- the potential for community integration;
- adequate schools;
- isolation from colleagues; and
- career opportunities for spouses.

A majority of physicians (54%) in rural areas are in primary care specialties of family or general practice, internal medicine, pediatrics, and obstetrics/gynecology compared to 38% of urban physicians. According to the Council on Graduate Medical Education[5], family practice physicians are three times more likely than general internists, and five times as likely as pediatricians, to practice in rural areas. Lastly, family practitioners are the only physicians among all specialties who are as likely to settle in rural areas as in the general population [6].

While the initiatives discussed later in this paper address provider recruitment and retention, it is important to note that each provider is motivated by a variety of factors, and no single initiative will eliminate all dissatisfaction factors. A multi-faceted approach is vital to consider for the minimization of this barrier to rural health care services. To meet the unique needs of rural communities, public and private entities need to collaborate to creatively establish new programs

or expand current programs to recruit and retain rural physicians and other providers. This is discussed in greater detail later in Summary of Initiatives and Critical Success Factors section of this paper.

Geographic Isolation

The geographic isolation of rural residents has a dramatic effect on their access to health care services. Some of these issues are outlined below:

- The number of elderly is increasing, and few have adequate transportation to travel long distances to access needed health services.
- Rural health networks encounter difficulties in establishing outreach programs for residents.
- Rural facilities are constantly struggling to build and support their limited infrastructure, such as adequate EMS.
- Very few resident and provider support services are available locally, such as health education workshops.

Non-emergent transportation for residents of these rural communities can be a tremendous challenge. While urban counterparts can access public transportation, rural residents do not have that luxury. Roads in rural areas, with bad weather, may become very hazardous or completely unusable. Outreach is minimal in rural areas and is frequently provided by organizations uniquely different from those found in cities. In fact, outreach is typically not an organized program in rural areas, but an informal network comprised of individuals or small groups. Church staff, friends, neighbors, and even postal delivery workers are frequently requested to assist with health care delivery, although it may be as simple as checking in with a frail elderly neighbor occasionally and providing much needed over-the-counter medicine and supplies.

Emergent transportation can also be difficult in rural areas. Many rural health systems struggle with proper EMS support for a variety of reasons, including:

- heightened public expectations for timeliness of response;
- organizational instability;
- under-financing;
- inadequate access to training and medical direction;
- a lack of volunteers willing to commit to the demands of emergency response; and
- under-developed infrastructure for public access and communications [7].

Nationwide, 65% of the EMS labor force is volunteer EMS corporations, providing EMS services to 30% of the American population. Indeed, many rural areas would not have EMS were it not for volunteers [8]. While EMS is considered a basic component of any health care system in the United States, rural areas typically have more limited services. EMS is particularly critical to rural residents because they experience disproportionately higher levels of serious injuries, and their distance from traditional health care resources increases their morbidity and mortality associated with trauma and medical emergencies [7].

Geographic isolation also impacts health educational support for both residents and providers, and specialty support services for providers. While urban residents and providers can attend health educational programs at local hospitals, clinics, or universities, these programs are more difficult for rural residents and providers. While the Internet has increased the access to some medical information, these resources are not as accurate or reliable as traditional health educational programs.

Geographic isolation also limits the ability of generalists to access specialty physicians on a day-to-day basis, as is common for urban generalists. For example, urban generalists can casually access specialists in hospital hallways for brief case reviews. Rural generalists, in contrast, must call offices to try to reach specialists, using much more formal methods. While the lack of specialists places additional burden on the need for enhanced transportation to urban facilities, solutions that include collaborative relationships with larger institutions and the communities' support can be a unique and superior method for the delivery of specialty consultation and analysis.

Hospital Solvency

As previously discussed, the availability of providers is limited in rural markets, thus, causing rural residents to seek their health care services at the community hospital. Services provided in rural hospitals are expansive in comparison to urban hospitals, including physician, outpatient, home health, and nursing home care [9]. Since rural hospitals provide such a broad array of health care services, their availability is critical to the health status of the rural community.

Since the 1980s, there have been a substantial number of rural hospital closures, leaving the rural community vulnerable and extending their geographic isolation. Several demographic factors contribute to rural hospitals being at risk of closure. As presented in Exhibit 1, 16% of the rural communities (non-adjacent to MSA) have their health care coverage through government-based programs (Medicaid and Medicare), which typically yields lower reimbursement rates than commercial payors.

The lack of providers (and provider turnover) in the rural areas may cause insured individuals to leave the community, leaving rural hospitals with a higher portion of uninsured and Medicaid/Medicare recipients [9]. As rural hospitals see their patient base leave the rural community or seek health care in urban facilities, hospitals struggle to purchase the capital and administrative services necessary to provide health care. The financial pressures caused from the population demographics, in conjunction with patients seeking care outside of the community, can be catastrophic to the financial viability of rural hospitals. Since population demographics are unlikely to change in rural markets, hospitals should explore innovative initiatives on provider attraction and retention to retain their patient base within the rural community.

Initiatives for Overcoming Barriers to Rural Health Care

There are a myriad of initiatives throughout the United States that focus on enhancing the access to rural health care services. The following pages illustrate various initiatives found throughout the country. These initiatives were selected because:

- the initiative was innovative;
- the initiative focused on overcoming the identified barriers;
- the initiative is applicable to Arizona;
- the information presented was comprehensive; and
- the state initiative provided broader geographic representation.

