Challenges for Improving Health Care Access in Rural America




A Compendium of Research and Policy Analysis Studies of Rural Health Research and Policy Analysis Centers

2009-2010

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Table of Contents

Table of Contents (continued)

Foreword

The Rural Health Research and Policy Analysis Centers conduct federally-funded health services research to help decision-makers better understand the problems that rural communities face in their efforts to access high-quality, affordable health care and to live healthier lives. In the discussions leading to the passage of the Patient Protection and Affordable Care Act, the U.S. Department of Health and Human Services' Office of Health Care Reform requested research and policy analysis studies on a variety of key rural health care issues from some of the Rural Health Research and Policy Analysis Centers. This compendium is a collection of those twenty-four research and policy analysis studies.

Challenges for Improving Health Care Access in Rural America presents the studies in six sections according to subject matter. The first section, focused on health insurance and its financing, begins with a study that examines the impact of rising unemployment on health insurance. Subsequent studies profile rural health insurance overall and private health insurance in particular. Building on this work, the section ends with a study of a rural-urban comparison of a "building blocks" approach to covering the uninsured.

The next section presents research and policy analysis studies on access to care for rural populations. Included works cover selected measures of access, use of preventive services, and children's access to Medicaid and CHIP. The third section includes profiles of the impact of the economic downturn by examining specific rural communities and their health care sectors.

Sections four and five of the compendium focus on issues in rural health workforce, covering the crisis situation for primary care physicians, general surgeons, registered nurses, and dentists. Studies on the future supply of primary care physicians consider the challenges presented by the aging of the existing pool of primary care physicians and by the availability of residency training to develop the future pool of family medicine physicians.

The final section covers health system challenges with an emphasis on rural impacts of financing and quality initiatives. Studies identify the rural issues and challenges presented by current approaches to bundled payments, preventable hospital readmissions, health information technology policy, and comparative effectiveness research.

The appendix provides contact information for key staff of the Rural Health Research and Policy Analysis Centers, along with their website addresses, where additional research and policy analysis studies are available.

The Office of Rural Health Policy is releasing this research and policy analysis compendium to fuel continuing discussion of the challenges facing rural communities as they implement health systems reform generated by the Patient Protection and Affordable Care Act and by other policy changes.

Joan F. Van Nostrand, DPA
Director of Research
Office of Rural Health Policy

Health Insurance and its Financing: Challenges in Meeting Rural Needs

RUPRI Center for Rural Health Policy Analysis
Rural Policy Brief

Brief No. 2009-6 June 2009 www.unmc.edu/ruprihealth

Impact of the Recession on Rural America: Rising Unemployment Leading to More Uninsured in 2009

Timothy McBride, PhD, and Leah Kemper, MPH

The 2008-09 recession has impacted the United States in many profound ways, but perhaps most dramatically through increased unemployment. Job loss for many means loss of employer-sponsored health insurance or ability to purchase individual insurance. Some individuals can obtain coverage through Medicaid or private health insurance, but many remain uninsured.[1]

This brief presents the results of state and county analysis of unemployment rates nationally in urban and rural (non-metropolitan) areas over the period 2007-February 2009, encompassing the period before the recession started and a recent monthly period. Estimates presented are based on analysis of Current Population Survey (CPS) and Bureau of Labor Statistics (BLS) data. Estimates of county-level unemployment rates are first obtained from BLS data for 2007 and 2009, and this county-level data is aggregated up to the state level for metro and non-metro areas, using Economic Research Service county-level definitions of metropolitan and non-metropolitan. To compute an estimate of uninsurance rates in 2009, the current unemployment rates from 2009 as well as the predictive model from Holahan and Garrett[1] are used to capture the relationship between insurance coverage and unemployment.

Key Findings:

- Unemployment in the United States reached a rate of 8.9% in February 2009, resulting in an estimated 5 million newly uninsured Americans, for an estimated total of over 50 million uninsured in February 2009 (Table 1).
- In rural areas the unemployment rate in February 2009 was higher (9.8%) than it was in urban areas (8.7%), resulting in an estimated 800,000 newly uninsured individuals (Table 1).
- The unemployment rate in every state increased, but the most severe unemployment was concentrated in the East and Pacific West (Table 2).
- Nationally unemployment grew from 4.6% in 2007 to 8.9% in February 2009, while the uninsurance rate is estimated to have grown from 15.6% in 2007 to 17.2% in February 2009 (Table 1).
- The RUPRI Center estimates that the uninsurance rate has increased in rural areas in every state, but the highest uninsurance rates remain in the South, Southwest, and Pacific West (Table 2).

Table 1. Unemployment and Uninsured Rates in Metro and Non-Metro Areas, 2007 and February 2009

	Unemployment Rates		Uninsured Persons (millions)		Uninsured Rates	
	2007	Feb. 2009	2007	Feb. 2009	2007	Feb. 2009
Non-Metro	5.1%	9.8%	7.4	8.2	15.5%	17.2%
Metro	4.5%	8.7%	38.3	42.1	15.6%	17.2%
U.S.	4.6%	8.9%	45.7	50.3	15.6%	17.2%

Source: RUPRI Center for Rural Health Policy Analysis of CPS and BLS data, 2008-2009 (see text).

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services (Grant #1U1C RH03718

RUPRI Center for Rural Health Policy Analysis, University of Nebraska Medical Center, 984350 Nebraska Medical Center, Omaha, NE 68198-4350, (402) 559-3889, http://www.unmc.edu/ruprihealth

Impact of the Recession on Unemployment in Rural Areas

Economic analysis suggests that the states that have been hit hardest by the recession are those where home values have dropped the most,[2] in the Northeast and Pacific West, though no region of the country has been immune.[3] In addition, industrial areas of the country (e.g., the Midwest) have been hit by a range of economic factors, including a severe decline in manufacturing, declining crop prices, and drops in exports.

Even before the most recent recession hit, RUPRI Center analysis suggests that unemployment rates were higher in rural areas than in urban areas (Table 1). But the recession has led to a dramatic increase in unemployment to almost 10% in rural areas (9.8% in February 2009).

As significant as these trends are, more significant is the dramatic variation in unemployment across the United States. In rural areas, all but 4 states (Michigan, Mississippi, South Carolina, and Alaska) experienced rural unemployment rates below 7% in 2007 (Figure 1). However, in February 2009, 21 states had rural unemployment rates of over 10% (Figure 2). The highest rates of rural unemployment are concentrated almost entirely east of the Mississippi and on the Pacific Coast, while the Plains are experiencing unemployment rates that are generally below the national average. This dramatic contrast suggests that the problems of unemployment are better understood in regional terms.

Figure 1.

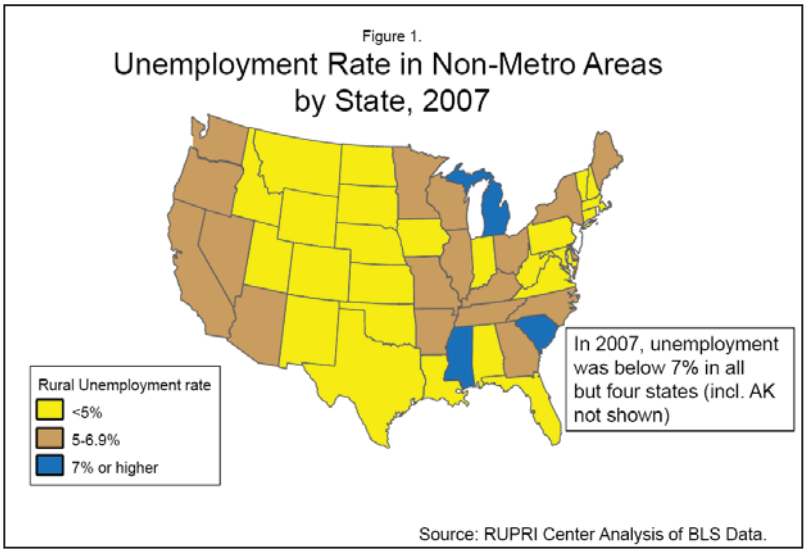
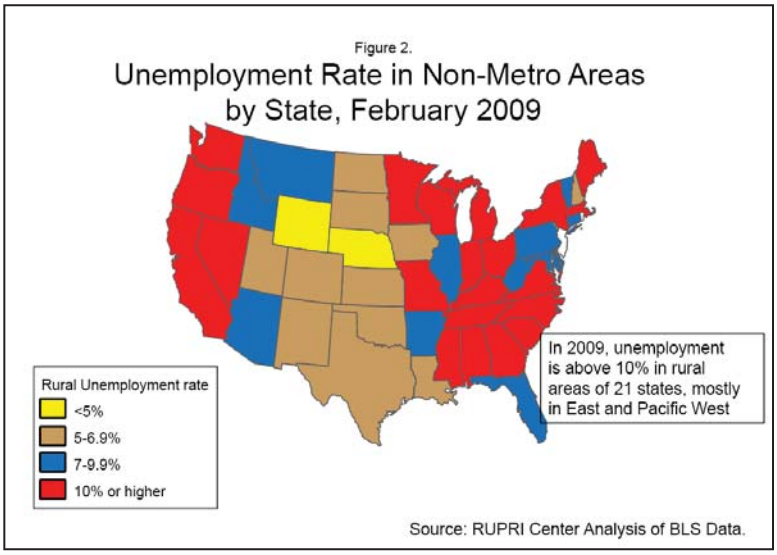
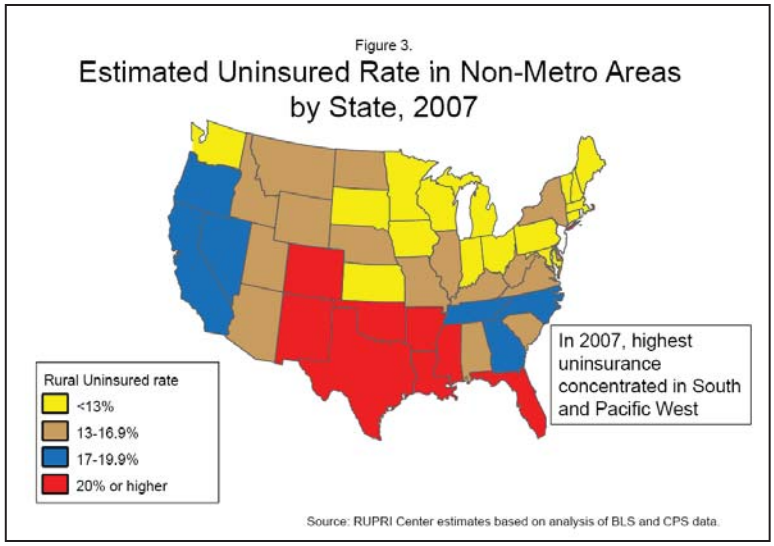


Figure 2.

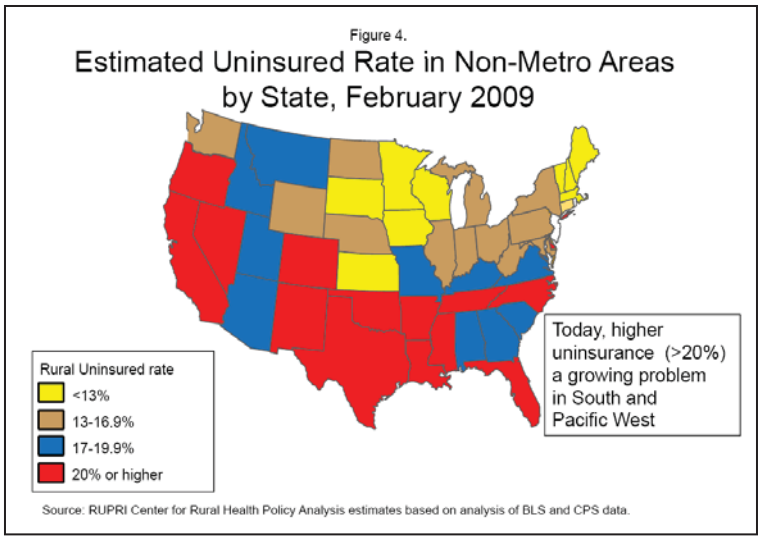


Impact of Rising Unemployment on Uninsurance in Rural Areas

Since most individuals obtain health insurance through their employer, the 2008-09 recession is likely to have a profound impact on the proportion of Americans obtaining health insurance coverage. RUPRI Center projections show that 4.6 million more people were uninsured in February 2009 than in 2007, and 800,000 of those people live in rural areas (Table 1).This is entirely due to the rise in unemployment described above, and is occurring even if some of these individuals (workers and their dependents) are projected to obtain Medicaid coverage.



Even before the recent increases in unemployment, uninsurance problems in rural America have been concentrated in the southern and western regions of the nation, where rural persons have faced not only weaker job markets but also less generous public programs (Figures 3 and 4). The lack of a strong safety net means that the increased unemployment in 2008-09 has likely made the uninsurance problem in the rural south, southwest and Pacific west more acute. RUPRI Center projections show that 13 states have uninsurance rates higher than 20%, up from 8 states in 2007 (Table 2). The percentage of rural uninsured in February 2009 varies dramatically by state, from less than 5% in Massachusetts (which has enacted sweeping health reform) to 26.7% in New Mexico.



Policy Implications

The 2008-09 recession has led to a significant increase in unemployment in rural areas, raising the unemployment rate to almost 10% in February 2009. This rapid increase in unemployment is likely making the uninsured problem—already acute in the southern and western parts of the United States—more acute and is likely to provide more impetus for health care reform. Policymakers must take higher rural unemployment rates into account when considering policy changes, such as employer or individual mandates, that might have differential effects on rural and urban areas. The wide variation in uninsurance rates across the states also suggests that policymakers should pay close attention to the regional considerations of reform.

References

1. Holahan J, Garrett AB. (2009). *Rising unemployment, Medicaid and the uninsured* (Report #7850). Kaiser Commission on Medicaid and the Uninsured. Available at http://www.kff.org/uninsured/upload/7850.pdf.
2. Henderson J, Akers M. (2009). Recession catches rural America. *Economic Review (Federal Reserve of Kansas City),* First Quarter, 65-87. Available at http://www.kc.frb.org/PUBLICAT/ECONREV/PDF/09q1Henderson.pdf.
3. Wilkerson C. (2008). Is rural America facing a home price bust? *The Main Street Economist (Federal Reserve of Kansas City),* 3(6). Available at http://www.kc.frb.org/RegionalAffairs/MainStreet/MSE_1208.pdf.

Table 2. Estimates of Uninsured and Unemployed, by State, in Non-Metro Areas, 2007 and February 2009

	Percent Unemployed		Uninsured, 2007		Uninsured, Feb. 2009	
STATE	2007	Feb. 2009	Number (thousands	Percent	Number (thousands	Percent
TOTAL U.S.	**5.1%**	**9.8%**	**7,398**	**15.5%**	**8,206**	**17.2%**
AK	7.7%	11.6%	38	18.1%	41	19.6%
AL	4.1%	10.9%	183	16.9%	207	19.2%
AR	6.0%	8.8%	192	20.2%	201	21.2%
AZ	5.2%	9.9%	114	16.2%	125	17.8%
CA	6.6%	13.3%	108	17.6%	123	20.0%
CO	3.4%	6.6%	127	20.3%	135	21.5%
CT	4.7%	8.6%	17	10.8%	20	12.3%
DE	3.4%	8.9%	27	16.8%	30	18.7%
FL	4.3%	9.4%	163	20.9%	177	22.8%
GA	5.1%	10.9%	243	17.6%	273	19.7%
HI	3.0%	8.6%	34	10.5%	40	12.6%
IA	4.0%	6.6%	104	8.7%	115	9.6%
ID	3.3%	7.8%	87	16.6%	95	18.2%
IL	5.5%	9.8%	204	14.4%	227	16.0%
IN	4.9%	12.1%	222	12.6%	269	15.2%
KS	3.6%	5.2%	121	12.2%	127	12.8%
KY	6.3%	11.2%	316	15.9%	352	17.7%
LA	4.4%	6.6%	123	20.2%	128	20.9%
MA	3.0%	11.3%	2	2.0%	5	4.8%
MD	4.2%	9.5%	27	12.1%	31	14.0%
ME	5.5%	10.7%	63	9.7%	76	11.6%
MI	7.8%	14.2%	175	10.7%	212	13.0%
MN	5.3%	10.1%	132	9.9%	155	11.7%
MO	5.4%	10.0%	212	16.9%	232	18.5%
MS	7.2%	10.5%	327	21.1%	345	22.2%
MT	3.7%	7.8%	94	16.3%	102	17.8%
NC	5.4%	12.8%	567	18.6%	649	21.3%
ND	3.5%	5.6%	39	13.7%	42	14.4%
NE	2.7%	4.5%	101	14.6%	105	15.2%
NH	3.4%	5.6%	55	11.2%	59	12.1%
NM	3.7%	5.5%	172	26.1%	176	26.7%
NV	5.0%	10.4%	52	19.1%	57	21.0%
NY	5.1%	10.3%	211	13.2%	242	15.1%
OH	6.0%	12.2%	299	10.8%	365	13.2%
OK	4.0%	6.0%	253	23.1%	261	23.8%
OR	6.2%	14.4%	159	18.9%	184	21.9%
PA	4.7%	9.7%	253	11.4%	293	13.2%
SC	7.4%	15.1%	251	16.3%	293	19.0%
SD	3.1%	5.3%	42	11.8%	45	12.6%
TN	6.1%	12.5%	276	17.8%	313	20.2%
TX	4.5%	6.7%	538	21.2%	557	21.9%
UT	3.1%	6.6%	81	15.9%	87	17.1%
VA	4.2%	10.0%	206	16.3%	231	18.3%
VT	4.1%	8.1%	51	11.2%	59	12.7%
WA	5.7%	10.9%	60	11.5%	69	13.5%
WI	5.2%	10.1%	105	8.7%	126	10.5%
WV	4.8%	7.9%	121	15.5%	130	16.7%
WY	2.8%	4.7%	50	14.7%	53	15.4%

SOURCE: RUPRI Center for Rural Health Policy Analysis (see text for more details).

Note: Some states are not shown because they have no non-metropolitan counties (DC, NJ, RI).

Muskie School of Public Service

Maine Rural Health Research Center

Research & Policy Brief

July 2009

Health Insurance Profile Indicates Need to Expand Coverage in Rural Areas

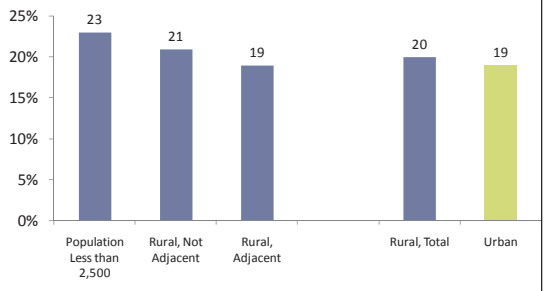
Introduction

More than twenty years of research has demonstrated that rural residents are at greater risk of being uninsured compared to urban residents. As the nation considers whether and how to reform the healthcare system to achieve expanded health insurance coverage and access to care, it is important to consider differences in health insurance coverage for those living in rural and urban areas. This brief provides information on the health insurance status of rural Americans, summarized from a more detailed chartbook.[1] Analyses are based on data from the 2004-05 Medical Expenditure Panel Survey[2], with rural residents divided based on whether they are near an urban county ("adjacent") or not ("not adjacent"). For sub-groups of rural residents living in not adjacent areas, we separated counties with fewer than 2,500 residents from those with a larger population.

Health Insurance Coverage in Rural Areas

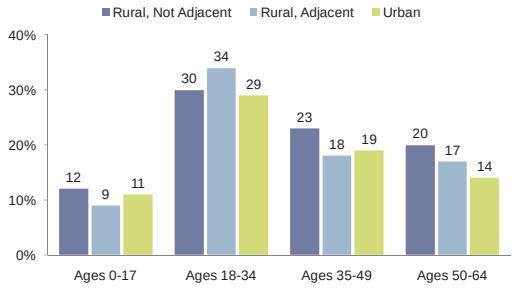
Rural residents – particularly those living in not adjacent areas – are more likely to be uninsured, more likely to have coverage through public sources, and less likely to be privately insured than residents of urban areas.

Figure 1: **Uninsured rates are higher among rural residents living in smaller counties more remote from urban areas (all ages).**



Data: Medical Expenditure Panel Survey, 2004-05
Uninsured differences by residence significant at $p \leq .05$.