The following initiatives, presented in order of the state of origination, met the criteria described above. Each initiative is evaluated using the three barriers identified earlier in this paper:

1. a critical lack of physicians and other providers;
2. geographic isolation; and
3. hospital solvency.

Idaho

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Enhance physician and physician extender resources Expand hospital resources 	RWJF Grants: <ul style="list-style-type: none"> \$100,000 planning \$894,977 implementation \$700,000 provide-related investments 	<ul style="list-style-type: none"> Increased funding for loan repayment for practitioners working in underserved areas Provided provider training Trained and hired local citizens as recruiters Technical assistance to help communicate and stabilize the health care systems Established locum tenens (the provision of temporary physician coverage) Established low interest loans to public and private primary care provider (PCP) and mid-level providers and hospitals Secured leverage to 3.5 million bank loan with use of program-related investments (PRI) funds 	<ul style="list-style-type: none"> Placed 73 providers in HPSA Decreased provider vacancies from 73 to 15 in four years Four new PCP clinics in underserved areas Increased availability of back-up practitioners Placed 47 physicians and mid-level providers in 31 communities Improved health care practices and facilities

In Idaho, the Rural Health Education Center (Center) assists severely underserved communities with recruitment and retention of providers. The Center repays loans of practitioners, hospitals, and community organizations in rural areas; assists communities with the development of primary care centers; and offers provider training, including placement of medical students in rural family practices. They also provide assistance to rural communities in choosing the appropriate scope of services for their area and maximize utilization of local providers [10].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?		✓	
Does the initiative(s) expand hospital resources?			✓

Kansas

Primary Barrier(s) Addresses	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Enhance physician and physician extender resources Reduce geographic isolation Expand hospital resources 	Rural Hospital Flexibility Grant <ul style="list-style-type: none"> \$5,799,223 	<ul style="list-style-type: none"> Hospital changed to provide more limited services Continued pharmacy services by opening retail pharmacy in hospital Employed family health center staff Implemented joint telemedicine program 	<ul style="list-style-type: none"> Increased integration of primary care services by providing acute and long-term beds, laboratory, radiology, 24-hour emergency room, and mobile technology (e.g., ultrasound) Integrated nursing home and ambulance delivery into facility

The Kearny County Hospital in Lakin, Kansas, is a county-owned hospital, located near the county-owned nursing home. The largely farming and manufacturing County has culturally diverse residents with unique health care needs.

While the County decided not to merge EMS service with the hospital, they informally coordinated staffing of EMS employees and the majority of the ambulances. A retail pharmacy was opened in the hospital, providing availability of pharmacy services to the hospital and community at large. Lastly, St. Catherine Hospital in Garden City established protocols to allow Kearny County Hospital personnel to use telemedicine links to confer with St. Catherine staff for specialty clinic-type services, medical continuing education, and treatment of non-emergency patients during late hours [11].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?			✓
Does the initiative(s) expand hospital resources?			✓

Michigan

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Reduce geographic isolation 	<ul style="list-style-type: none"> Federal funds from rural health policy and rural utilization service 	<ul style="list-style-type: none"> Secured equipment for telehealth activities 	<ul style="list-style-type: none"> Practitioners receive distance learning, and participate in meetings and clinical telemedicine Average of six physicians per month receive continuing education Community education on varied topics provided to community Telemedicine to Michigan State for telepsychiatry

Michigan Upper Peninsula Telehealth Network (UPTN) is a telemedicine program for hospitals and clinics located in upper Michigan. This area has high unemployment, and an unusually large elderly population, minority populations, low insurance rates, and harsh winters. The area finds it difficult to retain quality health care professionals. UPTN provides equipment for distance learning for practitioners and the community at large, administrative meetings, and clinical telemedicine (e.g., teleradiology). The network consists of 18 videoconference sites and 10 teleradiology sites. Marquette General Hospital Regional Medical Center serves as the hub, providing the clinical expertise, educational programming, and system coordination [12].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?		✓	
Does the initiative(s) reduce geographic isolation?			✓
Does the initiative(s) expand hospital resources?		✓	

Minnesota

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Enhance physician and physician extender resources 	RWJF Grants: <ul style="list-style-type: none"> \$100,000 planning \$777,245 implementation \$1,000,000 provider-related investments (PRI) 	<ul style="list-style-type: none"> Expanded recruiting by matching medical students with practitioners in the community Established systems for collection of ongoing provider-related data and statewide directory of practice opportunities Financial and technical assistance to 42 clinics of billing and accounts receivable process Utilized PRI funds as leverage for securing \$5 million in lending from banks Capital used by primary health centers, service networks, and cooperatives for loans at very low rates 	<ul style="list-style-type: none"> Placed 26 physicians, 12 physician assistants (PAs), 7 nurse practitioners (NPs) in HPSAs and MUAs; 29 foreign-trained physicians placed Reduced demand for mid-level providers from 95 to 48 Identified \$2 million in new and uncollected revenue Administered loan repayment program that placed 98 physicians and 50 mid-level providers

The Minnesota Center for Rural Health (MCRH), a non-profit organization affiliated with the University of Minnesota, was established in the late 1980s with the mission to place and retain rural PCPs. MCRH provides recruitment services to 41 communities, including contract review, community/practice recruitment feasibility assessments, and a recruitment and retention manual for communities. MCRH has been successful in placing physicians, PAs, NPs, and foreign-trained physicians in HPSAs and MUAs. MCRH works with Minnesota's Office of Rural Health and Primary Care (ORHPC) and state-funded Community Health Centers (CHCs) to collect provider data to conduct demand assessments and publish up-to-date job opportunity lists. MCRH works with the Minneapolis Foundation for Funding Needs, including the purchase of education-related debt in order to attract new physicians [10].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?		✓	
Does the initiative(s) expand hospital resources?	✓		

Montana

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Enhance physician and physician extender resources Reduce geographic isolation Expand hospital resources 	Variety of Grants <ul style="list-style-type: none"> \$140,939 (CMS) and others Department of Transportation (80/20) Rural Health Transition Grant 	<ul style="list-style-type: none"> Hospital converted to medical assistance facility (MAF); able to use mid-level providers when doctor is not available Integrated EMS purchased equipment Purchased non-emergency van Network with Deaconess Billings clinics for full service needs, including utilization of teleradiology system 	<ul style="list-style-type: none"> Provided public health outpatient and specialty care through coordination with other facilities Shared cost in network for training staff resources Financial stability and regulatory flexibility Trained EMS staff Provided transport to doctor's appointments locally and to see specialist 43 miles away

Roosevelt Memorial Medical Center (RMMC), located in Culbertson, Montana, is a not-for-profit hospital that serves the small rural population of northeast Montana. The area is physically isolated and experiences harsh winters. The hospital no longer provides inpatient surgery services, and radiology services are provided through a teleradiology system. RMMC used an 80/20 grant from the Department of Transportation to purchase a non-emergency transportation van. They also received a Rural Health Transition Grant to lease ambulances, purchase defibrillators for the ambulances, and place both at decentralized locations. RMMC purchased a physician practice and moved the practice to the hospital. To become a more efficient purchaser, RMMC also networks with other hospitals for purchasing employee benefits, training, health care personnel recruiting, and other services. RMMC participates in the Eastern Montana Telemedicine Network, with Deaconess Billings Clinic as the hub [11].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?			✓
Does the initiative(s) expand hospital resources?			✓

Nebraska

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Enhance physician and physician extender resources Reduce geographic isolation 	RWJF Grants: <ul style="list-style-type: none"> \$99,580 planning \$801,055 implementation \$1,500,000 PRI 	<ul style="list-style-type: none"> Launched 5 regional networks that are: <ul style="list-style-type: none"> Providing technical assistance Expanding scholarships and loan repayment programs Using telecommunications Outreach to students and residents from Nebraska training in other states Development of community profiles Technical assistance provided retention plan for practitioners Capital available to leverage for bank loans for site enhancements loans 	<ul style="list-style-type: none"> Placed 102 practitioners Improved education Reduced isolation Established locum tenens More liberal loan forgiveness payback program Reduced the number of HPSA from 58 to 38 Reduced the number of communities recruiting physicians from 60 to 30 A PPO was established by 90 physicians that has strong incentives to use local health services and providers Enhanced financial initiatives Established new satellite clinics

The state of Nebraska (Nebraska) has implemented 5 regional networks to improve access to care in rural areas, where the number of rural physicians had been declining for some time. Nebraska is largely rural, with the majority of rural communities not having a physician. Nebraska assessed community needs and developed strategies to improve access to primary care, including the use of managed care and physician recruitment and retention initiatives. Physicians were recruited through scholarship, loan forgiveness, and loan repayment programs. Communities were also provided technical assistance on physician recruitment skills. The networks have been successful in placing 102 practitioners in the past 5 years and enabling the use of telecommunications to improve education and reduce professional isolation. Nebraska established a locum tenens network, and has developed community profiles to assist practitioners in accessing other practitioners[10].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?		✓	
Does the initiative(s) expand hospital resources?	✓		

Texas

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Reduce geographic isolation 	Various funding Sources: <ul style="list-style-type: none"> Telecommunication Infrastructure Fund Board (\$14,000,000) Texas Association of Local Health Officials Texas Rural Hospital Telecommunication Alliance University of Texas – Houston HSC E-Health Solutions 	<ul style="list-style-type: none"> Secured funds for 255 telecommunication sites Workstations established Secured Internet Training and system support 	<ul style="list-style-type: none"> Provided Statewide telehealth network Timely access to health care Economics of scale Shared overhead approach used

Health Access and Alert Network of Texas (HAANT) is an alliance between the Texas Rural Hospital Telecommunications Alliance (TRHTA) and the Texas Association of Local Health Officials (TALHO). HAANT receives approximately \$14 million in funding from the State of Texas' Telecommunications Infrastructure Fund Board (TIFB) and additional matching State funds. HAANT's goals are to use State funding and the power of the alliance to provide additional services and to make hospitals more competitive via a telecommunications infrastructure. HAANT uses Internet/intranet/satellite technology for teleradiology, telemedicine, Medicaid eligibility, and distance education. There are 255 targeted sites, including community hospitals, rural clinics, local health departments, nursing homes, and home health agencies [13].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?	✓		
Does the initiative(s) reduce geographic isolation?			✓
Does the initiative(s) expand hospital resources?		✓	

Virginia

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Recruitment and retention of providers 	RWJF Grants: <ul style="list-style-type: none"> \$99,994 planning \$798,000 implementation \$700,000 PRI 	<ul style="list-style-type: none"> Established flexible scholarship programs Coordinated public and private recruitment and retention activities Upgraded needs assessment and management information system Secured funds to leverage for access to care activities and facility improvements 	<ul style="list-style-type: none"> Approached students in underserved areas to return to practice in those areas Enhanced training for PCP to recruit future doctors Loan totaling \$1.6 million for equipment, renovation, and working capital

The Commonwealth of Virginia has created a Center for Primary Care and Rural Health to coordinate both public and private recruitment and retention activities. To support these initiatives, a statewide management information system and database was developed to support health system needs assessment.