Figure 2: **Young adults have the highest uninsured rates; however, the largest rural-urban discrepancy is among older adults (aged 50-64).**



Data: Medical Expenditure Panel Survey, 2004-05
Uninsured differences by residence significant at $p < .05$ for all categories except ages 35-49.

- As population density and proximity to urban areas decrease, rural uninsured rates increase. In the smallest and most remote rural areas (population less than 2,500), the uninsured rate is 23% compared to an urban rate of 19% (Figure 1).
- Between 1997 and 2005, public health insurance rates nearly doubled among rural children from 21% to 39%. This gain offset a decline in private coverage, reducing the rate of uninsured rural children from 21% in 1997 to 9% in 2005.
- Roughly one-quarter of all adults are uninsured, with higher rates in rural, not adjacent areas. These rates have not changed since 1997.

Fast Facts

- A greater percentage of rural residents than urban residents are uninsured, especially among those living in remote areas.
- In both rural and urban areas, the uninsured rate among adults is much higher than for children. Among adults over age 50, uninsured rates are highest in the most remote rural places.
- Compared to urban adults, rural adults are less likely to be in employment situations where private coverage is offered.

Authors

Jennifer Lenardson, MHS
Erika Ziller, MS
Andrew Coburn, PhD
Nathaniel Anderson, MPH

This brief is based on a longer chartbook by the authors available at http://muskie.usm.maine.edu/Publications/rural/Rural Health-Insurance-Chartbook-2009.pdf

For additional information about this study, contact Jennifer Lenardson at (207) 228-8399 or jlenardson@usm.maine.edu.

Risk Factors for Being Uninsured

Rural residents are more likely to be uninsured than urban residents and this risk is greater among rural residents who are adults and have fewer workers in the family.

- Compared with urban residents, young adults aged 18-34 in adjacent and not adjacent areas have higher uninsured rates. Among older adults, the risk of being uninsured is greatest in rural, not adjacent areas. This is of particular concern because adults in this age group are more likely to have or develop health problems (Figure 2).

- Among residents of rural, not adjacent areas, 23% are uninsured when there is only one full-time worker in a family, compared to 18% of urban residents. When there are no full-time workers, 31% of rural, not adjacent residents are uninsured compared with 28% of urban residents. Among families with two full-time workers, uninsured rates are actually lower in rural, not adjacent areas (10%) compared with urban (14%) and rural adjacent areas (14%).

Characteristics of the Rural and Urban Uninsured

Considering only the characteristics of the uninsured, rural residents in smaller and more remote counties often have characteristics that make improving coverage rates especially challenging, including lower incomes, being in fair or poor health, and low educational attainment.

- Compared to half of the urban uninsured, 59% of those in rural, not adjacent areas have low family income (less than 200% of the federal poverty level).

- A smaller proportion of uninsured persons living in rural areas are in excellent or very good health (54%) than those living in urban areas (61%).

- Nearly all (95%) uninsured adults in rural, adjacent areas have less than a college education.

Employment and the Rural and Urban Uninsured

Rural adults are less likely to be employed in jobs where health insurance coverage is offered. Compared to urban adults, rural adults are more likely to be not employed or to work for employers that do not sponsor health insurance coverage.

- Nearly one-third (30%) of uninsured rural residents are not employed compared to 27% of urban residents.

- In rural, not adjacent areas, 64% of working adults are offered coverage through their employer compared to 71% in urban areas. When coverage is offered, 95% of rural and urban workers are enrolled.

- A greater proportion of self-employed workers living in rural, not adjacent areas are uninsured (40%), compared to self-employed workers in rural, adjacent (24%) and urban (32%) areas.

- Almost one-third (30%) of the uninsured in not adjacent rural areas work part-time compared to 27% in urban and rural adjacent areas. Just 20% of part-time workers in rural, not adjacent areas are offered coverage, compared to 29% in urban areas.

Implications for Health Reform

Our findings have important implications for health reform strategies designed to expand insurance coverage. Rural residents are in greater need of health reform, as demonstrated by their higher uninsured rates—particularly in the most remote rural communities. The rural-urban disparity in coverage is driven by higher uninsured rates among rural adults, a group that should be part of any strategic effort to improve coverage.

Public sources of coverage (Medicaid and CHIP) are an important source of health insurance for rural Americans and have dramatically reduced the uninsured rate among children over the past decade. The success of public expansions on reducing the uninsured rate among rural children suggests that access to public coverage be sustained and potentially extended to rural adults.

Options for increasing private coverage may be less effective in rural areas if small employers or part-time workers are excluded. Given rural residents' looser connection to employment, tax credits for individual insurance may be part of an effective solution. Whether based on public or private plans, reform efforts to expand health insurance coverage should consider the limited means of the rural uninsured in determining sliding-scale premiums, subsidies, or buy-in plans.

---

[1]Lenardson, J.D., Ziller, E.C., Coburn, A.F., & Anderson, N.J. (2009, June). *Profile of rural health insurance coverage: A chartbook.* Portland, ME: University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center. http://muskie.usm.maine.edu/Publications/rural/Rural-Health-Insurance-Chartbook-2009.pdf

[2]Unless otherwise noted, all estimates of health insurance coverage are based on point-in-time data from December of the survey year (2004 or 2005).

Maine Rural Health Research Center
http://muskie.usm.maine.edu/ihp/ruralhealth

Supported by the federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services, CA#U1CRH03716

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Muskie School of Public Service

Maine Rural Health Research Center

Research & Policy Brief

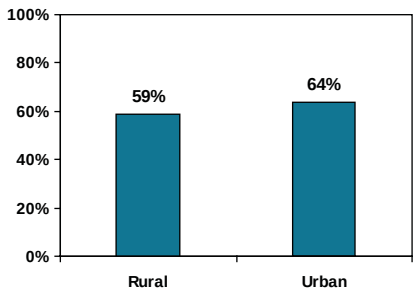
April 2009

Private Health Insurance in Rural Areas: Challenges and Opportunities

Private insurance is less common in rural areas

Rural residents under age 65 are less likely than their urban counterparts to have private health insurance coverage (59% vs 64%, Figure 1). This difference is driven by the unique characteristics of rural places that make it challenging to create and sustain viable private insurance pools. Chief among these are the predominance of small businesses and self employed, part time, and low wage workers.

Figure 1: Percent with Private Insurance, December 2006



Source: 2006 Medical Expenditure Panel Survey
Note: Includes those with private insurance only in December 2006; those dually covered by public and private are classified as public. Urban and rural are defined respectively as MSA or non-MSA county, based on Office of Management and Budget designation.

Rural workers are less likely to have an employer that offers coverage

Workers in rural areas are somewhat more likely than urban workers to be self-employed (14% versus 12%).[1] The self-employed may gain private coverage from another family member, although rural families are less likely to contain two full time workers.[1] They may also purchase private health insurance directly from an insurance company, becoming "individually" insured.

Among those employed by a business, only 67% of rural employees work for a firm that offers coverage compared to 71% of urban employees.[1] The principal reason is that rural employees are more likely to work for small businesses[2] that tend to face the combined pressures of higher health insurance premiums costs and smaller operating margins.

Rural workers are more likely to earn low wages or to work part time than their urban counterparts.[1] Firms employing more low-wage or part-time workers are much less likely to provide health insurance to any of their employees.[3]

Rural businesses, families and individuals pay more for the same benefits

Small employers face inherent challenges in providing coverage for themselves and their employees. Lower purchasing power compared to large firms, increased risk of adverse selection and higher marketing and administrative costs all contribute to insurers charging higher premium costs to smaller employers.[4] Even after adjusting for business size, rural businesses pay more for the same plan than their urban counterparts.[5] Because of the higher premiums paid by small businesses, employees' share of premiums is often high. One study found that while many small businesses actually required lower premium contributions for single employees to improve the take-up rate (thereby lowering unit costs), the employer share for family coverage was much less generous than in larger businesses.[4] Thus, rural families wanting to purchase coverage through a worker's employer may find it unaffordable to do so.

More rural residents purchase individual insurance policies.[6] Premiums for such policies tend to be high, and typically offer less generous coverage (fewer benefits and higher out-of-pocket costs).

Authors

Erika Ziller, MS
(207) 780-4615
eziller@usm.maine.edu

Andrew Coburn, PhD
(207) 780-4435
andyc@usm.maine.edu

Acknowledgment:
The authors acknowledge the work of Jennifer Tolbert and colleagues, whose detailed guide *Approaches to Covering the Uninsured* (Kaiser Family Foundation, December 2008) provided valuable background for thinking about reform strategies.

The rural privately insured are at greater risk of being "underinsured"

To reduce health plan costs, many small businesses limit the benefits they provide (e.g., buy plans without maternity care or dental benefits) or buy plans with higher employee cost-sharing requirements.[4] Rural employers are more likely to buy plans with a deductible, and the amount is typically higher than for urban workers.[5]

As a combined result of these benefit limits and their generally lower incomes, rural residents are more likely to be underinsured (defined as having high out-of-pocket costs for health care compared to income).[7] Individuals that are underinsured often experience the same financial barriers to getting needed health care as the uninsured.[8]

Policy options for increasing rural private insurance coverage

Strategies to improve access to private health insurance have particular implications for rural areas. Some of these strategies, and the rural considerations they raise, include:

Employer Mandate: Employers could be required to provide coverage directly, or be allowed to opt out and pay a tax that would fund worker subsidies ("pay or play"). One limitation of mandates is that they may exempt very small businesses (e.g. Massachusetts), limiting their effect in rural areas. Exclusions of part-time or seasonal workers would also diminish the rural impact of mandates as rural workers are more likely to fall into these categories.

Beyond the goal of expanding rural coverage, the economic impact of an employer mandate is an important consideration. Without financial subsidies and mechanisms to equalize premium costs, rural firms may face disproportionately higher costs in complying with a mandate.

Purchasing Pools/Alliances/Exchanges: Targeting problems of the small group market, insurance purchasing pools (called "alliances,"or "exchanges") allow businesses and/or individuals to join together and negotiate with insurers for better premiums. This may increase affordability for rural businesses and individuals, although experience suggests that small group alliances have not increased coverage.[9] Explanations may be unwillingness among some insurers to offer plans to alliances, or efforts to "cherry-pick" healthy firms into leaving pools.[4] Possible solutions include requiring that small group insurers negotiate with all purchasing alliances, or that all small group plans be sold only through alliances.[9]

Alternatively, small groups and individuals could access existing public purchasing pools such as the Federal Employees Health Benefits Program (FEHBP). This may level the playing field for rural purchasers, both because the FEHBP guarantees access to a carrier, and because it could address rural price disadvantages. However, research indicates that even within the FEHBP, rural areas have many fewer plan choices.[10] Ways to address this might require plans to offer coverage in all markets, or to develop a public plan buy-in option for rural areas where private plans are limited or non-existent.

Tax Credits for Individual Insurance: Because many uninsured do not have access to employer-based coverage, analysts suggest that tax credits for individual insurance would be an effective solution. Given rural residents' looser connection to the full-time, year-round employment market, this option could have a distinct rural benefit. Seasonal, part-time, and self-employed workers could gain better access to private coverage that was portable if work circumstances changed. However, the lower incomes of rural residents suggest that credits need to be large, and paid when insurance premiums are due rather than as an annual tax refund. Also, without policy to make individual plans more affordable, subsidizing them may not be an efficient use of tax dollars.

For those interested in the Maine Rural Health Research Center's recent policy brief on public coverage in rural areas, please see: http://muskie.usm.maine.edu/Publications/rural/pb/Rural-Public-Health-Insurance.pdf

References

1) Lenardson, JD, Ziller, EC, *Profile of rural health insurance coverage: A chartbook.* Portland, ME: University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center; 2009, forthcoming. 2) Coburn AF et al. Urban-rural differences in employer-based health insurance coverage of workers. *Med Care Res Rev.* December 1998; 55:484-496. 3) AHRQ. 2006 Medical Expenditure Panel Survey-Insurance Component. Table 1.A.2.a. *Percent of private-sector establishments that offer health insurance by firm size and selected characteristics: United States, 2006.* 4) Gabel, JR, Pickreign, JD. *Risky business: When mom and pop buy health insurance for their employees*. (Issue Brief). NY, NY: Commonwealth Fund; 2004. 5) Gabel J et al. Generosity and adjusted premiums in job-based insurance: Hawaii is up, Wyoming is down. *Health Aff (Millwood).* 2006; 25:832-843. 6) Coburn, AF et al. *Rural and urban patterns of individual health insurance coverage.* (Working Paper). Portland, ME:Maine Rural Health Research Center; Feb. 2005 7) Ziller EC, Coburn AF, and Yousefian AE. Out-of-pocket health spending and the rural underinsured. *Health Aff (Millwood).* November-December 2006; 25:1688-1699. 8) Schoen C et al. Insured but not protected: How many adults are underinsured? *Health Aff (Millwood).* June 2005;W5.289-W5.302. 9) Long SH, Marquis MS. Have small-group health insurance purchasing alliances increased coverage? *Health Aff (Millwood).* January 2001-February 2001; 20:154-63. 10) McBride, T, Mueller, K, Andrews, C, Xu, L, Fraser, R. *Enrollment in FEHBP plans in rural America: What are the implications for Medicare reform?* (PB2003-8): Rural Policy Research Institute; June 2003.

Maine Rural Health Research Center
http://muskie.usm.maine.edu/ihp/ruralhealth

Supported by the federal Office of Rural Health Policy,
Health Resources and Services Administration,
U.S. Department of Health and Human Services, CA#U1CRH03716

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

RUPRI Center for Rural Health Policy Analysis
Rural Policy Brief

Brief No. 2009-5 June 2009 www.unmc.edu/ruprihealth

A Rural-Urban Comparison of a Building Blocks Approach to Covering the Uninsured

By Timothy McBride PhD

A range of proposals are now being considered to reform the health care system, specifically to provide access to health insurance coverage for the uninsured. Proposals from President Obama and members of Congress include a range of public-private approaches, typically called "building blocks" approaches, which build upon our current system of health insurance to provide access to health insurance for all Americans. This report uses a RUPRI health insurance model to compare the effects of a building blocks approach on health insurance coverage and health spending, focusing on the geographic differences (by metro and non-metro) of this approach.

Covering the Uninsured. Under a building blocks approach, affordable access to health insurance would be achieved by a range of proposals. The following are options under consideration that were included in our comparison.

- ***Health insurance exchange (HIE).*** Individuals could keep their current health insurance, or individuals or employers could purchase from a range of private health insurance plans through a new health insurance exchange, designed to make health insurance more accessible and affordable. In addition to a range of private plans available through the exchange, the exchange could also include a public plan.

- ***Subsidies for health insurance purchased through the insurance exchange.*** Subsidies would be available for low- and moderate-income persons purchasing insurance through the exchange; for example premiums could be limited to 6% of family income, with the rest covered by a federal government subsidy.

- ***Employer pay or play.*** Employers with 10 or more employees would be required to either cover their employees or pay for 80% of the premium in the HIE up to 6% of wages, or if they chose to do so, could pay the equivalent amount to the government.

- ***Refundable credits for small employers.*** Small employers with fewer than 25 employees would receive tax credits to assist them in the purchase of health insurance.

- ***Expand public health insurance eligibility.*** Public insurance (most likely Medicaid) would be available to all persons with incomes at or below 100% of the federal poverty level (FPL) ($22,050 for a family of four in 2009), and CHIP would be extended to include all children under age 18 in families with income up to 300% of FPL. Parents would be required to obtain qualifying insurance for their children (either through a public plan or a private plan).

rupri rural policy research institute

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services (Grant #1U1C RH03718

RUPRI Center for Rural Health Policy Analysis, University of Nebraska Medical Center, 984350 Nebraska Medical Center, Omaha, NE 68198-4350, (402) 559-3889, http://www.unmc.edu/ruprihealth

The analysis presented here is not based on any specific proposal being considered now on Capitol Hill, as the details of the building blocks approach could not be based on the specifics of proposals until these specifics were released.

Effects on Coverage and Health Spending. Results are shown here for two alternative baselines: (a) one based on the March 2008 Current Population Survey (CPS) estimate of 45.7 million uninsured in the United States, and (b) a second updating the first to account for the effects of the recession and the possible impacts of increased unemployment on the number of uninsured, leading to an estimate of 51.0 million uninsured in the United States (Table 1). For the remainder of this discussion, we will highlight only the updated estimates, baseline (b), which is the more likely current scenario. The RUPRI health simulation model, built on the CPS data and a range of other data sources described in the appendix, is based on a series of assumptions about the policies described here, and the responses of individuals to those policy settings, such as the likelihood of taking up coverage (based on a probability model and the characteristics of individuals). Further details about the results and the RUPRI health insurance model are presented in the appendix.

The approach to covering the uninsured that includes the options described on page 1 would cover 42.7 million persons, leaving 8.3 million persons uninsured because they would not take up insurance. In non-metro areas, the approach would cover 6.8 million persons, leaving 1.5 million uninsured, approximately 18% of the uninsured. The model shows that the approach would do a slightly better job of reaching the uninsured in metro areas than in non-metro areas, since in metro areas only 16% of the uninsured would remain.

The approach would cost $141.8 billion in government spending, $102.8 billion of which would be federal dollars (assuming a portion of the spending would be covered by the states) and would include spending to pay for subsidies, Medicaid expansion, tax credits for employers, and other costs. As noted in the appendix, it is not assumed that public spending to finance medical care for the uninsured (e.g., DSH spending) will be reduced as a result of these policy changes, though it may be likely that legislation would include these shifts in public spending.

Private expenditures would increase by $11.2 billion, including $6.7 billion for employers and $4.6 billion for individuals. The employers' costs would be almost entirely a result of the "pay or play" mandate, while the individuals' costs would be the out-of-pocket costs of premiums individuals would pay to obtain insurance, net of savings resulting from lower uncompensated care costs and cost-shifting.

As shown in Table 1, the cost of covering the uninsured has increased significantly as a result of the recession. With the estimated increase in the uninsured from roughly 46 million to 51 million, the government costs of insuring the uninsured have increased from roughly $98 billion to $142 billion and the overall costs have increased from $102 billion to $153 billion.

Summary. The 110th Congress is now considering a range of proposals for reforming the health care system and creating access to affordable health insurance. The estimates shown here demonstrate that these proposals may cover about 42.7 million of the 51.0 million currently uninsured overall, and 6.8 million out of the 8.3 million currently uninsured in non-metro areas. These proposals are projected to cost about $142 billion in increased government spending.

Table 1. Coverage of the uninsured, and costs of covering the uninsured

	ALL PERSONS	Metro	Non-Metro	ALL PERSONS	Metro	Non-Metro
	BASED ON 2008 ESTIMATES OF UNINSURED			BASED ON 2009 ESTIMATES OF UNINSURED		
Number of uninsured (millions of persons)	45.7	38.3	7.4	51.0	42.7	8.3
Number obtaining coverage	38.2	32.1	6.1	42.7	35.9	6.8
Remaining uninsured	7.5	6.1	1.3	8.3	6.9	1.5
TOTAL COSTS of coverage ($Billions)	$102.0	$84.5	$17.5	$153.0	$126.2	$26.8
Government costs	$98.3	$81.4	$17.0	$141.8	$116.6	$25.2
Federal	$74.5	$61.6	$12.9	$102.8	$84.3	$18.4
State	$23.8	$19.7	$4.1	$39.0	$32.3	$6.7
Private Costs	$3.7	$3.2	$0.5	$11.2	$9.5	$1.7
Employer	$2.2	$1.8	$0.3	$6.7	$5.7	$1.0
Individual	$1.5	$1.3	$0.2	$4.6	$3.9	$0.7
PERCENT DISTRIBUTION Number of uninsured (millions of persons)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number obtaining coverage	83.6%	84.0%	82.4%	83.7%	84.0%	82.1%
Remaining uninsured	16.4%	16.0%	17.6%	16.3%	16.0%	17.9%

SOURCE: Simulation model, RUPRI Center for Rural Health Policy Analysis, see appendix.