Through the planning process, the Commonwealth assessed the feasibility of integrated delivery systems in underserved areas and the ability to attract and retain PCPs. To create incentives for PCPs to practice in underserved areas, reimbursement policies were initiated and funding was established for the Virginia Physician Loan Repayment program [10].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?		✓	
Does the initiative(s) expand hospital resources?		✓	

West Virginia

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Expand hospital resources 	Rural Hospital Flexibility Grant: <ul style="list-style-type: none"> \$2,735,096 	<ul style="list-style-type: none"> Coordinated redesign of hospital flexibility Reduced bed capacity and focused on outpatient services Established management contracts with other hospitals Purchased mobile clinic and telemedicine Internet services Hospital became landlord for ancillary services, such as pharmacy services Provided rent free space to Webster County Health Department 	<ul style="list-style-type: none"> Established hospital as one stop shopping with the availability of pharmacy, home health, and wellness center Established the network of Webster County

Webster County Memorial Hospital (WCMH), located in Webster Springs, is a rural primary care hospital serving the rural residents of east central West Virginia. The area is in economic decline, with high unemployment rates and road transport limited to two-lane mountain roads. WCMH now employs all of the physicians in the County, turning excess hospital capacity into a hospital-based clinic. WCMH also offers specialty clinics in other towns.

WCMH used a federal grant to hire a consultant to create a strategic plan to develop health service integration. WCMH has focused on health service integration by purchasing the ambulance service, allowing the health department to rent hospital space for free. The hospital uses the free space to house two social services agencies, and is opening a pharmacy in the hospital. As services within the rural marketplace ceased to exist, the hospital assumed management of these activities to enhance their market position. Through collaboration with other agencies, WCMH established a wellness center and a mobile clinic to serve isolated areas. United Hospital Center is WCMH's Essential Access Community Hospital (EACH), and has assisted WCMH with recruiting physicians and several other administrative functions. WCMH also used grants to purchase mobile clinic and telemedicine Internet lines [11].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?		✓	
Does the initiative(s) reduce geographic isolation?			✓
Does the initiative(s) expand hospital resources?			✓

West Virginia, second example

Primary Barrier(s) Addressed	Funding Source	Activity	Outcome
<ul style="list-style-type: none"> Enhance physician and physician extender resources 	<ul style="list-style-type: none"> State funds Kellogg Foundation Community (free housing) 	<ul style="list-style-type: none"> Rotated medical students through rural training stations Provided free housing to rural medical students 	<ul style="list-style-type: none"> 130 medical students in program 31 students decided to practice in West Virginia

The Rural Health Education Partnerships (RHEPs) in West Virginia are used to attract and retain physicians in rural areas of West Virginia. RHEPs rotate 130 medical students every month through 295 training stations under the guidance of local providers. Community leaders arrange free housing for the students and assist them during their stay. RHEPs receive \$7.5 million in state funding, with additional funding from the Kellogg Foundation. Last year 31 students decided to stay and practice primary care in West Virginia [14].

	Minimal Success	Moderate Success	Successful
Does the initiative(s) enhance physician and physician extender resources?			✓
Does the initiative(s) reduce geographic isolation?	✓		
Does the initiative(s) expand hospital resources?	✓		

Summary of Initiatives and Critical Success Factors

For each of the three identified barriers to rural health care, the following section provides a summary of the initiatives and the critical success factors related to these initiatives.

Lack of Physicians and Other Providers

A number of initiatives have been attempted to improve the number of physicians (and other providers) in rural areas, each with varying levels of success. However, most states typically focus on four comprehensive initiatives to enhance the access to physicians and other providers:

- recruitment and retention programs;
- rural rotation programs;
- financial/tax incentives; and
- loan repayment and scholarship programs.

The final part of this section summarizes specific initiatives that health plans have implemented in rural areas to meet both physician and resident concerns.

Recruitment and Retention Programs

A Robert Wood Johnson Foundation (RWJF) program funded several states' initiatives to recruit and retain providers and develop and sustain practice sites in underserved areas, authorizing up to \$16.5 million for the purpose. States implemented comprehensive changes, as discussed in the state examples in the prior section, to improve the number of providers in rural areas, such as:

- upgrading their needs assessment capabilities and recruitment efforts;
- reforming Medicaid and other public financing mechanisms;
- providing practitioners with start-up loans, subsidized liability insurance, and technical assistance on financial and practice management; and
- removing policy and practice barriers for mid-level practitioners [10].

The focus of the RWJF initiative rested on the development of new clinics, financial and technical assistance to improve the profitability of established practices, and expansion of the use of mid-level practitioners. The National Program Office developed a recruitment program software and a series of presentations on recruitment, retention, practice site development, financial management, as well as market research reports on the supply of PCPs and other providers.

Rural Rotation Programs

Many states have found rural rotation programs to be a successful method to enhance their rural provider network. 38 states have programs under which medical students or residents are placed in a rural health care facility for anywhere from one week to one year. 34 of these states also offer rural rotation programs to other practitioners, such as PAs, NPs, certified nurse midwives, and social workers [15].

Several states use a multi-disciplinary team approach to train health professionals in rural settings. Students in medicine, nursing, pharmacy, PA programs, and social work train together as a team. The W. K. Kellogg Community Partnerships Initiative has promoted this training and service model to prepare health professionals in the provision of comprehensive, primary care in underserved areas.