Appendix

RUPRI Health Insurance Model. The microsimulation of insurance coverage and the costs of covering the uninsured are based on a combination of individual-level data drawn from the Current Population Survey (CPS) and data from a number of other sources as specified below. In particular, the simulation starts with the estimates of the uninsured from combined years of the CPS survey (covering the March 2007-2008 surveys, well over 400,000 observations nationally from these two surveys). Individuals are assumed to be insured by one of the strategies described below, with eligibility for the strategy determined by income relative to poverty, employment status, disability status, age, and family status. Then for each eligibility group, the simulation model makes an assumption about the costs of insuring persons in that eligibility group (described below). The RUPRI health simulation model is based on a blending of the following specific policy assumptions and other model settings:

- ***Health insurance exchange (HIE).*** Premiums are obtained from the Federal Employees Health Benefits Program (FEHBP) plans nationwide to simulate what might be available under an HIE. For each state, FEHBP plans offer nationwide plans and statewide plans. The simulation model assumes that a range of these plans are offered to the individual and the individual chooses from this range of plans. Individuals are guaranteed coverage in the insurance exchange and employers may purchase insurance through the exchange.

- ***Public plan.*** The simulation model assumes the availability of a public plan, in addition to the range of private plans available through the HIE. The public plan's premiums are assumed to be equal to the array of benefits available to Medicare recipients, with the costs of the Medicare plan.

- ***Subsidy for health insurance purchased through the insurance exchange.*** It is assumed that a subsidy is offered through purchases offered through the HIE. Families with income above 400% of FPL receive no subsidy. Below 400% of FPL, premiums are limited to 6% of family income, with the rest covered by a federal government subsidy.

- ***Employer's penalty (pay or play).*** Employers with 10 or more employees either pay for 80% of the premium in the HIE up to 6% of wages, or if they choose to do so, can pay the equivalent amount to the government.

- ***Refundable credits for small employers***. Small employers with fewer than 25 employees receive a credit equal to 50% of premiums paid by firms with 9 employees or fewer and 10% of premiums for firms with 11 to 24 employees.

- ***Expand public health insurance eligibility***. It is assumed that Medicaid is available for all persons with incomes at or below 100% of FPL and that CHIP is extended to include all children under age 18 in families with income up to 300% of FPL. Medicaid costs are obtained from recent estimates at the state level, obtained from the Kaiser Family Foundation (KFF), differentiated by eligibility category (children, adults, and disabled). KFF data are also used to obtain Medicaid matching rates to allocate costs between the state and federal governments.

- ***Take-up rates.*** For the purposes of estimating whether individuals who have access to public and private plan coverage actually will purchase and obtain coverage, the model computes take-up rates for Medicaid coverage (for non-elderly adults) and for all others with the option of choosing employer or other coverage through the HIE. The model starts with the microanalytic database sample described above, drawn from the March 2007-08

CPS file. The CPS sample includes a range of variables on individuals, including their insurance coverage, demographic, employment, and family characteristics. Using these variables, the simulations use a model drawn from the literature to estimate the probability that an individual will "take up" or accept the offer of insurance and become insured, given that they have been offered health insurance.[1] However, the multivariate models were re-estimated for this RUPRI simulation model using more current data. The model relies on several important assumptions, or adjustments to the models from the literature. Perhaps most important, the model relies on the estimates of the policy parameters (especially the health insurance premiums and subsidies) individuals would face under a program described above. It is assumed that the parameters in the model for insurance take up have not changed, but that only the premium amounts and person characteristics have changed over time.

- ***Mandate all parents to cover children under age 18.*** Parents are required to obtain qualifying insurance for their children (either through a public plan or a private plan). Thus, parents with income above 300% of FPL must buy private health insurance to cover their children through the HIE, and parents below 300% of FPL must buy insurance through CHIP/Medicaid.

- ***Reductions in spending by the uninsured***. It is assumed here that some of the private spending on the costs for the uninsured would decline as a result of these policy changes; in particular the (a) out-of-pocket spending by the uninsured, and (b) other private and implicitly subsidized (cost-shifted) spending by the uninsured. Using estimates derived from Hadley et al.,[2] it is assumed that current spending on the uninsured is reduced to a level consistent with the out-of-pocket spending by the insured population for those who obtain insurance. No assumptions are made here about reductions in current public expenditures (e.g., DSH and other public spending) for the uninsured, though it may be likely that legislation would reduce this spending if the number of uninsured falls.

---

[1] Linda J. Blumberg, Yu-Chu Shen, Len Nichols, Matthew Buettgens, Lisa Dubay, Stacey McMorrow. 2003. The Health Insurance Reform Simulation Model (HIRSM): Methodological Detail and Prototypical Simulation Results. Research Report, the Urban Institute, July 31, 2003. Available at http://www.urban.org/url.cfm?ID=410867.

[2] Jack Hadley, John Holahan, Teresa Coughlin and Dawn Miller. 2008. Covering the Uninsured in 2008: A Detailed Examination of Current Costs and Sources of Payment, and Incremental Costs of Expanding Coverage. Report Prepared for the Kaiser Commission on Medicaid and the Uninsured, Henry J. Kaiser Family Foundation, August.

Access to Care: Issues and Challenges

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • September 2009

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

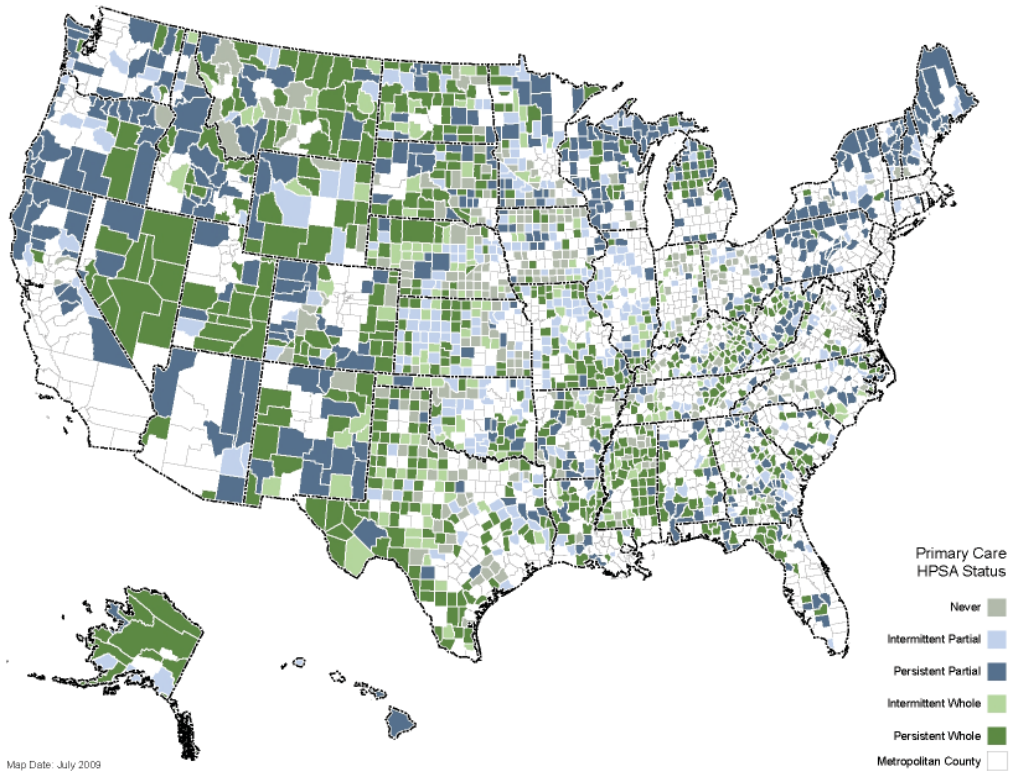
Persistent Primary Care Health Professional Shortage Areas (HPSAs) and Health Care Access in Rural America

Mark P. Doescher, Meredith A. Fordyce, Susan M. Skillman, J. Elizabeth Jackson, Roger A. Rosenblatt

Issues

Congress passed the Health Professions Educational Assistance Act of 1976 to address the crisis in primary care supply in rural and inner-city locations of the United States. This legislation created primary care Health Professional Service Areas (HPSAs), which help states and communities increase their primary care supply through eligibility for loan repayment, technical assistance, increased reimbursement through Medicare, Federally Qualified Health Center (FQHC), and Rural Health Clinic designation. This study examines the degree to which persistence of primary care HPSA designation in rural counties is associated with lower population socioeconomic status and deficiencies in access to health care services.

Figure 1. Rural Counties by Primary Care HPSA Category



Methods

Rural (non-metropolitan) counties were categorized into five groups characterizing the persistence of primary care HPSA status separately for partial- and full-county primary care HPSAs using a methodology that expands upon work conducted by researchers at the University of North Carolina-Chapel Hill.[1] The categories are: "never HPSAs," "intermittent partial-county HPSAs," "persistent partial-county HPSAs," "intermittent whole-county HPSAs," and "persistent whole-county HPSAs." Persistent primary care HPSAs consisted of locations that were partial- or whole-county primary care HPSAs for at least six of seven years in the interval including 1996, 1997, 1998, 2000, 2001, 2002, and 2004 (data on HPSA status for 1999 and 2003 were unavailable). Intermittent primary care HPSAs consisted of locations that were whole- or partial-county HPSAs for at least one of these years, but less than six years. Given that primary care HPSA status sometimes fluctuated between partial- and whole-county status over the study interval, partial-county primary care HPSAs were defined as counties in which whole-county HPSA status never occurred during the study interval, while whole-county primary care HPSAs were defined as counties that were full-county HPSAs at least once during the study period. (We separately examined counties in which the HPSA designation was consistent for the full county

University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

and counties in which the designation fluctuated between partial- and full-county status. These groups were combined because their sociodemographic profiles were nearly identical. Additional information regarding the classification scheme is available upon request.)

American Medical Association and American Osteopathic Association Masterfile data from 2005 and 2004 Census estimates were used to identify the per capita supply of clinically active, non-resident, non-federally employed physicians aged 74 or younger whose primary care specialty was family medicine/general practice, general internal medicine, general pediatrics, or obstetrics-gynecology. Data from the 2004-5 Behavioral Risk Factor Surveillance System (BRFSS), an annual survey of U.S. adults, were used to examine several measures of health care access.[2] Rural county characteristics were identified using 2004 Economic Research Service (ERS) policy type county typology codes.[3] County HPSA status came from HRSA Area Resource Files.

Evidence

Distribution of Counties by Primary Care HPSA Category

- Of 2,051 U.S. rural counties in 2005, 1,743 (85%) were primary care HPSAs at least once during the study interval. There were 308 (15.0% of all rural counties) "never" HPSAs, 370 (18.0%) "intermittent partial-county" HPSAs, 490 (23.9%) "persistent partial-county" HPSAs, 195 (9.5%) "intermittent whole-county" HPSAs, and 688 (33.5%) "persistent whole-county" HPSAs. Figure 1 presents a map of U.S. rural counties by these five primary care HPSA categories.

Socioeconomic Profile of Counties by Primary Care HPSA Category

- A socioeconomic gradient occurred in which socioeconomic status was lowest in "persistent whole-county" primary care HPSAs, while counties never receiving a HPSA designation had the highest socioeconomic status (Table 1).
- A racial/ethnic gradient was also observed in which minorities made up the highest percentage of the population in "persistent whole-county" HPSAs, while the fewest minority group members lived in counties never receiving HPSA designation (Table 1).
- Population density was lowest in counties receiving a whole-county HPSA designation (Table 1).

Access to Health Care by Primary Care HPSA Category

- Primary care physician supply was lowest in rural counties receiving a whole-county HPSA designation (Table 2).
- The percentage of U.S. rural adults with a regular primary care provider was lowest in whole-county primary care HPSAs (Figure 2).
- Rural adults in whole-county primary care HPSAs were least likely to have health insurance coverage (Figure 3).
- Rural adults in whole-county primary care HPSAs were the most likely to forego needed health care because of its cost (Figure 4).

Conclusions

This five-level classification of rural counties measuring partial- vs. whole-county persistence of primary care HPSA designation stratifies rural populations by socioeconomic status, race/ethnicity, primary care supply, health insurance uptake and access to needed health care services. Those U.S. rural counties that were

Table 1. Characteristics of Rural Counties by Primary Care HPSA Category

County Characteristics	Never	Intermittent Partial County	Persistent Partial County	Intermittent Whole County	Persistent Whole County
	n = 308 (15.0%)	n = 370 (18.0%)	n = 490 (23.9%)	n = 195 (9.5%)	n = 688 (33.5%)
Persistent poverty county	5.8%	7.6%	12.7%	20.0%	28.1%
Low education county	12.0%	15.1%	18.0%	28.2%	38.2%
Low employment county	4.5%	9.2%	18.0%	21.0%	31.8%
Proportion non-white race/ethnicity	11.4%	13.8%	14.4%	16.4%	21.6%
Proportion aged 65 and older	15.1%	15.1%	15.1%	15.8%	14.7%
Population loss county	26.6%	25.7%	17.3%	40.5%	27.6%
Population density	65.1/sq.mi.	67.0/sq.mi.	47.3/sq.mi.	24.7/sq.mi.	24.2/sq.mi.

Table 2. Rural Primary Care HPSA Category and Primary Care Physician Supply

County Characteristics	Never	Intermittent Partial County	Persistent Partial County	Intermittent Whole County	Persistent Whole County
	n = 308 (15.0%)	n = 370 (18.0%)	n = 490 (23.9%)	n = 195 (9.5%)	n = 688 (33.5%)
Primary care physicians per 100,000 population	72.3	68.1	69.6	45.1	39.3

Figure 2. Percentage of Adults with a Regular Primary Care Provider by Rural Primary Care HPSA Category

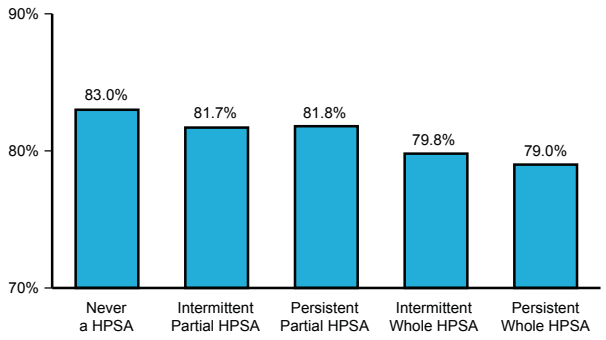
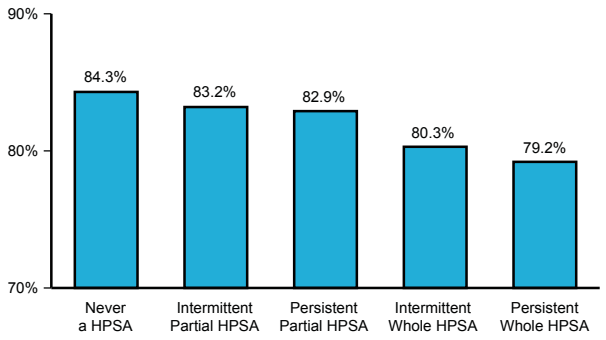
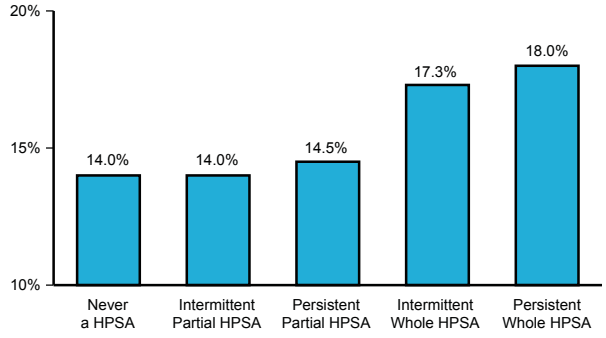


Figure 3. Percentage of Adults with Any Health Insurance Coverage by Rural Primary Care HPSA Category



persistently designated as whole-county HPSAs had much lower SES, and adults residing in these counties reported substantial financial obstacles to obtaining needed health care services. Rural counties that were persistently designated as whole-county HPSAs also faced severe provider shortages, and adults residing in these locations were less likely to have a regular primary care provider. The ability to identify persistence and extent of HPSA designation may be a valuable tool in selecting counties with higher levels of need.

Figure 4. Percentage of Adults Who Did Not Receive Needed Health Care Because of Cost in the Preceding 12 Months by Rural Primary Care HPSA Category



Policy Implications

Resources are needed to increase and sustain the number of primary care providers and reduce financial barriers to care in all rural primary care HPSAs. However, our findings suggest that some HPSAs may need relatively more resources than others. For example, policies that give "persistent whole-county" primary care HPSAs the highest priority on eligibility for loan repayment programs, technical assistance, increased reimbursement through Medicare, FQHC designation and Rural Health Clinic designation would help promote primary care workforce development in the locations having the greatest need for health care services.

References

1. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Persistent Health Professional Shortage Areas (PHPSAs), North Carolina, 2005. Available at: http://www.shepscenter.unc.edu/rural/maps/PHPSA05_NC.pdf. Accessed June 30, 2009.
2. Marks JS, Hogelin GC, Gentry EM, Jones JT, Gaines KL, Forman MR, Trowbridge FL. The behavioral risk factor surveys: I. State-specific prevalence estimates of behavioral risk factors. *Am J Prev Med.* 1985;1(6):1-8.
3. Economic Research Service, U.S. Department of Agriculture. Briefing room: measuring rurality: 2004 county typology codes. Available at: http://www.ers.usda.gov/Briefing/Rurality/Typology/. Accessed May 3, 2007.

This research was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service (grant #U1CRH03712).

Rural residents lag in preventive services use; Lag increases with service complexity

South Carolina
Rural Health
Research Center
At the Heart of Health Policy

220 Stoneridge Dr., Ste 204· Columbia, SC 29210· p: 803-251-6317· F: 803-251-6399·http://rhr.sph.sc.edu

South Carolina
Rural Health Research Center
Policy Brief No. 1 June, 2009

Rural residents lag in preventive services use; Lag increases with service complexity

Rural populations, particularly rural minorities, experience marked disparities in health and health care access, as documented in the 2001 *Urban and Rural Health Chartbook* report,[i] and more recently in *Health Disparities, A Rural-Urban Chartbook*, funded by the Office of Rural Health Policy. Rural minority residents, in particular, are more likely to report poor health status, obesity and limitations in activity than urban residents[ii]. While preventive services cannot eliminate all health disparities, they can contribute to more equal treatment for specific conditions.

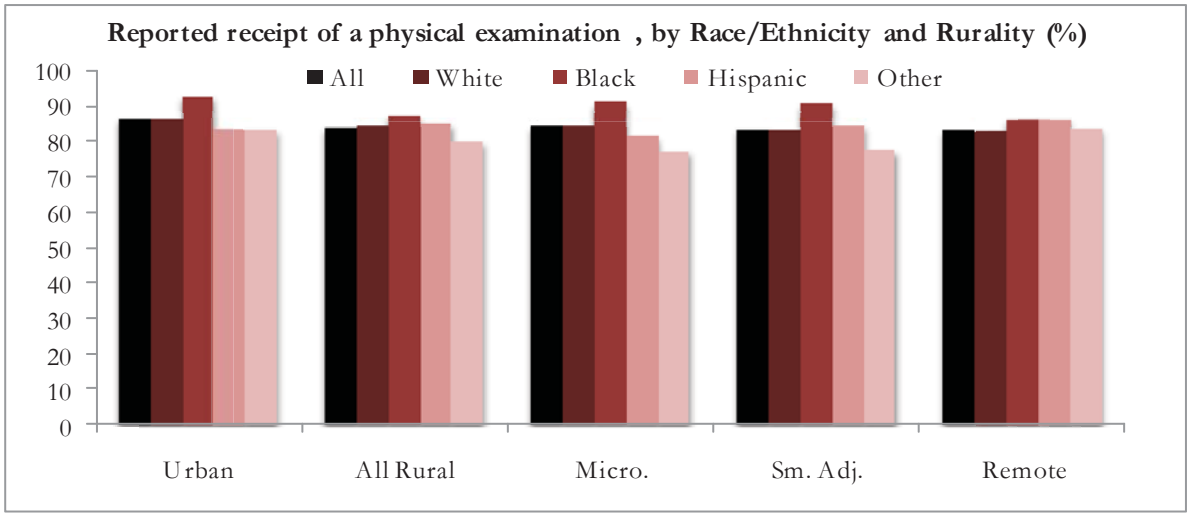
Taken as a whole, rural adults are less likely to receive age-appropriate preventive services than are urban adults. Differences associated with residence are frequently magnified for rural minority adults who are less likely to receive preventive services than urban minorities.[iii,iv] While access to primary care can mitigate these differences,[v] rural adults in general and rural minority adults in particular are more likely to lack health insurance[vi], which can reduce access to primary care[vii]. Further, rural areas are marked by a lack of resources, such as fewer health care professionals[viii,ix].

This research brief describes the receipt of preventive services among rural adults and explores the factors that are related to disparities in utilization.