Financial/Tax Incentives

16 states use some form of financial/tax incentives to encourage providers to work in underserved areas. Several programs provide bonuses or income tax credits on a graduated scale for each year the provider remains in an underserved area. Malpractice insurance is subsidized for providers who serve in underserved areas. While some of these incentives are only applicable to physicians, several states have broadened the focus to include , PAs, NPs, and certified registered nurse anesthetists (CRNAs). For one state, this initiative has been very successful, with 64% of participating physicians staying in rural areas of the state [15].

Loan Repayment and Scholarship Programs

Loan repayment and scholarship programs are noted as common methods to encourage providers to practice in rural areas. The fundamental difference in the two programs is based on the point in time at which the money is disbursed to pay for the student's tuition expenses. Under a loan repayment program, the loan that was obtained by the student to pay for their education is paid off after the student has completed his or her educational program. Scholarship programs, in contrast, pay the tuition fees up front directly to the student's educational institution. Regardless of the program, the premise is that students must agree to provide service in a designated health professional shortage area or underserved community, usually for a fixed amount of time upon graduation.

To enable states to respond to current changes in the labor market, loan repayment programs are typically preferred because they enable quick access to graduating professionals. Typically, scholarship programs are used to place physicians in chronically underserved communities. States typically require that the service payback equate to 1 year of service for each loan year, resulting in payback periods of a minimum of 2 to 3 years up to a maximum of 4 to 5 years.

44 states have physician loan repayment programs; 37 have loan repayment programs for other practitioners, including PAs, NPs, certified nurse midwives, and social workers;

and 24 states have scholarship programs. Appendix A also provides the most recent survey results of the tuition payment programs implemented by each state.

States pay for these tuition payment programs in a variety of ways, including:

- state-only funds;
- combination of federal, state, and local matching dollars;
- federal-state matching funds for a National Health Service Corps program;
- a charge added to provider licensure application fee; and
- student tuition fees [15].

A few states also incorporate incentives into their tuition payment programs. The Tennessee Health Access Act Program, for example, not only covers up to \$50,000 per year for medical education debts for physicians, PAs, and NPs, but also up to \$25,000 per year to cover practice start-up costs. Some states also use non-compliance penalties to encourage completion of a student's or resident's placement obligation. 15 states report imposing penalties on those participants who default on their obligation. Some states, such as Georgia and Oklahoma, set penalties at 3 times the funds received [15].

One measurement for analyzing the success of provider loan repayment and scholarship programs is based on the retention rate beyond the obligation period. Few programs routinely and consistently track retention rates. However, a recent study of placement and retention in state medical scholarship and loan programs by the University of North Dakota Rural Health Research Center focused on 4 state programs that do monitor retention. These states tracked physician retention for 2 to 6 years. Physician retention rates ranged from 53% to 85%.

Outside of the RWJF initiative and the initiatives discussed above, states have also implemented specific programs, such as site match programs, J-1 Waiver programs, locum tenens programs, and spousal programs [15]. Appendix B provides the most recent survey results of the different provider recruitment and retention programs implemented by each state.

Health Plan Initiatives

By early 1996, there were at least 180 rural health networks in the United States. A rural health network is defined as “a formal organizational arrangement among rural health care providers (and possibly insurers and social service providers) that uses the resources of more than one existing organization and specifies the objectives and methods by which various collaborative functions are achieved.” About one-fifth of rural health networks contract directly with self-insured employers, and a similar portion contract with health plans [16].

It is unclear how managed care in rural areas has and will continue to affect providers and consumers. Many rural providers have perceived health plans as a threat, because they: (1) may impose more financial risk on rural providers than they are capable of bearing;

(2) may not make concessions for circumstances particular to rural areas (e.g., transportation barriers, larger caseloads for practitioners, and limited infrastructure in general); and (3) may absorb most or all the new PCPs and give them incentives to locate in urban and suburban areas, draining health care resources away from rural areas and, thus, exacerbating the existing maldistribution of PCPs [16]. As a result, rural providers have been less than willing to contract with health plans due to these kinds of reasons.

On the other hand, because many health plans are large organizations with considerable resources, they have the potential to invest in building adequate rural health care delivery systems. They may enable rural providers to participate in more sophisticated medical management information systems. They can provide a steady income stream via capitation and other contracts to physicians and hospitals, which may be especially welcome in more economically depressed areas. It has also been argued that health plans use mid-level and non-physician practitioners better than physicians do. They may improve access to relevant medical technologies by linking rural providers to urban health centers through telecommunications and mobile health units [16]. Health plans can also provide administrative support for sole practitioners, reducing paperwork (e.g., billing, prior authorization, after hours call center) by centralizing an office manager or other staff at one office, or rotating that person to many offices. Health plans can collaborate with physicians to develop and disseminate best practice clinical practice guidelines. In addition, health plans can provide temporary physician support for those rural physicians needing vacations.

Key Focus for Arizona Policy Makers

In summary, critical success factors for increasing access to physicians and other providers are:

- expand the state's needs assessment capabilities to recognize areas of health care shortages;
- increase the use of loan repayment programs for flexible and rapid responses to health care shortages;
- focus on mid-level practitioners to provide health care services in rural areas, and the expansion of prescriptive authority for these providers;
- provide practitioners with start-up loans, subsidized liability insurance, and technical assistance to minimize disincentives to rural practice; and
- increase access to specialists through telemedicine initiatives.

The following strategies maximize health plan success in the unique rural marketplace:

- develop and maintain a collaborative relationship with providers before and after contract negotiations;
- provide administrative and clinical support to rural providers as a contract incentive;
- offer value from both a cost/quality perspective and provide quality customer service;
- focus on flexible benefit packages for residents that desire preventive packages versus residents that need catastrophic coverage; and

- keep contributions as low as economically feasible.

While these strategies are helpful for a health plan to serve rural residents, they do not in any way guarantee success. Careful contract administration, member support, and cost management techniques must also be employed to maintain economic viability.

Geographic Isolation

There are a number of initiatives associated with minimizing the sense of geographic isolation for both residents and members in rural areas. Frequently, community-specific analysis is required to determine the available resources and creative methods that could be implemented to enhance the general transportation of services, provide health educational outreach, or augment EMS. Solutions that some states have initiated include:

- mobile clinics for the delivery of outreach services;
- variety of telemedicine initiatives to enhance resident and provider health education and support; and
- creative funding to support their local EMS.

Mobile Clinics

Collaboration and creative funding via grants and community resources provide opportunities for communities to enhance outreach efforts for health care services. One example is the mobile clinic implemented in West Virginia. The proximity of health care providers and social services agencies (e.g., the health department and the Family Resource Networks) provided the opportunity for collaboration. Using funding from a grant, the hospital, the health department, the Senior Citizens Center, and another hospital in an adjacent county combined resources to establish a mobile clinic to serve isolated portions of their county. The clinic is staffed by a PA or NP, a health department nurse, a social worker, and a senior citizen liaison, and charting is consolidated to a chart used by the hospital and van staff. Management is coordinated by an interagency team. The mobile clinic is governed by the same quality assurance and operating policies used by the hospital-based [11].

Examples, such as the one described above, demonstrate how communities must search out unique methods to enhance the outreach of health services to rural residents using a variety of funding sources, resources from private and public agencies, and more than just hospitals to successfully meet the needs of rural communities.

Telemedicine

The American Telemedicine Association defines telemedicine as “the use of medical information exchanged from one site to another via electronic communications for the health and education of the patient or health care provider and for the purpose of improving patient care” (American Telemedicine Association). The 1990s have seen a dramatic increase in the number of telemedicine networks serving rural communities.

Decreasing costs and higher-quality telemedicine equipment have made telemedicine systems more commonplace than at any previous time. The increase in teleradiology (radiology consultation via electronic methods) is an example of enhanced specialty consulting. Between 1993 and 1997, the number of teleradiology consults increased from less than 5,000 per year to well over 200,000 per year [17].

Telemedicine has enhanced the linkage between rural providers and colleagues at major medical centers, helping them achieve a level of professional support and collegiality previously unavailable, thus, supporting them to remain in communities where they are desperately needed. The Balanced Budget Act of 1997 brought about a significant change in Medicare telemedicine reimbursement policy. As of January 1, 1999, Congress required CMS to pay for telemedicine consultation services. However, the reimbursement restrictions have limited the amount of disbursement to \$20,000 for 301 claims over a two year period [18]. Beginning on October 1, 2001, the facility in which the patient is presented for a telehealth visit is paid a fee of \$20, which is adjusted by the Medical Expenditure Index in subsequent years. However, there are several conditions that must be met for payment of services [19].

In addition to Medicare payments, a CMS Web site indicates 20 state Medicaid programs and several private carriers have begun to reimburse Telemedicine services [20]. Overall, telemedicine continues to face a series of challenges in the areas of technology and public and private sector policy that have limited the incorporation of new telecommunications technologies into the delivery of health care.

EMS support

EMS providers need to integrate more fully with public health and social service agencies, PCPs, and other health care facilities to ensure that patients are referred or transported to the most clinically appropriate and cost-effective facility. Primary care and EMS cannot occur in isolation; rather they should be part of a seamless system that provides patients with well-organized and high-quality care. Examples, such as the Red River Expanded EMS Demonstration Project in northern New Mexico, demonstrate that increased training and medical supervision, along with expanded public health and primary care protocols for selective rural EMS personnel, enhance appropriate access to the overall health care system. Rural Emergency Medical Technicians (EMTs) can more fully integrate with PCPs to supplement evening and weekend coverage by triaging and referring patients back to the local PCPs.

A critical concern is the dependence on volunteer staff for EMS. The many hours of training, internships, and recertification requirements are grueling and are dissuading many people from becoming EMTs. These volunteers should be encouraged to work more cooperatively and collaboratively with local providers and government agencies for the enhancement of the local EMS system. EMS is a critical component of rural health care, and such collaborative and cooperative relationships are vital for the preservation of the EMS system, as well as outreach and telemedicine initiatives.

Key Focus for Arizona Policy Makers

In summary, critical success factors for reductions of isolation due to geographic disparity are:

- create collaboration between multiple health and non-health related sources for outreach of health services;
- initiate joint efforts from multiple sources for mobile clinics to schools, markets, and other community events for primary and preventive care services;
- implement telemedicine initiatives to enhance resident education and specialty support for generalists;
- design EMS that are integrally linked to the regional health system; and
- encourage volunteer EMS providers to collaborate with local rural governments to enhance the delivery of EMS.