Routine Physical Exam, Age 40 and Older

Since many preventive services are delivered as part of a physical exam, we examined routine physical exam rates among adults age 40 and over. Rural residents (83.8%) were less likely to have an exam by a physician than urban residents (86.0%). Among rural adults without insurance coverage, markedly fewer (59.3%) reported such an exam.

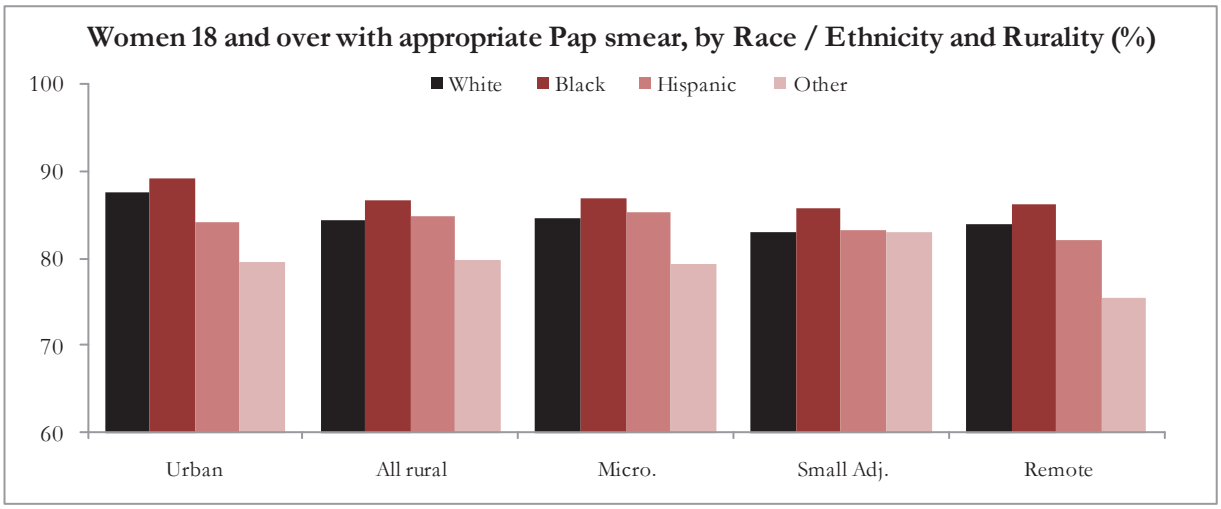
Rural African Americans were much more likely to have an exam than other rural residents, while Hispanics and other races had the lowest rates. Among rural residents, screening rates ranged from 86.8% among rural African Americans to 79.8% among "other" race/ethnicity. Among urban residents, current exam rates range from 92.3% among African Americans to 79.5% among "other" race/ethnicity.



Among those without insurance, rural African Americans (77.9%) and Hispanics (64.0%) were more likely than whites (57.2%) to have had an exam. Exam rates among uninsured rural minorities increased as the level of rurality increased.

Cervical Cancer Screening

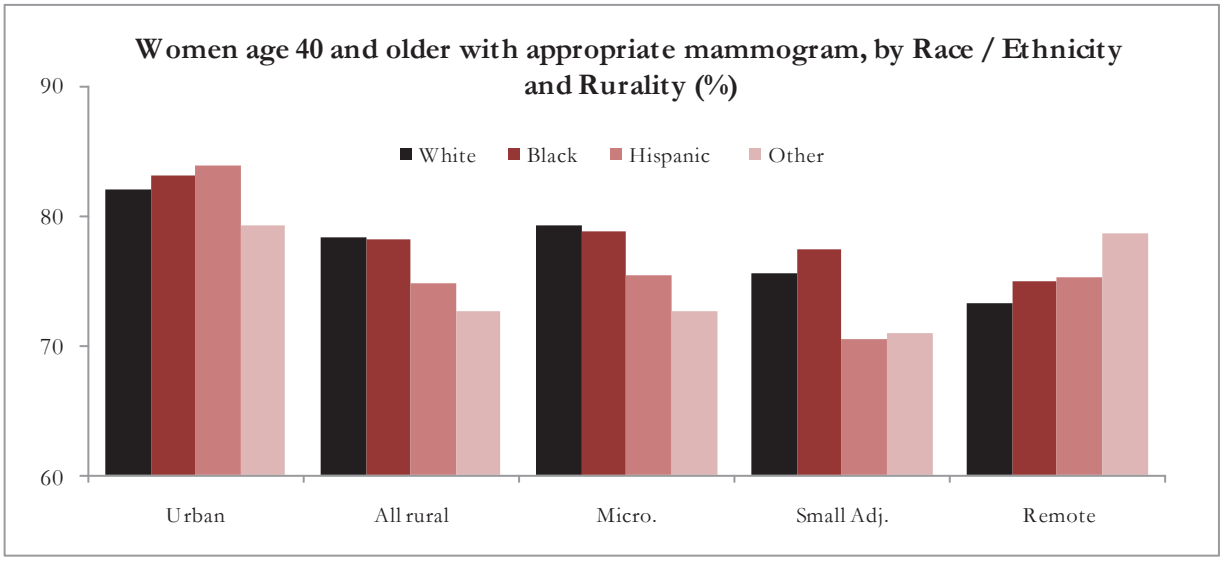
Rural women were less likely to report having received age appropriate Pap tests for cervical cancer (84.3%) than were urban women (86.6%). The highest rate for cervical cancer screening (Pap test within 3 years among women aged 18 – 75) was found among urban, African American women (89.2%). Among rural women, screening rates range from 86.8% among African American women to 79.8% among "other" women. While the screening rate among uninsured rural women was low (73.3%), the rate among insured rural women (87.8%) approached the HealthyPeople 2010 goal of 90% receiving screening. Overall, rural African American and Hispanic women were more likely to obtain a Pap test than rural white or urban women. The rates were not substantially different by race/ethnicity across levels of rurality. Among rural women without insurance, African Americans (81.3%) and Hispanics (76.8%) were more likely than whites (71.3%) to have had a Pap test. All rates, however, were well below the HealthyPeople 2010 goal of 90%.



Breast Cancer Screening

Rural women were less likely to be in compliance with mammography recommendations (77.9%) than were urban women (82.2%). The proportion of women screened for breast cancer decreased as the level of rurality increased, possibly because of reduced technical capacity in smaller counties. In general, rural minority women were less likely to obtain a mammogram than were rural white or urban women. Paralleling findings among all women, screening rates for minority women decreased as the level of rurality increased, with Hispanic women in small adjacent rural counties having the lowest rates overall (70.1%). All of the screening rates were, however, above the HealthyPeople 2010 goal of 70%.

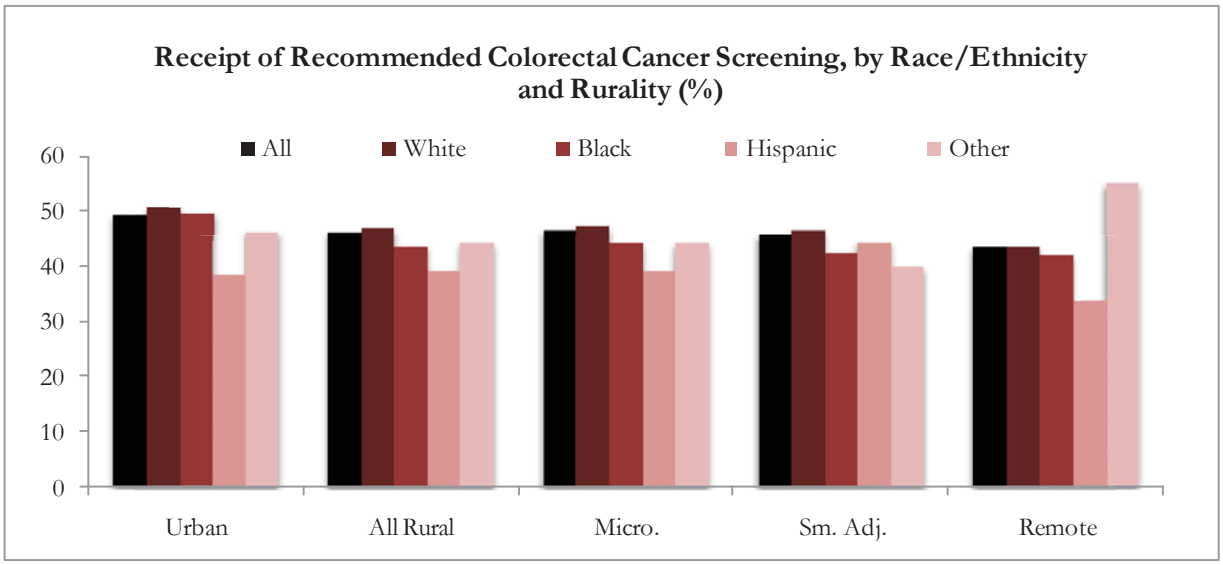
Mammography rates were much lower for uninsured rural women, with only 51.2% receiving the service. Among rural women without insurance, African Americans (60.5%) and Hispanics (55.7%) were more likely than whites (48.9%) to have received a mammogram.



Colorectal Cancer Screening

Colorectal cancer screening rates (receipt of a sigmoidoscopy or colonoscopy, lifetime or within 10 years, adults 50 and older) were markedly lower than those for cervical or breast cancer, and fall short of the Healthy People 2010 goal of 50% screened. Rural residents (46.3%) were less likely to be screened than urban residents (49.2%). Rates were much lower for uninsured rural residents, with only 28.0% obtaining a screening. Even among insured rural residents (48.4%), screening rates did not meet recommendations.

Rural minority adults were less likely to report colorectal cancer screening than were rural whites or urban residents. Rural Hispanics had the lowest overall rate, with less than two in five being



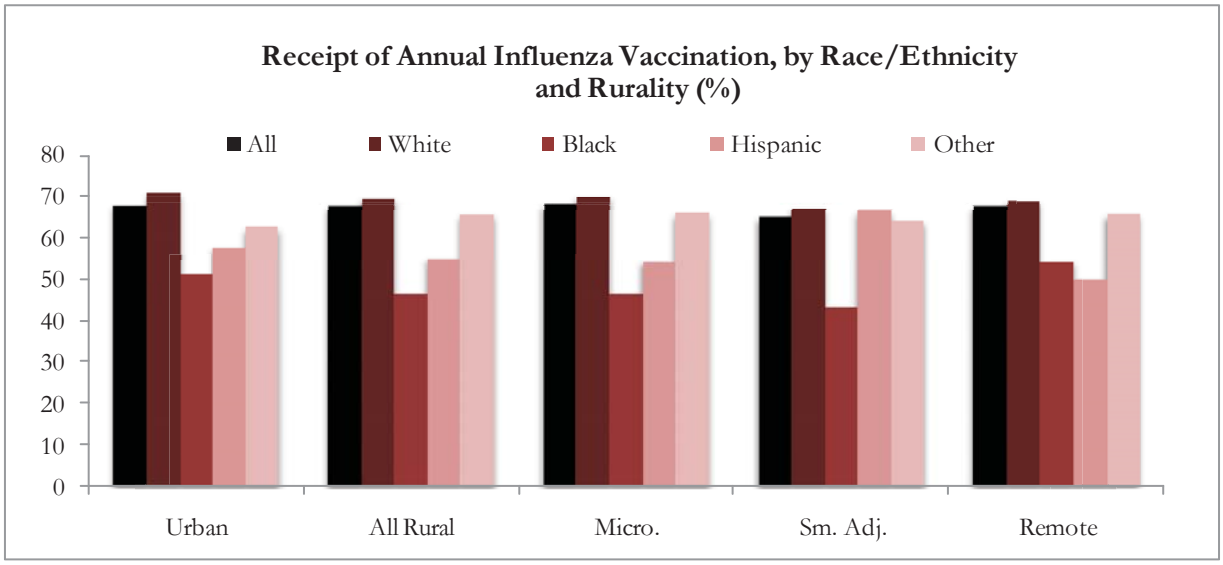
screened. The highest rate for colorectal cancer screening is found among white urban residents (50.8%). Among urban adults, Hispanics report the lowest screening level, 38.4%. Within each race/ethnicity group, service receipt did not differ substantially across levels of rurality. Among uninsured rural residents, African American adults (33.3%) were more likely than white residents

(28.3%) to report colorectal cancer screening; only 16.9% of uninsured rural Hispanic adults obtained a screening. Among rural adults, colorectal cancer screening rates range from 46.8% among white adults to 39.2% among Hispanic adults.

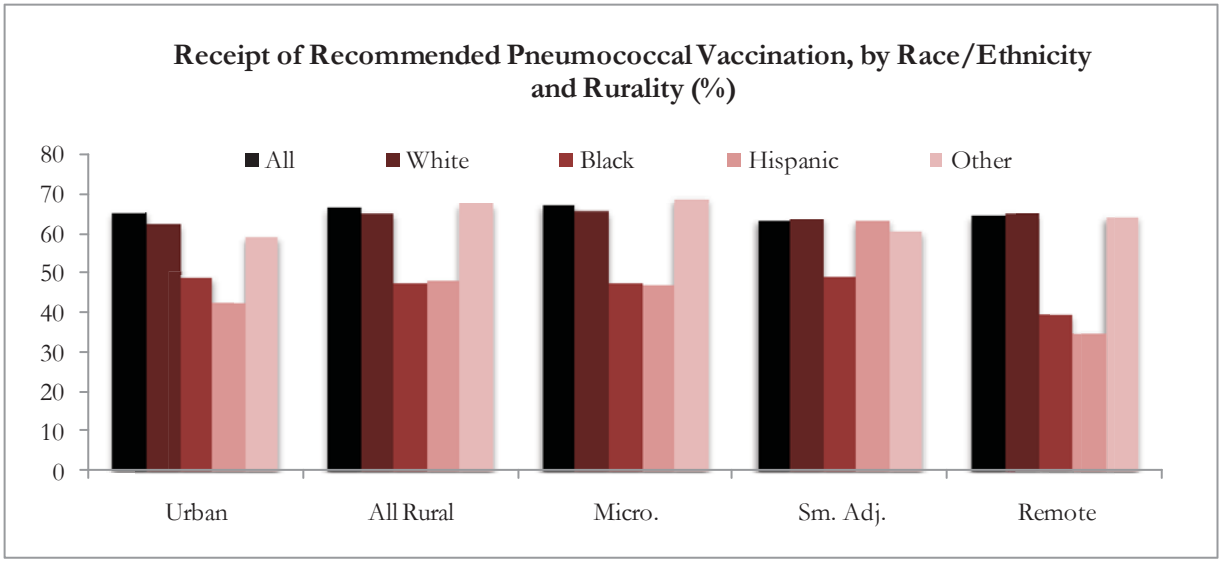
Adult Immunizations

Pneumonia vaccination

One lifetime pneumococcal vaccination is recommended for persons age 65 and older. Rural residents were more likely to report a pneumococcal vaccination than urban residents (66.8% vs. 65.4%). Residents in small adjacent and remote rural counties had lower pneumococcal vaccination rates than in micropolitan rural areas. Both rural and urban vaccination rates fell well below the HealthyPeople 2010 goal of 90% coverage.



Annual flu vaccinations are recommended for adults beginning at age 65. Rural and urban residents 65 and older had similar influenza vaccination rates (67.2% vs. 67.7%). Persons living in small adjacent rural counties, however, had lower rates (64.9%) than residents in the other types of counties. Rural minorities were markedly less likely to have received an influenza vaccination, with African Americans having the lowest overall rate (47.4%). Rural African Americans and Hispanics were also less likely to report a pneumococcal vaccine than rural whites or urban residents; those of 'other' race had the highest rates.



Age was an important predictor of vaccinations, both influenza and pneumonia. While minorities continued to lag behind whites in both rural and urban areas, the immunization rates were higher in the 75 to 84 year old and the 85 years or older groups. For example, Hispanics over the age of 85 living in Small Adjacent rural counties had an influenza vaccination rate of 81.8%, compared to 50.2% among those 65 to 74 years old.

Conclusions

Rural residents were less likely to receive preventive services such as mammography, Pap tests, and colorectal cancer screenings. Lack of health insurance exacerbated these disparities, greatly reducing the rates of service delivery. The first step towards reducing rural/urban disparities may lie in increasing insurance coverage across these populations. Notably, rural/urban disparities did not exist for either influenza or pneumococcal vaccinations. It would appear that the nearly universal insurance coverage afforded by Medicare is effective in producing equitable opportunity for obtaining vaccinations. It does not, however, explain the tendency for compliance to increase with age.

Methods

- Information on receipt of preventive services was derived from the 2006 Behavioral Risk Factor Surveillance System survey, a telephone survey coordinated by the Centers for Disease Control and Prevention.
- Rurality was defined at the county level using Urban Influence Codes; Urban (codes 1 & 2) included large metropolitan areas of one million residents or more as well as small metropolitan areas of less than one million residents. Micropolitan Rural (codes 3, 5, & 8) included areas with an urban cluster of 10,000 or more residents, and included areas that were both adjacent and not adjacent to Urban areas. Small Adjacent Rural (codes 4, 6, & 7) included areas with at least 2,500 residents that did not have a dense population and were adjacent to more densely populated areas. Remote Rural (codes 9, 10, 11, & 12) included areas not adjacent to larger areas and have towns of 2,500 residents or less.
- Race and ethnicity categories for analysis are white, African American, Hispanic, and 'other'; however, BRFSS allows individual respondents to self-identify the race or multiple races most applicable to their heritage.
- The BRFSS data used for this analysis did not include counties of 10,000 or fewer residents, reducing the number of observations for rural residents.
- Our primary source for preventive services guidelines in the US is the Guide to Clinical Preventive Services, updated annually by the US Preventive Services Task Force (USPSTF), coordinated by the Agency for Healthcare Research and Quality, US Department of Health and Human Services.
- More details are provided in Health Disparities, a Rural Urban Chartbook, available at http://rhr.sph.sc.edu.

References

[i] Eberhardt MS, Ingram DD, Makuc DM, et al. Urban and Rural Health Chartbook. Health, United States, 2001. Hyattsville, Maryland: National Center for Health Statistics. 2001.
[ii] Patterson P, Moore C, Probst J, Shinogle J. Obesity and physical inactivity in rural America. Journal of Rural Health. 2004;20(2):151-9.
[iii] Corbie-Smith G, Flagg E, Doyle J, O'Brien M. Influence of usual source of care on differences by race/ethnicity in receipt of preventive services. Journal of General Internal Medicine. 2002;17(6):458-64.
[iv] Thompson B, Coronado G, Solomon C, McClerran D, Neuhouser M, Feng Z. Cancer prevention behaviors and socioeconomic status among Hispanics and non-Hispanic whites in a rural population in the United States. Cancer Causes Control. 2002;13:719-28.
v Corbie-Smith G, Flagg E, Doyle J, O'Brien M. Influence of usual source of care on differences by race/ethnicity in receipt of preventive services. Journal of General Internal Medicine. 2002;17(6):458-64., and Williams RL, Flocke SA, Stange KS. Race and preventive services delivery among black patients and white patients seen in primary care. Medical Care. 2001;39(11):1260-7.
vi Mueller K, Patil K, Ullrich F. Lengthening spells of uninsurance and their consequences. . Journal of Rural Health. 1997;13:29-37.
[vii] Ayanian JZ, Weissman JS, Schneider EC, Ginsburg JA, Zaslavsky AM. Unmet needs of uninsured adults in the United States. JAMA. 2000;284(16):2061-9.
[viii] Health Resources Services Administration: http://bhpr.hrsa.gov/shortage/
[ix] Probst J, Moore C, Glover S, Samuels M. Person and Place: The compounding effect of race/ethnicity and rurality on health. American Journal of Public Health. 2004;94:1695-703.