Hospital Solvency

The early 1980s saw an increase in the number of rural hospitals that closed their operations, leaving those rural communities without reasonable hospital or emergency services. The closure of these rural hospitals exacerbated the lack of health care access. To combat further hospital closures, the CMS and the remaining hospitals introduced several initiatives to improve the profitability levels of rural hospitals and limit the exposure to closure. These initiatives included:

- Demonstration Waiver Programs;
- Critical Access Hospital (CAH) Designations; and
- Hospital Initiatives to Enhance Provider Availability.

Demonstration Waiver Programs

Providing services to health care intensive cases may further limit the already stretched resources available to rural communities. Demonstration Waiver Programs approved by CMS have allowed rural hospitals to shift their focus away from these intensive cases by referring them to other hospitals. Intensive health care cases would be referred to a full service hospital in a neighboring community, referred to as an EACH. Since intensive cases are referred out of the community, rural hospitals are allowed to limit their inpatient services and focus care on less intense services to sustain the health care system. These services include 24-hour emergency care, primary care, limited acute care, and long term care services. These limited service hospitals, referred to as rural primary care hospitals (RPCH), are then free to focus on a broader array of health care needs of the community [15].

CMS sponsored the use of EACH/RPCH arrangements through Demonstration Waiver Programs, which provided grant funds for program planning, development, and implementation. In addition to contributing to the costs of aligning the rural services to the needs of the Demonstration Waiver Program, the RPCH received cost-based

reimbursement for the inpatient and outpatient services for Medicare patients. The enhanced methodology reimbursement alleviated some of the risk of providing care to the elderly population. In order to receive the additional funding, the RPCCH had to meet the following requirements:

- integrate services with an EACH;
- limit inpatient hospitalization to 72 hours; and
- limit inpatient capacity to 6 beds (12, including swing beds) [15].

Similar to the EACH/RPCH program, CMS approved a pilot program in Montana, referred to as the MAF. This program also provides funds for shifts in service delivery and provides cost-based reimbursement for Medicare inpatient and outpatient services. However, they further extended the cost-based reimbursement to apply to Medicaid recipients. The MAF program also provides more liberal requirements related to the average length of hospital stay and the limit on number of beds. Below is a list of the requirements for participating MAFs:

- coordination with Deaconess Billings Clinic hospital;
- limit inpatient hospitalization to 96 hours; and
- no limit on number of beds.

Although the cost-based reimbursement does improve the financial viability of rural hospitals, the greatest opportunity for financial improvement has been the reduction in costs by consolidating administrative services, such as purchasing, billing, collections, legal functions, peer review, and quality assurance. Some rural hospitals were able to achieve savings through the use of recycled equipment that the full service community would have discarded. Additional cost savings techniques included training regarding bad debt reductions. Either through group purchasing or training with the full service hospital, rural communities can achieve significant cost savings through waiver programs [21].

Critical Access Hospital (CAH) Designation

The Balanced Budget Act of 1997 replaced the 7-state EACH/RPCH initiatives with the rural hospital flexibility program, which created the CAH designation. The program, applicable to approximately 900 [22], is a combination of the EACH/RPCH and MAF requirements:

- must partner with at least one full service hospital;
- limits inpatient stays to 96 hours; and
- limits inpatient capacity to 15 beds (25, including swing beds) (Critical Access Hospital Resource Center).

Upon meeting these requirements, a hospital is designated as a CAH. They may receive grant funds for the implementation of their CAH program. The CAH will also receive cost-based reimbursement for inpatient and outpatient services. Although the cost-based funding relates only to Medicare services, the state Medicaid programs have often

implemented similar reimbursement strategies following the Medicare implementation. To enhance the existing CAH (Medicare) incentive, Minnesota is already providing cost-based reimbursement for their Medicaid inpatient and outpatient services [22].

Hospital Initiatives to Enhance Provider Availability

Rural hospital revenues are dependent on individuals remaining within the rural community for health care services. To the extent that individuals are frustrated by the lack of providers or consistency in providers, they will seek their health care outside of the rural community. Therefore, rural hospitals have a financial incentive to participate in physician attraction and retention activities. Rural hospitals often contract with organizations that recruit physicians to the rural market. Rather than just contracting with an agency to find the physicians, the hospital provides rent free office space within the hospital in exchange for the physicians' services related to emergency care.

Some rural hospitals have been limiting their inpatient services to focus on outpatient initiatives, making space available within the hospitals for other health care service opportunities. This utilization of the free space for additional health care services is referred to as vertical, within-community networking. Examples of services within these vertical networks include retail pharmacies, health care or disease management programs, fitness clubs, immunization services, and prevention clinics. Rural hospitals have also utilized available office space to house visiting specialists that provide care to the rural community on a regular basis. Rural hospitals have also set aside designated areas for telemedicine consultations for physicians [11].

In addition to housing multiple health care services, EMSs are often stationed at the rural hospitals. This allows the EMS technicians to better understand the types of services provided within the limited service hospitals (hospitals without extensive trauma and specialty services). The EMT, in collaboration with the rural physician, determines whether EMS patients could be treated within the rural community or sent to one of the participating full service hospitals. For example, EMS staff, by being stationed at the hospital, get to know the equipment, nurses, physician(s), and all other resources better and, therefore, can help make the critical decision of whether to transfer a patient to an urban center or rural hospital.

Key Focus for Arizona Policy Makers

In summary, critical success factors for hospital solvency are:

- utilize excess space within the hospital to house the available health care services under one roof;
- utilize cost-based funds through CMS-sponsored programs;
- collaborate with full service hospitals to reduce the administrative and capital cost burden associated with providing health care services; and
- assist with attraction and retention of physicians and extenders.

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Appendix 1—Tuition Payment Program

State	Physician Loan Repayment	Other Practitioner Loan Repayment	Scholarship
AL	?		?
AZ	?	?	
AR	?		?
CA	?	?	?
CO	?	?	
DE	?		
FL	?	?	?
GA	?	?	?
HI			?
ID	?	?	
IL	?	?	?
IA		?	?
KS	?		
KY	?	?	?
LA	?	?	
ME	?	?	?
MD	?		
MA	?	?	
MI	?	?	
MN	?	?	
MS			?
MO	?	?	?
MT	?		
NE	?	?	?
NV	?	?	?
NH	?	?	

State	Physician Loan Repayment	Other Practitioner Loan Repayment	Scholarship
NJ	?	?	
NM	?	?	
NY	?	?	?
NC	?	?	
ND	?	?	
OH	?	?	?
OK			?
OR	?	?	
PA	?	?	
RI	?	?	
SC	?	?	
SD	?	?	?
TN	?	?	
TX	?	?	?
UT	?	?	?
VT	?	?	
VA	?	?	?
WA	?	?	?
WV	?	?	?
WI	?	?	
WY	?		?
TOTAL	44	37	24

Note: *Other practitioners could include PAs, NPs, certified nurse midwives, and social workers.

Source: National Governors Association, June 1995

Appendix 2—Recruitment and Retention Program

State	Medical Student/ Resident Rural Rotation	Other Practitioner Rural Rotation ¹	Site Match Program	Secondary or Undergraduate Student Rural Health Education Program	Technical and Training Assistance	"State 20" J-1 Visa Waiver Program 2	Financial/ Tax Incentives	Locum Tenens Program	Spousal Program
AL	?	?	?	?		?	?		
AK	?	?				?	?		
AZ	?	?	?	?	?	?	?	?	
AR	?	?			?	?	?		
CA	?	?	?		?				
CO	? ³		?	? ³	?	⁴		? ³	
DE						?			
FL	?	?			?	?			
GA	?	?			?	?			
HI	?	?		?		?			

¹ Other practitioners could include PAs, NPs, certified nurse midwives, and social workers.

² This information was compiled through a survey conducted by the Missouri Office of Rural Health in May 1995 at the request of the National Organization of State Offices of Rural Health and the American Immigration Lawyers Association.

³ These programs are administered out of the Colorado Area Health Education Center (AHEC) system.

⁴ Colorado conducted an assessment on developing a J-1 Visa Waiver program and decided not to participate in the "State 20" program.

State	Medical Student/ Resident Rural Rotation	Other Practitioner Rural Rotation ¹	Site Match Program	Secondary or Undergraduate Student Rural Health Education Program	Technical and Training Assistance	"State 20" J-1 Visa Waiver Program 2	Financial/ Tax Incentives	Locum Tenens Program	Spousal Program
ID	?	?	?		?			?	?
IL	?			?		?	?		
IN	?	?				?	?		
IA	?	?			?	?			
KS					?				
KY	?	?	?	?	?	?		?	
LA	?		?	?			?	?	
ME	?	?				?	?	?	
MD	?	?			?	?			
MA	?	?	?		?	?			
MI		?	?		?	?			
MN	?	?			?	?			
MS				?		?			

¹ Other practitioners could include PAs, NPs, certified nurse midwives, and social workers.

² This information was compiled through a survey conducted by the Missouri Office of Rural Health in May 1995 at the request of the National Organization of State Offices of Rural Health and the American Immigration Lawyers Association.

State	Medical Student/ Resident Rural Rotation	Other Practitioner Rural Rotation ¹	Site Match Program	Secondary or Undergraduate Student Rural Health Education Program	Technical and Training Assistance	"State 20" J-1 Visa Waiver Program 2	Financial/ Tax Incentives	Locum Tenens Program	Spousal Program
MO	?	?		?	?	?			
MT	?	?			?				
NE	?	?	?	?		?			
NV	?	?			?	?			
NH	?	?	?		?	?		?	
NM		?			?	?	?	?	
NY			?		?	?	?		
NC	?	?	?	?	?	?	?		
ND	?	?	?	?		?			
OH	?	?				?			
OK	?		?	?		?	?		
OR			?		?		?	?	

¹ Other practitioners could include PAs, NPs, certified nurse midwives, and social workers.

² This information was compiled through a survey conducted by the Missouri Office of Rural Health in May 1995 at the request of the National Organization of State Offices of Rural Health and the American Immigration Lawyers Association.

State	Medical Student/ Resident Rural Rotation	Other Practitioner Rural Rotation ¹	Site Match Program	Secondary or Undergraduate Student Rural Health Education Program	Technical and Training Assistance	"State 20" J-1 Visa Waiver Program 2	Financial/ Tax Incentives	Locum Tenens Program	Spousal Program
PA			?	?	?	?			
RI	?					?			
SC	?	?			?	?	?	?	
SD	?	?							
TN	?	?			?		?	?	
TX	?	?	?	?				?	
UT		?	?						
VT	?		?		?	?	?		
VA	?	?				?			
WA	?	?	?			?		?	
WV	?	?	?	?	?	?			
WI			?		?	?			
WY	?		?		?				
TOTAL	38	34	24	16	29	36	16	13	1

¹ Other practitioners could include PAs, NPs, certified nurse midwives, and social workers.

² This information was compiled through a survey conducted by the Missouri Office of Rural Health in May 1995 at the request of the National Organization of State Offices of Rural Health and the American Immigration Lawyers Association.