Muskie School of Public Service

Maine Rural Health Research Center

Research & Policy Brief

June 2009

Rural-Urban Differences in Health Care Access Vary Across Measures

Introduction

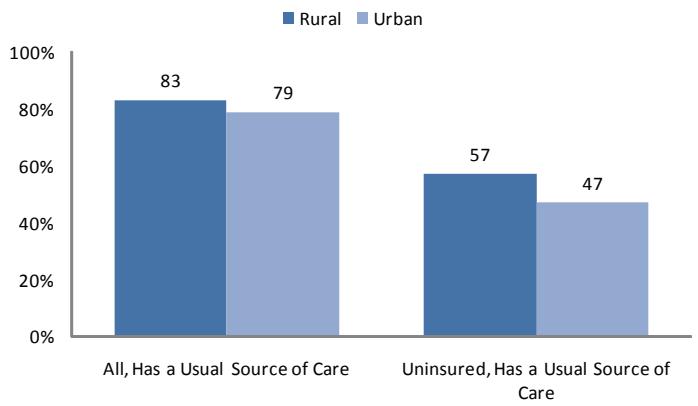
Rural uninsured rates are higher than urban,[1] and the uninsured often have difficulty obtaining needed care.[2] Difficulties recruiting and retaining health care providers have resulted in longstanding disparities in rural and urban physician supply.[3] This combination of factors suggests that rural residents may face greater barriers to accessing health care than their urban counterparts. Analyses of data from the 2006 Medical Expenditure Panel Survey (MEPS) for non-elderly rural and urban residents partly supports this premise, yet rural residents fare better on some measures of access.

Rural Residents More Likely to Have Usual Source of Care

Having a regular provider (usual source of care, or USC) from whom one receives health care services is a common measure of health care access. Research indicates that having a USC is one of the many factors that increases the use of preventative care services and decreases risk of having unmet health needs.[5]

As shown in Figure 1, 83% of rural residents under age 65 have a USC and the proportion is higher than in urban areas (79%). The USC is most commonly a physician's office although a small percentage of both rural and urban individuals identify hospitals and/or emergency rooms as their USC (data not shown). In keeping with prior research,[6] the uninsured are much less likely to have a USC yet uninsured rural residents are significantly more likely to report having a USC than urban (57% versus 47%).

Figure 1: Usual Source of Care
Under Age 65



USC differences by residence significant at p<.05.

Fast Facts

- Rural residents are more likely than urban residents to have a usual source of health care (USC), particularly the rural versus urban uninsured.
- Rural residents are somewhat more likely to report long travel times to reach their USC and have greater difficulty getting care after hours.
- While rural access to care is not uniformly worse than urban access, the burden on rural providers in delivering this care may be high, especially since rural physicians are twice as likely to work in solo practices.

Authors

Erika Ziller, MS
Jennifer Lenardson, MHS

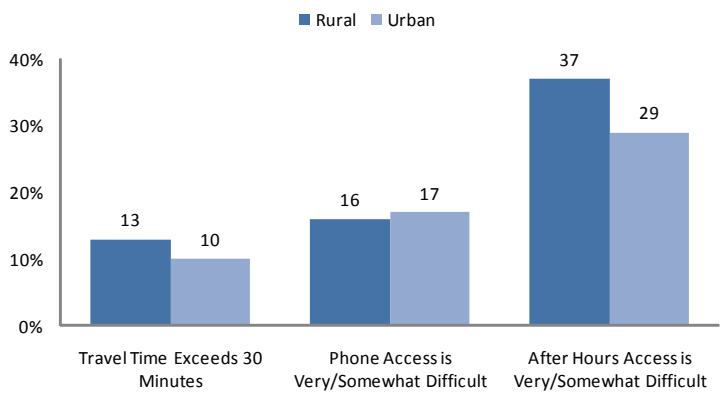
For more information about this study, contact Erika Ziller at (207) 780-4615 or eziller@usm.maine.edu

Rural Residents More Likely to Have Difficulty Accessing Usual Source of Care

Evidence suggests that the travel time to a health care provider can adversely affect a person's ability to access that provider, especially among those needing specialty care.[7] As Figure 2 demonstrates, rural residents are somewhat more likely to travel more than 30 minutes to see their USC (13% of all non-elderly residents compared to 10%).

There is no rural-urban difference in the percentage of individuals that report difficulty reaching their USC provider by telephone (about 16%). However, rural residents are much more likely to have trouble reaching their USC provider outside of normal office hours (37% versus 29% urban). This is likely related to the fact that rural physicians are twice as likely to work in solo practice as their urban counterparts (29% versus 15%),[8] which makes providing 24-hour coverage challenging.

Figure 2: Access Barriers to Usual Source of Care
Under Age 65

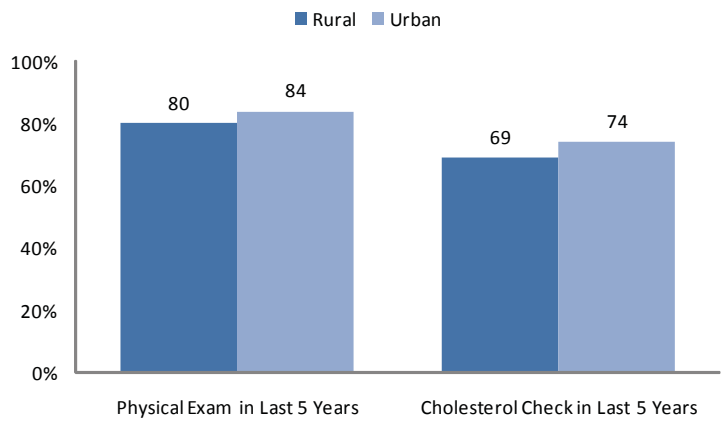


Access differences by residence significant for travel time and after hours at p<.05.

Some Preventive Care Services are Less Commonly Used by Rural Residents

Use of preventive care services is one indicator of access to health care and is a component used in Healthcare Effectiveness Data & Information Set (HEDIS) measures of access.[9] Despite being more likely to have a USC, rural adults are somewhat less likely to receive certain preventive care services than are urban adults. For example, only 80% of rural adults under age 65 have had a physical exam in the past five years compared to 84% of urban residents (Figure 3). Similarly, only 69% of adults in rural areas reported receiving a cholesterol check within the past five years, versus 74% in urban areas.

Figure 3: Use of Preventive Services
Adults Ages 18-64



Use differences by residence significant at p<.05.

For other preventive care services, rural residents are as likely as their urban counterparts to receive care. In particular, rural women under age 65 report receiving pap smears, breast exams and mammograms with the same periodicity as urban women. It is unclear why rural residents fare more poorly for some types of preventive care and not others.

Policy Implications

Although rural areas have lower physician to population ratios than urban areas,[10] rural residents are more likely to have a usual source of health care (USC). This may be a function of rural residents having more limited health care options and therefore being more likely to have one "usual" provider.

While having a USC is a benefit to rural residents, the burden of providing care may be high for rural providers, especially when they have few options for sharing the financial and logistical costs of treating the un/underinsured. Rural physicians work longer hours and see more patients than urban physicians[11] and to the extent that this contributes to dissatisfaction with their practice, may exacerbate the problems of rural physician recruitment and retention.[12]

The demands on rural physicians, combined with their greater likelihood of being in solo practice, may explain why rural residents have much more difficulty accessing their USC after hours. It also illustrates the importance of having other health care resources, such as Critical Access Hospitals (CAHs) available to provide urgent care or telephone triage after office hours.

Although travel to a USC is somewhat longer for rural residents, the difference was smaller than might be expected. However, it is important to note that we used a single measure of rurality to encompass all rural areas, and this limits our ability to discern differences among rural communities that have very different landscapes and provider availability.[13] Thus, some very remote rural areas may fare worse on this measure (as would some poor inner-city urban areas). Finally, while rural access to health care is not categorically worse than urban access based on current

data, trends in the rural health care workforce suggest that this could change. For example, recent evidence indicates that a greater proportion of rural than urban primary care physicians are nearing retirement age, particularly in more remote rural communities.[14] Combined with the challenges of recruitment and retention in the rural health care workforce, this suggests that rural access to providers will warrant careful monitoring in the future.

References:

1) Lenardson, JD , Ziller, EC, Coburn, AF, and Anderson, N. *Profile of Rural Health Insurance Coverage: A Chartbook.* Portland, ME: University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center; 2009.

2) Ayanian JZ, Weissman JS, Schneider EC, Ginsburg JA, Zaslavsky AM. Unmet Health Needs of Uninsured Adults in the United States. *JAMA.* 2000;284:2061-2069.

3) General Accounting Office *Physician Workforce: Physician Supply Increased in Metropolitan and Nonmetropolitan Areas but Geographic Disparities Persisted.* Washington, DC: General Accounting Office; 2003.

4) DeVoe JE, Fryer GE, Phillips R, Green L. Receipt of Preventive Care Among Adults: Insurance Status and Usual Source of Care. *American Journal of Public Health.* 2003;93:786-791.

5) Newacheck PW, Hughes DC, Hung Y-Y, Wong S, Stoddard JJ. The Unmet Health Needs of America's Children. *Pediatrics.* 2000;105:989-997.

6) Callahan ST, Cooper WO. Uninsurance and Health Care Access Among Young Adults in the United States. *Pediatrics.* 2005;116:88-95.

7) Chan L, Hart L, and Goodman D. Geographic Access to Health Care for Rural Medicare Beneficiaries. *Journal of Rural Health.* 2006; 22:140-146.

8) Gorman P. Information needs in primary care: a survey of rural and nonrural primary care physicians (Chapter 5). Patel VL, Rogers R, & Haux R *Medinfo 2001: Proceedings of the 10th World Congress on Medical.* 2001:338-349.

9) National Committee for Quality Assurance. *HEDIS 2008: Healthcare Effectiveness Data & Information Set. Vol. 2, Technical Specifications.* Washington, DC: National Committee for Quality Assurance; July 2007.

10) Rosenblatt RA, Hart LG. Physicians and rural America. In: Ricketts T, Ed. *Rural Health in the United States.* New York, NY: Oxford University Press; 1999:38-51.

11) Weeks WB, Wallace AE. Rural-Urban Differences in Primary Care Physicians' Practice Patterns, Characteristics, and Incomes. *Journal of Rural Health.* 2008, Spring; 24:161-170.

12) Berk, M, Feldman, J, Schur C., and Gupta J. *Satisfaction With Practice and Decision to Relocate: an Examination of Rural Physicians.* Bethesda, MD: Walsh Center for Rural Health Analysis; May 2009.

13) Hart GL, Larson, EH, and Lishner, DM Rural definitions for health policy and research. *American Journal of Public Health* 2005;95(7):1149-55.

14) Doescher MP, Fordyce MA, Skillman SM. *The Aging of the Primary Care Physician Workforce: Are Rural Locations Vulnerable?* Policy Brief. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; June 2009.

NC Rural Health Research & Policy Analysis Center

Findings Brief, July 2009

Medicaid & CHIP Participation Among Rural & Urban Children

Jennifer King, BA, Rebecca Slifkin, PhD, Mark Holmes, PhD

Public Health Insurance Programs Are Especially Important For Rural Children

Compared to urban residents, rural families have less access to job-based coverage and may be less able to afford non-group private plans. Medicaid and the Children's Health Insurance Program (CHIP) can help fill this gap. Nearly 40 percent of rural children were enrolled in these programs in 2005, compared to about one-third of urban children.[1] Still, about 1 in 10 children in both rural and urban areas remain uninsured—and many of them are eligible to enroll in Medicaid or CHIP.

KEY FINDINGS

- Medicaid/CHIP participation rates were slightly higher in rural areas in 2006-2007.
- Participation rates were highest in the Midwest and were particularly low in urban areas in the South.
- Participation rates were lower for children who were older than 13 or had family incomes above the federal poverty level.

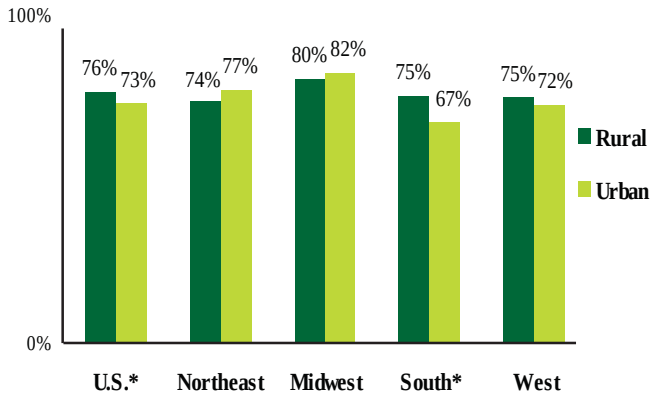
When considering strategies to increase Medicaid and CHIP participation among qualified children, it is important to consider both the rate at which qualified children participate in the programs and the characteristics of children who are qualified but do not enroll. This brief summarizes findings on Medicaid/CHIP participation rates for children. A companion brief describes the characteristics of rural and urban children who are qualified for Medicaid or CHIP but not enrolled.[2]

Rural Children Are Likely to Enroll in Public Insurance When They Are Eligible To Do So

Nationally, about three-quarters of children who qualified for Medicaid/CHIP in 2006-2007 were enrolled. This rate was about 3 percentage points higher in rural areas than in urban areas. Patterns in participation rates varied across the country (figure 1).

Overall participation rates were highest in the Midwest. In the South, participation rates were particularly low in urban areas and were significantly higher in rural areas. In other regions, there was no statistically significant difference in rural and urban areas.

F1. Children's Medicaid/CHIP Participation Rates, 2006-2007



*Rural and urban rates are significantly different.

Participation Rates Vary by Race and Ethnicity, Age, and Family Income

- **Race and ethnicity**: Among children who qualify for Medicaid or CHIP, Asian or Pacific Islander children and Hispanic children had lower-than-average participation rates.

1.Maine Rural Health Research Center. Rural Coverage Gaps Decline Following Public Health Insurance Expansions. February 2009. Available at http://muskie.usm.maine.edu/Publications/rural/pb/Rural-Public-Health-Insurance.pdf.

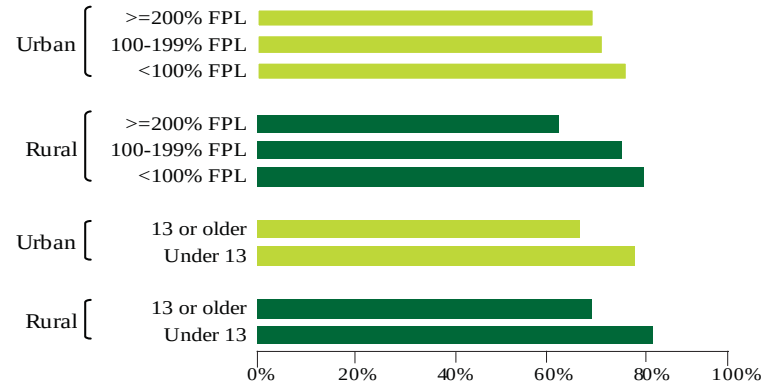
2. NCRHR & PAC. FB #91. Characteristics of Rural & Urban Children Who Qualify for Medicare or CHIP But Are Not Enrolled. July 2009.

North Carolina Rural Health Research & Policy Analysis Center
Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill
E-Mail Address: NCRural@unc.edu, Phone: 919-966-5541

■ **Age:** Overall, the participation rate among children between the ages of 13 and 18 was about 11 percentage points (±1.4) lower than the participation rate for children younger than 13. This trend was present in both rural and urban areas (figure 2).

■ **Income:** Nationwide, participation rates for children decrease as income increases. Rates for those with income at or above 100% of the federal poverty level (FPL) were about 5 percentage points (±1.6) lower than participation rates for children with incomes below 100% FPL. This pattern was present in rural and urban areas (figure 2).

F2. Children's Medicaid/CHIP Participation Rates, 2006-2007



Although they make up a small portion of uninsured children who qualify for Medicaid or CHIP, children with incomes at or above 200% FPL had lower participation rates than those with lower incomes. The disparity in participation rates by income was especially large in rural areas; rural children with incomes greater than 200% FPL were about 16 percentage points (±12.4) less likely to be enrolled compared to children with lower incomes.

CONCLUSION

Nationally, rural children who are eligible to enroll in Medicaid or CHIP do so at a slightly higher rate than children in urban areas, a finding that further demonstrates the importance of public health insurance programs for rural children. Nevertheless, in both rural and urban areas, substantial portions of children who qualify for Medicaid or CHIP are not enrolled. Children with lower-than-average participation rates include those in the South and West, in some racial and ethnic groups, older children, and children with incomes above 100% FPL. Strategies to increase Medicaid and CHIP participation should consider the characteristics of groups with relatively low participation rates while also targeting those groups that account for large numbers of the qualified-but-uninsured population (see companion Brief).

METHODS

Data are from the 2008 and 2007 Current Population Survey (CPS) Annual Social and Economic Supplement. Incomes included that which would count toward determining Medicaid/CHIP eligibility. Income levels were compared to state Medicaid/CHIP eligibility thresholds to determine whether children qualified for the programs. “Participation rates” are the share of Medicaid/CHIP qualified children who were enrolled in either program at some point in the year, excluding children who were covered by another type of insurance in the year.

CAVEATS

CPS measures of health insurance coverage, especially Medicaid coverage, are imperfect. Further, we did not have access to the full range of information that states consider when determining Medicaid/CHIP eligibility. Because of these limitations, the results presented here should be considered approximations that represent trends in participation rates, rather than definitive estimates of the share of qualified children enrolled in Medicaid/CHIP.

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

This study was funded through cooperative agreement #2-U1CRH03714-05-00 with the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services

NC Rural Health Research & Policy Analysis Center

Findings Brief, July 2009

Characteristics of Rural & Urban Children Who Qualify For Medicaid or CHIP But Are Not Enrolled

Jennifer King, BA, Rebecca Slifkin, PhD, Mark Holmes, PhD

Substantial Portions of Children Who Are Eligible to Enroll in Medicaid or CHIP Are Uninsured

About three-quarters of children who qualify for Medicaid or CHIP are enrolled, with slightly higher rates in rural areas than in urban areas.[1] This leaves one in four qualified children without insurance coverage.

KEY FINDINGS

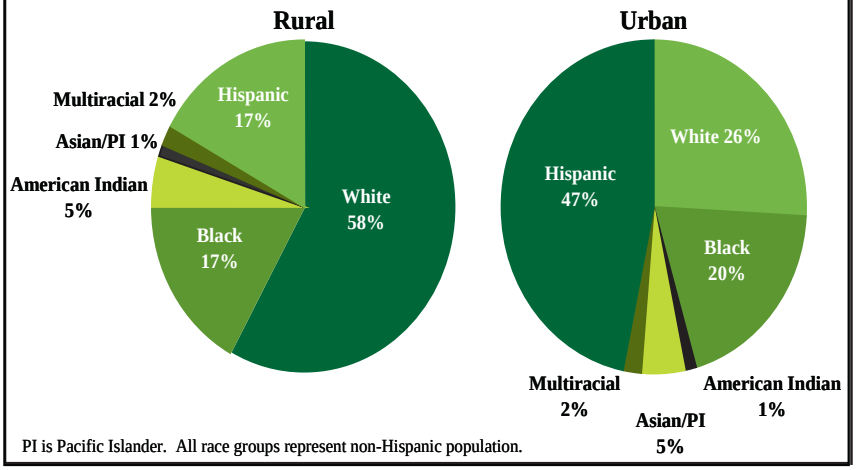
- There are rural-urban and regional differences in the race and ethnicity of qualified-but-uninsured children.
- About 6 in 10 qualified-but-uninsured children have family incomes below the federal poverty level.
- Children of all ages are qualified for Medicaid or CHIP but not enrolled.

In order for efforts to expand health coverage to all children to be successful, it is important to consider both the rate at which qualified children participate in Medicaid and CHIP and the characteristics of children who are qualified for the programs but uninsured. A companion brief summarizes findings on Medicaid/CHIP participation rates for rural and urban children.[1] This brief describes the characteristics of rural and urban children who qualify for Medicaid or CHIP but are not enrolled, or children who are "qualified-but-uninsured".

There Are Rural-Urban Differences in the Race And Ethnicity of Qualified-But-Uninsured Children

In both rural and urban areas, the qualified-but-uninsured population is diverse. Over half of qualified-but-uninsured children in rural areas are non-Hispanic white, compared to about one-quarter in urban areas. Hispanic children accounted for a sizeable portion of qualified-but-uninsured children in both rural and urban areas, but made up a much larger share of this population in urban areas.

F1. Race/Ethnicity of Qualified-but-Uninsured Children, 2006-2007



PI is Pacific Islander. All race groups represent non-Hispanic population.

About 1 in 5 qualified-but-uninsured children were African American. American Indian and Alaskan Native children accounted for about 5% of the qualified-but-uninsured population in rural areas, while Asian and Pacific Islander children made up about 5% of this group in urban areas

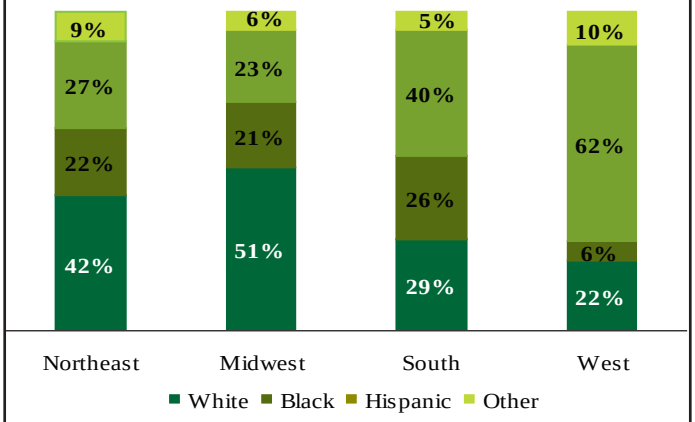
1. NCRHR & PAC. FB#90. Medicaid & CHIP Participation Among Rural & Urban Children. July 2009.

North Carolina Rural Health Research & Policy Analysis Center
Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill
E-Mail Address: NCRural@unc.edu, Phone: 919-966-5541

The Race And Ethnicity of Qualified-But-Uninsured Children Varies Substantially By Region

To a large extent, these differences reflect regional differences in overall population demographics. For example, over half of qualified-but-uninsured children in the West were Hispanic, compared to 40% in the South and about one-quarter in the Northeast and Midwest. There was also substantial regional variation in the share of qualified-but-uninsured children who were non-Hispanic white and African American.

F2. Race/Ethnicity of Qualified-but-Uninsured Children 2006-2007



White, Black, and Other race categories represent non-Hispanic populations.

Children of All Ages Are Represented in the Qualified-But-Uninsured Population

Of children who qualified for Medicaid or CHIP but were not enrolled, about 31% were age 5 or younger, 33% were between 6 and 12 years old, and 37% were 13 to 18 years old. This pattern was similar in rural and urban areas.

In Both Rural And Urban Areas, About 6 in 10 Qualified-But-Uninsured Children Have Family Incomes Below 100% of the Federal Poverty Level

Another one-third of qualified-but-uninsured children had incomes between 100-199% of the federal poverty level (FPL). Although qualified children with incomes at or above 200% FPL participated in Medicaid/CHIP at lower rates than children with lower incomes (see companion brief), they make up a small portion of qualified-but-uninsured children in both rural and urban areas.

Income of Qualified-But-Uninsured Children 2006-2007

	Rural	Urban
Under 100% FPL	**63%** ±3.7	**60%** ±1.8
100% t o 199% FPL	**33%** ±3.6	**35%** ±1.8
200% FPL or more	**4%** ±1.9	**5%** ±0.7

± figures are 95% confidence interval boundaries.

CONCLUSION

In both rural and urban areas, a substantial portion of children who qualify for Medicaid or CHIP are not enrolled in the programs and have no other source of insurance coverage. Efforts to increase program participation among this uninsured population will need to target a diverse group of children whose characteristics vary across rural and urban areas and by region. These differences in race and ethnicity, age, and income have implications for the types of outreach and enrollment strategies policymakers and program officials may wish to design and the venues in which they may be most effective.

METHODS

See the companion brief for an overview of methods for this analysis.

CAVEATS

Measures of health insurance coverage in the Current Population Survey (the data source for this analysis) are imperfect. Further, we did not have access to the full range of information that states consider when determining Medicaid/CHIP eligibility, including legal residence status for immigrant children. The results presented here should be considered approximations that represent trends in charateristics of qualified-but-uninsured children, rather than definitive estimates of this population's composition.

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

This study was funded through cooperative agreement #2-U1CRH03714-05-00 with the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services

Rural Counties in the Economic Downturn

RUPRI Center for Rural Health Policy Analysis
University of Nebraska Medical Center, College of Public Health
Keith J. Mueller, PhD, Director
www.unmc.edu/ruprihealth
(402) 559-5260 • kmueller@unmc.edu
Brief No. 2009-9

A Case Study of Developments in Rural Health in Difficult Economic Times: Leake County, Mississippi

Authors: Kelly Shaw-Sutherland, MPA, Anh Nguyen, MSPH, Keith Mueller, PhD

INTRODUCTION

The U.S. health care crisis is especially strong in rural communities. The experience of Leake County, a rural Mississippi county, embodies these problems.

Leake County faces challenges common to most rural areas:

- An aging population with relatively high rates of poverty,
- A vulnerable local economy,
- Substantial health care access barriers,
- Difficult financial circumstances for the local hospital and other health providers,
- High out-of-pocket health care costs for residents, and
- Less access to health information technology and other infrastructure that is important for health care quality.

These persistent health care challenges for rural communities have been amplified by the current economic downturn.

PORTRAIT OF LEAKE COUNTY

As of 2008, Leake County's total population was estimated to be 22,844 people,[1] with Carthage, the largest city and county seat, representing approximately 20% of the county's population (4,808 people[2]).

Located in the center of the state of Mississippi, Leake County has an atmosphere of country-style living, with larger metropolitan cities only a short distance with three highways crossing the county.[3]

As in most rural places, in Leake County the population is older and poorer than the U.S. population overall.

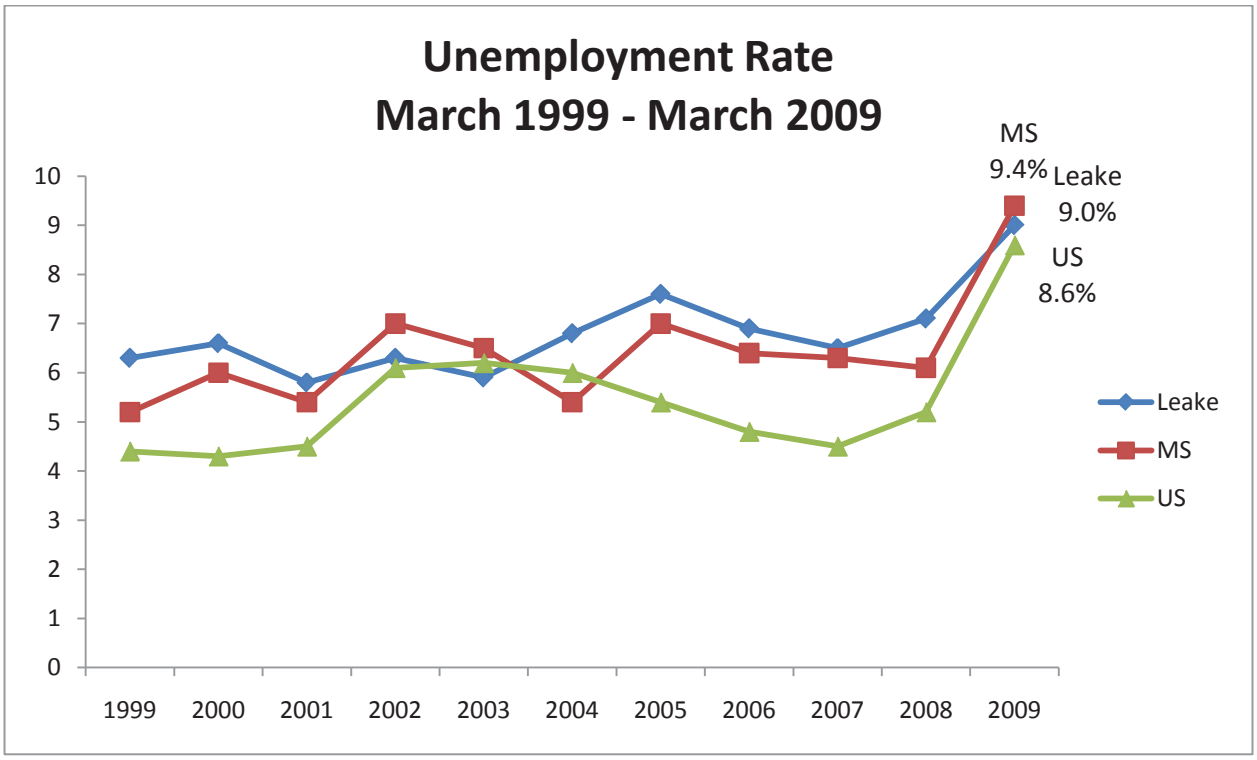
- In general, elderly Americans have greater and more complex health care needs. Nearly one in seven Leake County residents are 65 years or older (13.9%), compared to 12.5% for the state and 12.0% of the nation as a whole.[4]
- High rates of poverty are associated with health care access problems for low-income populations, and those problems often create greater financial difficulties for local health care providers. In 2007, 20.5% of all Leake County residents were living in poverty compared to 13.0% nationally. Among children 18 years and under in 2007, 31.3% were living in poverty in contrast to 18.0% nationally.[5]

[1] U.S. Census Bureau, 2008. State and County Quickfacts. (June 2009).
[2] U.S. Census Bureau, 2007. Population Estimates. (May 2009).
[3] Leake County Development Association. (May 2009) http://www.leakeida.com/1RP.html.
[4] U.S. Census Bureau, 2007. State and County Quickfacts. (June 2009).
[5] U.S. Census Bureau, 2007. Small Area Income and Poverty Estimates (June 2009).

Similar to other rural communities, Leake County has been hit hard by the current economic downturn but is still recovering from past economic declines.
In the early 1980s, a large portion of the local economy was built on the garment industry (i.e., plant manufacturing operations, sewing centers, etc.), which employed about 2,000 people. Over the course of 10 to 15 years, the 13 to 16 manufacturers scattered throughout the county left due to outsourcing. As a result of this gradual economic downturn, the local economy has been slow to recover.

Unable to recruit and sustain local business development, businesses left the county; Leake County and other surrounding areas employing local residents have suffered.[6] By March 2009, the unemployment rate in Leake County had reached 9.0%, a 3 percentage point increase from March 2008. This current rate is comparable to the state and national levels of unemployment, with Mississippi at 9.4% unemployment and the United States at 8.6% unemployment.[7]

These economic challenges have amplified the health care crisis in Leake County and rural areas throughout the country.



Source: U.S. Bureau of Labor Statistics.

[6] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[7] U.S. Bureau of Labor Statistics (June 2009).

DIMINISHING ACCESS TO HEALTH CARE

Historically, Leake County has had a high uninsurance rate.
In 2005, 21.4% of Leake County residents were uninsured compared to 19.5%[8] statewide and 15.9% of all United States residents.[9]

Nationally, every one percentage increase in the unemployment rate is associated with an increase in the uninsured of approximately one million people.[10] However, states with larger increases in the unemployment rate have larger percentage increases in the number of uninsured.[11]

Rural residents have less access to job-based health insurance, which partly explains their higher rates of uninsurance.[12]
Currently, the largest employer in Leake County is Tyson Foods, Inc., which employs between 2,000 and 3,000 people; the other leading employers in the county are two corrections facilities (one public and one private), the Leake County School district with five K-12 buildings, and the Leake County Memorial Hospital.[13]

Therefore, many Leake County residents rely on public insurance.
As of 2009, approximately 18.4%[14] of Leake County residents were enrolled in Medicare, 19.2%[15] were enrolled in CHIP, and 22.2%[16] were enrolled in Medicaid, compared to national rates of 14.9%,[17] 8.9%,[18] and 20%,[19] respectively.

Like most rural areas, Leake County has a low supply of health care providers.
With only 10 physicians in the county, its physician-to-population ratios for both primary care and specialist physicians are lower than ratios for the United States overall—0.4 physicians per 3,000

---

[8] U.S. Census Bureau, 2007. Small Area Income and Poverty Estimates (accessed June 2009) http://www.census.gov/did/www/saipe/data/statecounty/index.html.
[9] U.S. Census Bureau, 2005. (June 2009) http://www.census.gov/hhes/www/hlthins/hlthin05/hlth05asc.html.
[10] Holahan J, Garrett AB. (2009). *Rising unemployment, Medicaid and the uninsured* (Report #7850). Kaiser Commission on Medicaid and the Uninsured. Available at http://www.kff.org/uninsured/upload/7850.pdf.
[11] Holmes M, Ricketts T, King J. (2009). Updating uninsured estimates for current economic conditions: state specific estimates. Chapel Hill, NC: Cecil G Sheps Center for Health Services Research. Available at http://www.shepscenter.unc.edu/new/FindingsBrief_UninsuredUnemployment_Mar2009.pdf.
[12] Holve E, Brodie M, Levitt L. (2003). Small business executives and health insurance: findings from a national survey of very small firms. *Managed Care Interface,* 16(9), 19-24. Accessed June 25, 2009.
[13] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[14] Mississippi State Department of Health, 2009. http://www.msdh.state.ms.us/msdhsite/_static/19,1947,242,211.html.
[15] Mississippi State Department of Health, 2009. http://www.msdh.state.ms.us/msdhsite/_static/19,1947,242,211.html.
[16] Mississippi State Department of Health, Division of Medicaid, July 2009.
[17] 2008 Centers for Medicare and Medicaid Services. http://www.cms.hhs.gov/MedicareEnRpts/Downloads/HISMI08.pdf.
[18] 2008 Centers for Medicare and Medicaid Services. http://www.cms.hhs.gov/NationalCHIPPolicy/downloads/CHIPEverEnrolledYearGraph.pdf.
[19] Kaiser Family Foundation, 2006. http://www.statehealthfacts.org/profileind.jsp?ind=199&cat=4&rgn=1.

population for primary care[20] as compared to the federal shortage area designation of 1 physician per 3,000 population.[21]

Rural county leaders are particularly concerned about the lack of access to specialty care and dental services. There are about three dentists for every 10,000 residents in Leake County,[22] well below national rates (six per 10,000 population).[23] Furthermore, there are no physicians in Leake County with a primary specialty related to mental health.[24] Certain preventive care services, such as mammography procedures, are not available in Leake County.[25]

Recruitment of new health care providers is difficult in rural communities.
Recruitment is difficult for a variety of reasons, including the financial challenges of practicing in a rural environment, as illustrated by the circumstances of the local hospital, Leake County Memorial Hospital. According to one administrator, "Leake County has been underserved for a number of years."[26] Two of the five physicians on staff at the local hospital are over the age of 55, leading to increased concern regarding the stability of the current services being provided by the hospital to the county and other surrounding areas. Overall, the county has limited services—no OB/GYN or cardiology services among other specialty services. With two of the long-standing physicians getting ready for retirement, county leaders are working to encourage recruitment efforts to keep those private practices viable.[27]

FINANCIAL DIFFICULTIES OF LOCAL PROVIDERS

Leake County Memorial Hospital faces the same financial problems as many small, rural hospitals.
Leake County Memorial, the fourth largest employer in the county, is a 25-bed critical access hospital[28] with approximately 210 employees, of which 140 are full-time.[29]

A high proportion of the hospital's patients are unable to cover the full cost of care received. As the economic downturn persists, the hospital has been experiencing a significant increase in the number of patients coming into the ER for care, and 12% to 14% (approximately double the previous year) are self-pay as a result of job loss. However, approximately one-quarter of those self-pay patients' medical expenses are expected to go unpaid and therefore increase the hospital's overall annual write-offs.[30]

With an aging population, a high proportion of Leake County Memorial Hospital's patients are insured by Medicare; there are also a significant number of Medicaid patients. Increasing insurance deductibles

---

[20] Area Resource File, 2006. US Census Bureau, 2005.
[21] Federally Designated HPSA, U.S. Code, Title 42, Chapter 6A, Subchapter II, subpart ii, § 254e.
[22] Area Resource File, 2006.
[23] New York Center for Health Workforce Studies (October 2006).
[24] Area Resource File, 2006.
[25] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[26] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[27] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[28] Leake county Development Association. (May 2009) http://www.leakeida.com/1RP.html.
[29] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[30] Leake county Development Association. (May 2009) http://www.leakeida.com/1RP.html.

and premiums have led other patients to struggle to pay their medical expenses. They are often unable to cover the full cost of their care because either they lack insurance coverage or they face high out-of-pocket costs under the insurance they do have.[31]

In many larger hospitals, Medicaid and charity care patients are subsidized by higher reimbursement for persons with private insurance. However, the percentage of patients with generous private insurance is typically low for most small rural hospitals.

ESCALATING HEALTH CARE COSTS

Rural residents pay more of their medical costs out of their own pockets than do urban residents. More than 10% of rural individuals with private coverage spend more than one-tenth of their family income on medical cost, compared to about 6% of their urban counterparts.[10]

In Leake County, the number of patients who cannot afford to pay for their health care has dramatically increased over the last year.
The amount of charity care provided at Leake County Memorial Hospital has risen 47%, from $17,166 in 2007 to $25,185 in 2008. The hospital's total annual write-offs have experienced similar increases, with about $1.25 million in write-offs in 2008, which is expected to top out at approximately $2 million in write-offs by the end of 2009, representing a total expected percent change of 60%.[32]

These cost issues are fueled by increases in both uninsurance and under-insurance. As local businesses look to curb health care costs, Leake County health care providers have noticed a large jump in the number of patients with very high deductible health plans. Many of these patients cannot afford to meet their deductibles, forcing them to either forgo care or rely on charity care from local providers.

Leake County has had a cooperative safety net charity program for the last 10 years to help curb some of the financial difficulties that many of the county's residents have had or currently are facing. The independently established program, open two days per month until recently, provides critical medical care, medication via donated samples, and some dental care from a variety of providers who volunteer their time. Leake County Memorial Hospital provides the location and some supplies for this free clinic. Currently the free clinic is open only one day per month.[33]

In rural communities like Leake County, many residents cannot afford their prescribed medications. Rural privately insured individuals are less likely to have prescription drug coverage than those in urban areas. Many of those who cannot afford their medications have been getting them through the free clinic, but there are other formal programs. Local pharmacists have also been known to work with the individual and pharmaceutical companies to assist with the rising cost burden of medications.[34]

---

[31] Leake county Development Association. (May 2009) http://www.leakeida.com/1RP.html.
[32] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[33] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[34] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).

Many Leake County residents are going without recommended care.
In part because the county lacks a variety of services, many people are going without colon and breast exams and are not seeking preventive care measures. Local physicians have explained the decrease in recommended care as a result of the economic downturn, insurance plans that do not cover these types of procedures or care, and the inability of patients to afford the co-pay for the services and procedures that are covered.[35]

PERSISTENT GAPS IN QUALITY
Many of the quality problems in the U.S. health care system are present in both rural and urban areas. But rural health care providers face some special challenges in their efforts to provide high quality care.

Rural providers have less access to information technology.

- Adoption of electronic health records by hospitals in rural areas has been slower than in metropolitan areas.
- In Leake County, two private practice physicians utilize electronic medical records, but they do not presently communicate with the hospital.[36]
- Leake County Memorial Hospital is infrastructure-ready to implement health information technology in their local hospital system, but the biggest barrier is the cost. The hospital is expecting to have health information technology up and running by 2011.[37]

Many health care problems in rural areas can be traced to problems with access to primary or specialist care.

- Common admissions to Leake County Memorial Hospital are for pneumonia, respiratory infections, congestive heart failure, and failure to thrive (i.e., dehydration and malnourishment). Leak County also had higher rates of mortality due to major cardiovascular and heart diseases. Approximately one-third of the hospital's patients come from nursing homes; their health has taken a downturn, and they present with a fever, urinary tract infection, etc.[38]
- Leake County also has higher rates of mortality due to accidents, of which the major killer was motor vehicle accidents (105.1 deaths per 100,000 population), than does Mississippi overall (54.8 deaths per 100,000 population) and higher rates of heart disease (382 per 100,000 versus 316.7 per 100,000).[39]

This report illustrates that the cost of maintaining the health care system status quo remains a significant burden to local providers in rural areas like Leake County, Mississippi. Significant changes in health care finance, delivery, and organization are needed to ensure continuous access to essential services.

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration,
U.S. Department of Health and Human Services (Grant #1U1C RH03718)

[35] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[36] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[37] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[38] Personal communication, Robert Faulkner, Hospital Administrator, Leake County Memorial Hospital. (June 24, 2009).
[39] http://www.msdh.state.ms.us/county/Leake.pdf.

RUPRI Center for Rural Health Policy Analysis
University of Nebraska Medical Center, College of Public Health
Keith J. Mueller, PhD, Director
www.unmc.edu/ruprihealth
(402) 559-5260 • kmueller@unmc.edu
Brief No. 2009-10

A Case Study of Developments in Rural Health in Difficult Economic Times: Walthall County, Mississippi

Authors: Anh Nguyen, MSPH, Kelly Shaw-Sutherland, MPA, Keith Mueller, PhD

INTRODUCTION

The U.S. health care crisis is especially strong in rural communities. The experience of Walthall County, a small county located in southwestern Mississippi, exemplifies these problems.

Walthall County face challenges common to most rural areas:

- An aging population with relatively high rates of poverty,
- A vulnerable local economy,
- Substantial health care access barriers,
- Difficult financial circumstances for the local hospital and other health providers,
- High out-of-pocket health care costs for residents, and
- Less access to health information technology and other infrastructure that is important for health care quality.

These persistent health care challenges for rural communities have been amplified by the current economic downturn.

PORTRAIT OF WALTHALL COUNTY

Walthall County is home to about 15,416 people.[1] Tylertown is the county seat, with a population of about 1,923.[2]

Walthall County is referred to as "The Cream Pitcher of Mississippi." It is the primary dairy county in the state, leading in milk production and the number of dairies.[3]

As in most rural places, in Walthall County the population is older and poorer than the U.S. population overall.

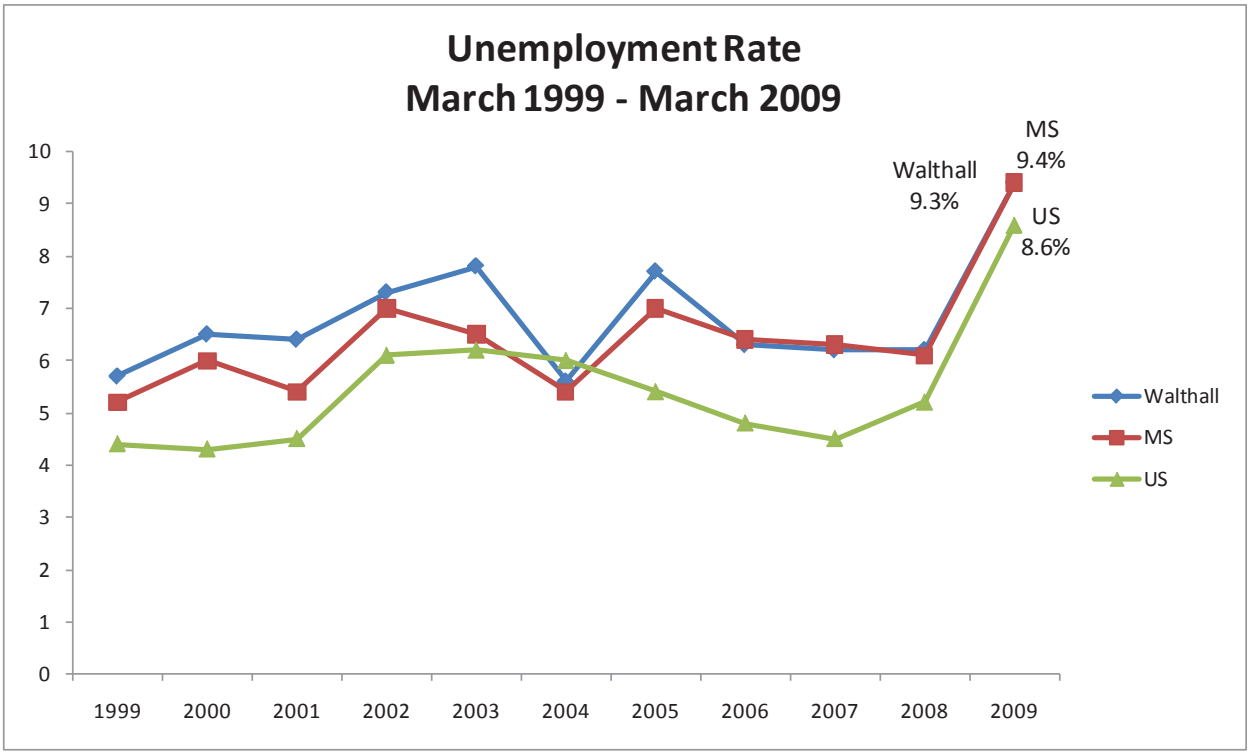
- Nearly one in seven Walthall County residents are 65 years or older (14%), compared to 12% of the nation as a whole.[4] In general, elderly Americans have greater and more complex health care needs.
- In 2000, 28% of all Walthall County residents and 43% of the county's children were living in poverty. During this time period, U.S. poverty rates were 12% overall and 17% among children.[5] This high poverty rate is associated with health care access problems for the low-income population and financial difficulties for local health care providers.

[1] 2008 U.S. Census Bureau (May 15, 2009).
[2] 2007 U.S. Census Bureau (June 25, 2009).
[3] http://www.walthallcountychamber.org/index.html.
[4] 2000 U.S. Census Bureau (May 14, 2009).
[5] 2000 U.S. Census Bureau (May 14, 2009).

Walthall County has been hit hard by the current economic downturn.
One of Walthall County's substantial employers, a wire manufacturing company that employed approximately 500 employees, relocated outside of the county a few years ago. Today, a small business that employs about 40 people has taken its place. Moreover, recent reductions in housing markets have impacted the timber industry, a major source of employment and economic activity in Walthall County.[6]

By March 2009, the unemployment rate in Walthall County had climbed to 9.3%, increasing significantly from the previous year (6% in March 2008). This rate is comparable to the unemployment rate of Mississippi (9.4% in March 2009) and slightly higher than the United States overall (8.6% in March 2009).[7]

These economic challenges have amplified the health care crisis in Walthall County and rural areas throughout the country.



Source: U.S. Bureau of Labor Statistics.

[6] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[7] U.S. Bureau of Labor Statistics (May 14, 2009) http://www.google.com/publicdata?ds=usunemployment&met=unemployment_rate&idim=county:CN281470&q=walthall+county+unemployment+rates+trend.

DIMINISHING ACCESS TO HEALTH CARE

Historically, Walthall County has had a high uninsurance rate.
In 2000, 23% of Walthall County residents were uninsured compared to 14% of all U.S. residents.[8]

Rural residents have less access to job-based health insurance
The majority of employers in Walthall County are small businesses that typically employ from 25 to 40 people. Small businesses like these are less likely to offer health insurance as a benefit to employees, often because they cannot afford to do so.[9]

Many Walthall County residents rely on public health insurance.
Of the residents of Walthall County, 14.7% are enrolled in Medicare,[10] 17.5% are enrolled in CHIP,[11] and 26.7% are enrolled in Medicaid[12] compared to national rates of 14.9%,[13] 8.9%,[14] and 20%,[15] respectively.

Like most rural areas, Walthall County has a low supply of health care providers.
With only 10 physicians in the county,[16] the county's physician-to-population ratio is lower than the ratios for Mississippi and the United States overall—65 physicians per 100,000 population[17] as compared to 214 physicians per 100,000 population for the United States overall.[18]

Rural county leaders are particularly concerned about the lack of access to specialty care and dental services. There are about two dentists for every 10,000 residents in Walthall County,[19] well below the national rate (six dentists per 10,000 population).[20] Furthermore, there are no physicians in Walthall County with a primary specialty related to mental health.[21] Certain preventive care services, such as mammography procedures, are not available in Walthall County.[22]

The aging of the health care workforce may worsen these shortages in Walthall County in the near future. One-half of the physicians in the county are over the age of 55 years, including one physician

---

[8] 2000 U.S. Census Bureau (May 15, 2009) http://www.census.gov/cgi-bin/hhes/sahie/sahie.cgi.
[9] Holve E, Brodie M, Levitt L. (2003). Small business executives and health insurance: findings from a national survey of very small firms. *Managed Care Interface,* 16(9), 19-24. Accessed June 25, 2009.
[10] Mississippi State Department of Health http://www.msdh.state.ms.us/msdhsite/_static/19,1947,242,211.html.
[11] Mississippi State Department of Health http://www.msdh.state.ms.us/msdhsite/_static/19,1947,242,211.html.
[12] Mississippi Division of Medicaid, July 2009.
[13] 2008 Centers for Medicare and Medicaid Services http://www.cms.hhs.gov/MedicareEnRpts/Downloads/HISMI08.pdf.
[14] 2008 Centers for Medicare and Medicaid Services http://www.cms.hhs.gov/NationalCHIPPolicy/downloads/CHIPEverEnrolledYearGraph.pdf.
[15] 2006 Kaiser Family Foundation http://www.statehealthfacts.org/profileind.jsp?ind=199&cat=4&rgn=1.
[16] 2006 Area Resource File.
[17] 2006 Area Resource File. 2005 US Census Bureau.
[18] New York Center for Health Workforce Studies (October 2006).
[19] 2006 Area Resource File.
[20] New York Center for Health Workforce Studies (October 2006).
[21] 2006 Area Resource File.
[22] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).

who is over the age of 70 years and who has current health problems. Additionally, one-half of the county's hospital employees are over the age of 50 years.[23]

FINANCIAL DIFFICULTIES OF LOCAL PROVIDERS

Walthall County General Hospital faces the same financial problems as many small, rural hospitals. Walthall County General Hospital, a critical access hospital located in Tylertown, has served the residents of Walthall since 1970. Walthall County General Hospital currently employs 145 employees, with 134 full-time equivalents.[24]

Like many rural hospitals, Walthall County General is very vulnerable to changes in physician supply. With only six physicians, and one-half of them over the age of 55 years, hospital authorities are concerned about the shortage and the difficulty in recruiting young physicians to the community. Additionally, clinic scheduling is disrupted and hospital admission is affected whenever a physician goes on vacation.[25]

Further, a high proportion of Walthall County General's patients are insured by Medicare or Medicaid. Eighty-five percent of the patients rely on either Medicare or Medicaid; 70% use Medicare specifically. The hospital essentially earns very little profit from treating these patients as they are reimbursed for allowable costs plus 1%.[26]

Many other patients at Walthall County General Hospital are unable to cover the full cost of their care, either because they lack insurance coverage or because they face high out-of-pocket costs under the insurance they do have. Twenty-eight percent of Walthall County General Hospital's emergency room patients cannot afford to pay for their full cost of care.[27]

In many larger hospitals, Medicaid and charity care patients are subsidized by higher reimbursement for persons with private insurance. However, the percentage of patients with generous private insurance is typically low for most small rural hospitals.

ESCALATING HEALTH CARE COSTS

Rural residents pay more of their medical costs out of their own pockets than do urban residents. Further, more than 10% of rural individuals with private coverage spend more than one-tenth of their family income on medical cost, compared to about 6% of their urban counterparts.[28]

---

[23] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[24] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[25] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[26] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[27] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[28] Ziller EC, Coburn AF, Anderson NJ, Loux SL. Uninsured rural families. (2008). *Journal of Rural Health,* 24(1), 1-11. Accessed May 18, 2009.

In Walthall County, the number of patients who are unable to pay for their health care has increased.
In the past few years, the amount of charity care provided at Walthall County has steadily increased; however, hospital authorities have noticed a sharp 8% increase in the past year. Currently, the hospital performs $1.4 million in charity care annually.[29]

These cost issues are fueled by increases in both uninsurance and under-insurance. As local businesses look to curb health care costs, Walthall health providers have noticed a large jump in the number of patients with very high deductible health plans. Many of these patients cannot afford to meet their deductibles, forcing them to either forgo care or rely on charity care from local providers.

Many residents cannot afford their prescribed medications.
Rural privately insured individuals are less likely to have prescription drug coverage than those in urban areas.[30] Recently, it has been noted that a significant number of Walthall County residents have been postponing prescription fills or only filling their prescriptions partially.[31] Unfortunately, there is no prescription drug assistance program in the county.

PERSISTENT GAPS IN QUALITY
Many of the quality problems in the U.S. health care system are present in both rural and urban areas. But rural health care providers face some special challenges in their efforts to provide high quality care.

Rural providers have less access to information technology.

- Adoption of electronic health records by hospitals in rural areas has been slower than in metropolitan areas.
- In Walthall, no medical practices have electronic medical records.[32]
- Walthall County General Hospital would like to invest in health information technology. Unfortunately, there is simply no funding available.[33]

Reasons for hospitalization and mortality in rural can be related to lack of primary care and disease management, and to characteristics of the rural environment

- In Walthall County, chronic conditions, including diabetes, heart disease, chronic obstructive pulmonary disease, and pneumonia, are the top reasons for hospitalization.[34] Walthall County has higher rates of mortality due to major cardiovascular and heart diseases than Mississippi as a whole.[35]

---

[29] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[30] Ziller EC, Coburn AF, and Yousefian AE. (2006). Out-of-pocket health spending and the rural underinsured. *Health Affairs,* 25(6), 1688-1699. Accessed May 26, 2009.
[31] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[32] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[33] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[34] Personal Communication, Jimmy Graves, Hospital Administrator, Walthall County General Hospital (June 23, 2009).
[35] Mississippi State Department of Health http://www.msdh.state.ms.us/msdhsite/_static/resources/3010.pdf.

- Walthall County also has higher rates of mortality due to unintentional motor vehicle injuries (32.6 deaths per 100,000 population) than Mississippi (30.6 deaths per 100,000 population).[36]

CONCLUSION

This report illustrates that the cost of maintaining the health care system status quo remains a significant burden to local providers in rural areas like Walthall County, Mississippi. Significant changes in health care finance, delivery, and organization are needed to ensure continuous access to essential services.

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration,
U.S. Department of Health and Human Services (Grant #1U1C RH03718)

[36] Mississippi State Department of Health http://www.msdh.state.ms.us/msdhsite/_static/resources/3010.pdf.

RUPRI Center for Rural Health Policy Analysis
University of Nebraska Medical Center, College of Public Health
Keith J. Mueller, PhD, Director
www.unmc.edu/ruprihealth
(402) 559-5260 • kmueller@unmc.edu
Brief No. 2009-11

A Case Study of Developments in Rural Health in Difficult Economic Times: Nemaha County, Nebraska

Authors: Anh Nguyen, MSPH, Kelly Shaw-Sutherland, MPA, Keith Mueller, PhD

INTRODUCTION

The U.S. health care crisis is especially strong in rural communities. The experience of Nemaha County, a small county located in southeastern Nebraska, illustrates the reach of these problems into counties that are somewhat stable during times of economic turbulence.

Nemaha County faces some challenges common to most rural areas:

- An aging population with relatively high rates of poverty,
- A vulnerable local economy,
- Substantial health care access barriers,
- Difficult financial circumstances for the local hospital and other health providers,
- High out-of-pocket health care costs for residents, and
- Less access to health information technology and other infrastructure that is important for health care quality.

These persistent health care challenges for rural communities have been amplified by the current economic downturn.

Portrait of Nemaha County

Nemaha County is home to approximately 7,085 people.[1] Auburn is the county seat and the county's largest town, with a population of about 3,267.[2]

Nemaha County was one of the initial eight counties of the Nebraska Territory. Its location along the Missouri River makes it an ideal place for food cultivation.

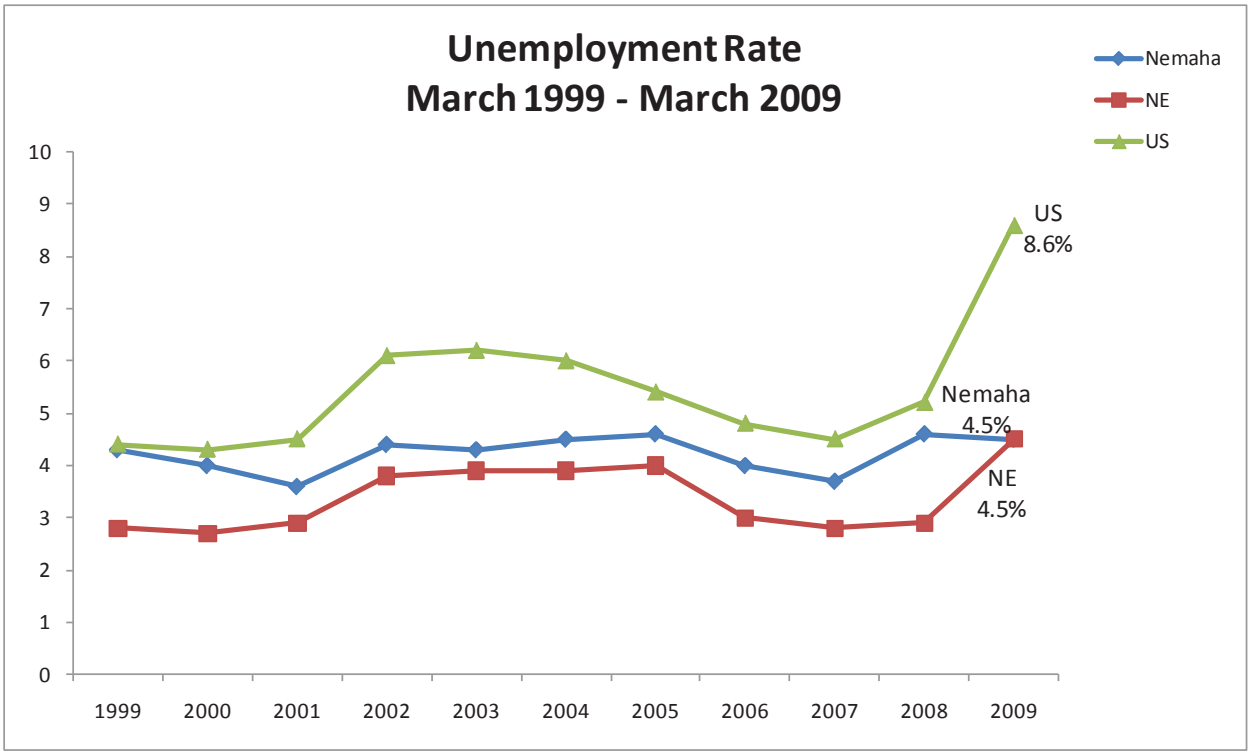
As in most rural places, in Nemaha County the population is older than the U.S. population overall.

- Nearly one in five Nemaha County residents are 65 years or older (19%), compared to 12% of the nation as a whole.[3] In general, elderly Americans have greater and more complex health care needs.
- In 2007, 13% of all Nemaha County residents and 15% of the county's children were living in poverty. During this period, U.S. poverty rates were 13% overall and 18% among children.[3] Poverty is associated with health care access problems for the low-income population and financial difficulties for local health care providers.

[1] 2008 U.S. Census Bureau.
[2] 2007 U.S. Census Bureau.
[3] 2000 U.S. Census Bureau.

Although many counties similar to Nemaha County have been hit hard by the current economic downturn, Nemaha County's economy has been fortunate to have been only slightly impacted.[4] Nemaha County has not seen any major job losses or business closures as a result of the recent economic downturn. However, there has been a slow-down of companies' growth as signaled by layoffs due to lack of work opportunities, including at a cabinet manufacturing and metal plating company.[5]

By March 2009, the unemployment rate in Nemaha County had reached 4.5%, an increase from 3.5% in March 2008. The county's unemployment rate is comparable to the overall state rate of and much lower than the national rate of 8.6%.[6]



Source: U.S. Bureau of Labor Statistics.

DIMINISHING ACCESS TO HEALTH CARE

Historically, Nemaha County has had a high uninsurance rate.
In 2005, 12.2% of Nemaha County residents were uninsured, which was on par with the state percentage.[7] Nationally, the percentage was higher at 15.9%.[8]

Nationally, every one percentage increase in the unemployment rate is associated with an increase in the uninsured of approximately one million people.[9] However, states with larger increases in the unemployment rate have larger percentage increases in the number of uninsured.[10]

---

[4] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[5] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[6] U.S. Bureau of Labor Statistics (June 2009).
[7] 2005 U.S. Census Bureau (June 2009) http://www.census.gov/cgi-bin/hhes/sahie/sahie.cgi.
[8] 2005 U.S. Census Bureau (June 2009) http://www.census.gov/hhes/www/hlthins/hlthin05/hlth05asc.html.

Rural residents have less access to job-based health insurance.
Nemaha County is fortunate to have a few substantial employers, including the Nebraska Public Power District, which employs approximately 750 people. Other employers within the county include Ariens Company, a lawn equipment manufacturing company; Armstrong Cabinets, a cabinet manufacturing company; and Macmillan Metal, a metal plating company.[11]

Many Nemaha County residents rely on public health insurance.
In 2007, 1,425 Nemaha County residents (20.1%) were enrolled in Medicare.[12] In 2008, the average monthly eligible for Medicaid in Nemaha County was 871 persons. Of those 871 Medicaid eligible persons, 489 were children receiving either CHIP or Medicaid.[13]

Like most rural areas, Nemaha County has a low supply of health care providers.
With only five physicians in the county,[14] the county's physician-to-population ratio is lower than ratios for Nebraska and the United States overall: 71 physicians to 100,000[15] population as compared to 199 physicians to 100,000 population for Nebraska[16] and 214 physicians to 100,000 population for the United States overall.[17]

Rural county leaders are particularly concerned about the lack of access to health care services. There are about four dentists for every 10,000 residents in Nemaha County,[18] well below the national rate (six dentists per 10,000 population). Furthermore, there are no physicians in Nemaha County with a primary specialty related to mental health.[19]

FINANCIAL DIFFICULTIES OF LOCAL PROVIDERS

Nemaha County Hospital faces the same financial problems as many small, rural hospitals.
Nemaha County Hospital, a 20-bed critical access hospital located in Auburn, has served the residents of Nemaha since 1963. Nemaha County Hospital currently has 101 employees, with 80 full-time equivalents.[20]

Unlike many rural hospitals, Nemaha County Hospital is not vulnerable to changes in physician supply. They have a stable supply of physicians ranging in age from the mid-30s to late-50s who plan on

---

[9] Holahan J, Garrett AB. (2009). *Rising unemployment, Medicaid and the uninsured* (Report #7850). Kaiser Commission on Medicaid and the Uninsured. Available at http://www.kff.org/uninsured/upload/7850.pdf.
[10] Holmes M, Ricketts T, King J. (2009). Updating uninsured estimates for current economic conditions: state specific estimates. Chapel Hill, NC: Cecil G Sheps Center for Health Services Research. Available at http://www.shepscenter.unc.edu/new/FindingsBrief_UninsuredUnemployment_Mar2009.pdf.
[11] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[12] Centers for Medicare and Medicaid Services. http://www.cms.hhs.gov/MedicareEnrpts/.
[13] Personal Communication, Ann Linneman, Program Analyst/Lead, Nebraska Department of Health and Human Services (June 18, 2009).
[14] Health Professions Tracking Service, UNMC, 2008.
[15] Health Professions Tracking Service, UNMC, 2008.
[16] Health Professions Tracking Service, UNMC, 2007.
[17] New York Center for Health Workforce Studies (October 2006).
[18] 2006 Area Resource File.
[19] 2006 Area Resource File.
[20] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).

remaining long-term.[21] However, Nemaha County Hospital employees are aging, with 31 out of 101 employees over the age of 55 years.[22]

A high proportion of Nemaha County Hospital's patients are insured by Medicare, and a few are insured by Medicaid. Eighty percent of inpatient admissions and 50% of outpatient admissions are of Medicare beneficiaries. Although Nemaha County Hospital receives Medicare reimbursement based on allowable costs plus 1%, they still incur bad debt from those who cannot cover the full cost of care.[23]

Approximately 10% of patients at Nemaha County Hospital are unable to cover the full cost of their care, either because they lack insurance coverage or because they face high out-of-pocket costs under the insurance they do have.[24]

In many larger hospitals, Medicaid and charity care patients are subsidized by higher reimbursement for persons with private insurance. However, the percentage of patients with generous private insurance is typically low for most small rural hospitals, less than 20% of inpatient admissions and 50% of outpatient admissions for Nemaha County Hospital.

ESCALATING HEALTH CARE COSTS

Rural residents pay more of their medical costs out of their own pockets than do urban residents.
More than 10% of rural individuals with private coverage spend more than one-tenth of their family income on medical cost, compared to about 6% of their urban counterparts.[25]

In Nemaha County, the number of patients who cannot afford to pay for their health care has slightly increased in the past six months.
The amount of charity care provided at Nemaha County Hospital has increased slightly in the past year. However, the hospital's charity care program is not widely utilized, mostly because people are deterred by the amount of paperwork. In order to be eligible for this program, the patient would first have to be refused by Medicaid. The program serves about 1% of the patients.[26]

These cost issues were fueled by increases in both uninsurance and under-insurance. As local businesses look to curb health care costs, Nemaha health providers have noticed a moderate increase in the number of patients with very high deductible health plans.[27] Many of these patients cannot afford to meet their deductibles, forcing them to either forgo care or rely on charity care from local providers.

[21] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[22] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[23] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[24] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[25] Ziller EC, Coburn AF, Anderson NJ, Loux SL. Uninsured rural families. (2008). *Journal of Rural Health,* 24(1), 1-11. Accessed May 18, 2009.
[26] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[27] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).

In rural communities, an increasing number of residents cannot afford their prescribed medications. Rural privately insured individuals are less likely to have prescription drug coverage than those in urban areas.[28] In Nemaha County, providers typically work with the drug companies to get prescription drugs for free or at reduced rates for those who cannot afford their prescribed medications. Currently, about 1% of residents cannot afford their prescription drugs; however, the number is expected to increase.[29]

ADDRESSING GAPS IN QUALITY

Many of the quality problems in the U.S. health care system are present in both rural and urban areas. But rural health care providers face some special challenges in their efforts to provide high quality care.

Access to information technology is uneven in rural communities.

- Adoption of electronic health records by hospitals in rural areas has been slower than in metropolitan areas.
- Nemaha County's one medical practice has electronic medical records, and the county hospital has had health information technology since 2003. However, the practice and hospital systems do not communicate with each other.[30]

Reasons for hospitalization and mortality in rural areas can be related to characteristics of the rural environment.

- In Nemaha County, residents are more likely than the average Nebraska resident to be hospitalized because of pneumonia, heart disease, and gastrointestinal issues.[31]
- Nemaha County also has higher rates of mortality due to accidents (124.2 deaths per 100,000 population), chronic lung disease (55.2 per 100,000 population), heart disease (262.2 per 100,000 population), cancer (262.2 per 100,000 population), Alzheimer's disease (138.0 per 100,000 population), pneumonia (82.8 per 100,000 population), nephritis and nephrosis (41.4 per 100,000 population), and suicides (27.6 per 100,000 population) than Nebraska.[32]

CONCLUSION

Experiences in Nemaha County, Nebraska, demonstrate that rural counties with a history of stability in the local economy and in the health care system have been prey to the same economic stress as other counties that are less well off. Given this trend, significant changes in health care finance, delivery, and organization are needed to ensure continuous access to essential services.

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration,
U.S. Department of Health and Human Services (Grant #1U1C RH03718)

[28] Ziller EC, Coburn AF, and Yousefian AE. (2006). Out-of-pocket health spending and the rural underinsured. *Health Affairs,* 25(6), 1688-1699. Accessed May 26, 2009.
[29] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[30] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[31] Personal Communication, Marty Fattig, CEO, Nemaha County Hospital (June 23, 2009).
[32] Nebraska Department of Health and Human Services http://www.hhs.state.ne.us/ced/vs.htm#Deaths.

A Case Study of Rural Health Care in the Economic Downturn

Introduction

Many rural communities have long faced challenges related to health care access and cost. These persistent problems have been exacerbated by the recent economic downturn. This case study describes the current health care environment in Ashe County, a western North Carolina mountain community. The circumstances in Ashe County mirror those in many rural areas across the country:

- An aging population with relatively high rates of poverty;
- A vulnerable local economy;
- Substantial health care access barriers;
- Difficult financial circumstances for the local hospital and other health providers; and
- High out-of-pocket health care costs for residents.

Portrait of Ashe County

Around 26,000 people live in Ashe County. Jefferson, population of about 1,400, is the county seat. The county's commercial hub is nearby West Jefferson, population of about 1,100.[1]

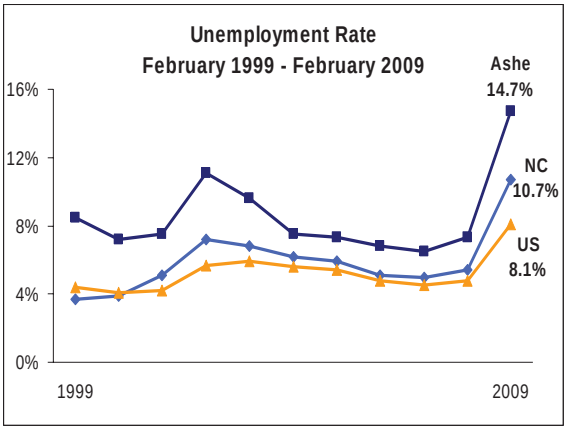
Ashe County has a rich history ranging from the hunting expeditions of Daniel Boone in the 1770s to the establishment of furniture manufacturing and textile industries in the first half of the 20th century.[2] The mountain landscape and local crafters and artisans continue to draw visitors today.

The Ashe County community, like many rural areas, is older and poorer than the U.S. overall.

- Nearly 1 in 5 Ashe County residents are 65 years or older (19%), compared to 13% of the nation as a whole.[3]
- Between 2005 and 2007, 18% of all Ashe County residents and 28% of the county's children were living in poverty. During this time period, U.S. poverty rates were 13% overall and 18% among children.[4]

These characteristics result in greater and more complex health care needs, access problems for the low-income population and financial difficulties for local health care providers.

Ashe County has been hit hard by the current economic downturn**.** Several large employers have recently shuttered their doors, including a high-end cabinet maker, two electronics manufacturing plants, and two American brand car dealerships. County officials estimate that between 350 and 400 jobs have been lost in the past 2 years. By February 2009, the unemployment rate in Ashe County had climbed to 14.7%, double what it was one year previously (7.3% in February 2008). This rate is significantly higher than the unemployment rates in North Carolina and the U.S. overall.[5] As a local hospital executive put it, "we tend to lead the decline and trail the recovery."



Access to Health Insurance

Historically, Ashe County has had a high uninsurance rate. In 2005, 19% of Ashe County residents were uninsured, compared to 16% of all U.S. residents.[6-7] Given recent job losses, the rate of uninsurance likely is higher now. Nationally, a 1 percentage point increase in the unemployment rate is associated with an increase in the uninsured of about 1 million people.[8]

Typical of rural areas, many employers in Ashe County are small businesses, which often face barriers to offering health insurance to their employees. In 2006, 81% of employers in Ashe County had less than 10 employees, compared to 73% of all U.S. employers.[9] According to local leaders, there are businesses with as many as 24 employees that cannot afford to offer health insurance. In many of the small businesses that are still able to offer insurance, employees are covered by high deductible plans, with deductible levels of $2,000 or more.

Further, Ashe County has relatively more businesses in industries like construction and relatively fewer "white collar" businesses than in the nation overall.[10] Jobs in the construction industry are less likely to come with health insurance than are professional services jobs.[11]

On the economy:

"We tend to lead the decline and trail the recovery."

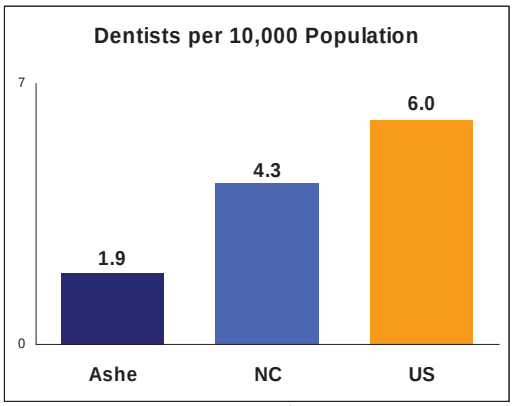
Ashe County hospital executive

Given the reduced access to private insurance, many Ashe County residents rely on public health coverage. In June 2008, 17% of Ashe County residents were covered by Medicaid or the Children's Health Insurance Program, compared to 15% of the state's entire population.[12]

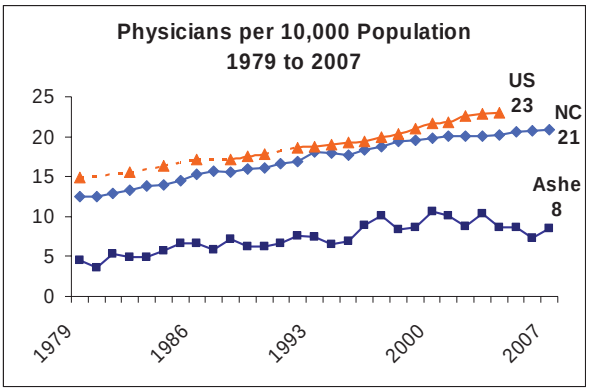
Access to Health Care Providers

Ashe County has a low supply of health care providers. The county's physician-to-population ratios for both primary care and specialist physicians are lower than the ratios for North Carolina and the U.S. overall. County leaders are particularly concerned about the lack of access to specialty care and dental care. There are less than 2 dentists for every 10,000 residents, well below national rates.[13] Further, there are no physicians in Ashe County with a primary specialty related to mental health.[14]

Recruitment of new health care providers is often difficult in rural communities. This is true for a variety of reasons, including the financial challenges of practicing in a rural environment, as illustrated by the circumstances of Jefferson's local hospital.



Source[b]



Source[c]

Financial Difficulties of Local Providers

Ashe Memorial Hospital, a 25 bed critical access hospital located in Jefferson, has served the residents of Ashe County since 1941. The only hospital in the county, it is one of the county's largest employers, with over 300 full-time equivalents. Ashe Memorial Hospital faces the same financial problems as many small, rural hospitals.[15]

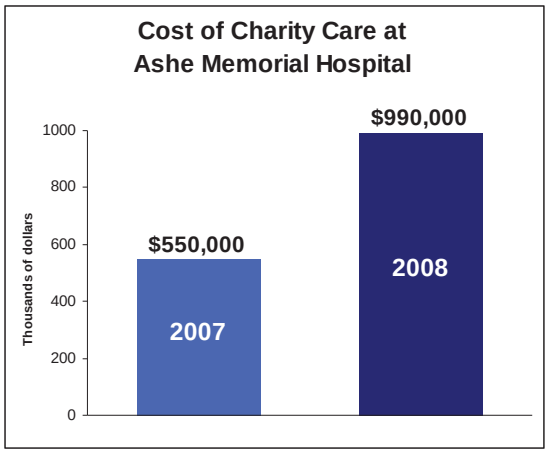
Ashe Memorial is very vulnerable to changes in physician supply. It took several years to recover financially from the loss of a general surgeon between August 2006 and April 2007.

The insurance coverage patterns in the hospital's patient population also present financial difficulties for Ashe Memorial. A high proportion of the hospital's patients are insured by Medicare or Medicaid. The hospital earns essentially no profit from Medicare patients, and the cost of treating Medicaid patients has outpaced the revenue for them.[16] Many other patients at Ashe Memorial are unable to cover the full cost of their care, either because they lack insurance coverage or because they face a high level of out-of-pocket costs under the insurance they do have. In many larger hospitals, Medicaid and charity care patients are subsidized by higher reimbursement for persons with private insurance. However, in Ashe County, a relatively low percentage of patients have generous private insurance.

HEALTH CARE COSTS

The number of patients in Ashe County who cannot afford to pay for their health care has increased markedly in recent years**.** The cost of charity care provided by Ashe Memorial Hospital almost doubled between 2007 and 2008, growing from approximately $550,000 to $990,000. A new safety net program at the hospital's clinic provides medical care for reduced fees, depending on the patient's income. The program enrolled 111 people in the first 3 months of 2009 and has provided 167 visits to these patients. Further, in 2008, a medication assistance program in Ashe County distributed $2.5 million in free prescription drugs to persons unable to pay for them. Program officials expect this year's statistics to be even higher.

These cost issues are fueled by increases in both uninsurance and under-insurance. As local businesses look to curb health care costs, health providers have noticed a jump in the number of patients with very high deductible health plans. Many of these patients cannot afford to meet their deductibles, forcing them to forgo care or rely on charity care from local providers. This includes many on Medicare, who cannot afford their copayments and have dropped supplemental coverage because they cannot afford the premium.



Some residents who have lost their jobs and health insurance can no longer access care from local providers. The county is a Health Professional Shortage Area, and physicians have more demand for care than they can fulfill and must maintain their own financial stability. In some practices, patients with large outstanding balances on their account can no longer make appointments without upfront payment. The end result is that these patients often seek care in the emergency room, a costly and less appropriate alternative to office-based care.

As a result of these cost issues, many Ashe County residents are going without recommended care. According to local health care providers, there has been a marked decline in rates of preventive care and elective procedures over the past 8 months. Outpatient diagnostic volume at the hospital has decreased somewhere between 8 to 12% in the first quarter of 2009 as some patients have skipped recommended screenings—without the ability to pay for treatment, they do not see the point in getting screened. A local leader told of another patient who did not have the money to receive care for a newly diagnosed cancer. Fortunately, a foundation was able to fund the needed care for this person, but leaders feel that there are hundreds of patients who are falling through the cracks.

CONCLUSION

Communities across the U.S. are encountering problems with access to insurance coverage, access to health care providers, and increasing health care costs. The experience of Ashe County, North Carolina illustrates the types of acute problems faced in many rural communities.

Nearly 1 in 6 Americans live in non-metropolitan areas. In 25 states, at least one-quarter of the population lives outside metropolitan cities.[17] These individuals and their health care providers have always faced unique challenges, and these issues are even more intense in the current economic downturn.

SOURCES

Unless otherwise cited, information on the circumstances in Ashe County is based on personal communication with county leaders, April 2009.

1. North Carolina Office of State Budget and Management. July 2007 Municipal Estimates by County. http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/munpop07.html (accessed April 28, 2009).
2. Ashe County Government. http://www.ashecountygov.com/History.htm (accessed April 28, 2009).
3. U.S. Census Bureau. 2005-2007 American Community Survey 3-Year Estimates, using American FactFinder. http://factfinder.census.gov (accessed April 28, 2009).
4. U.S. Census Bureau. 2005-2007 American Community Survey 3-Year Estimates, using American FactFinder. http://factfinder.census.gov (accessed April 28, 2009).
5. Bureau of Labor Statistics. Local Area Unemployment Statistics and Labor Force Statistics from the Current Population Survey. http://www.bls.gov/ (accessed April 28, 2009).
6. M. Holmes and T. Ricketts. *County Estimates of the Number of Uninsured in North Carolina: 2005 Update.* Cecil G. Sheps Center for Health Services Research and North Carolina Institute of Medicine. https://www.shepscenter.unc.edu/new/NorthCarolinaUninsured2005.pdf (accessed April 30, 2009).

7 C. DeNavas-Walt, B.D. Proctor, and C.H. Lee. *Income, Poverty, and Health Insurance Coverage in the United States: 2005*. U.S. Census Bureau, Current Population Reports, P60-231. U.S. Government Printing Office, Washington, DC, 2006. http://www.census.gov/prod/2006pubs/p60-231.pdf (accessed April 30, 2009).

8. J. Holahan and A.B. Garrett. *Rising Unemployment, Medicaid and the Uninsured*. Kaiser Commission on Medicaid and the Uninsured, January 2009. http://www.kff.org/uninsured/upload/7850.pdf (accessed April 30, 2009).
9. U.S. Census Bureau. 2006 County Business Patterns. http://www.census.gov/econ/cbp/index.html (accessed April 27, 2009).
10. U.S. Census Bureau. 2006 County Business Patterns. http://www.census.gov/econ/cbp/index.html (accessed April 27, 2009).
11. Agency for Healthcare Research and Quality. *Percent of private-sector establishments that offer health insurance by firm size and selected characteristics* (Table I.A.2), 2006 (July 2008). Medical Expenditure Panel Survey Insurance Component Tables. Generated using MEPSnet/IC. http://www.meps.ahrq.gov/mepsnet/IC/MEPSnetIC.jsp (April 30, 2009).

12. North Carolina Division of Medical Assistance, County Specific Snapshots for NC Medicaid Services, February 2009. http://www.dhhs.state.nc.us/dma/countyreports/2009/Cnty005.pdf (accessed April 30, 2009).
13. North Carolina Health Professions Data System (NC HPDS), Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the North Carolina Board of Dental Examiners.
14. NC HPDS, with data derived from the North Carolina Medical Board.
15. Information on Ashe Memorial Hospital in this section drawn from: R.T. Slifkin, G.H. Pink, and A.D. Radford. *Assessment of the Financial Status of Ashe Memorial Hospital and Strategic Options for Future Stability.* Final Report to Golden Leaf Foundation, February 2008. Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
16. Because of its designation as a critical access hospital, Ashe Memorial Hospital is reimbursed for stays by Medicare patients at 101% of cost. So, while the full cost of care for Medicare patients is covered, the hospital makes essentially no profit for services reimbursed by Medicare.
17. The Kaiser Family Foundation statehealthfacts.org. Data Source: Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on the Census Bureau's March 2007 and 2008 Current Population Survey Annual Social and Economic Supplements (accessed April 30, 2009).

Sources for Images

A. Bureau of Labor Statistics. Local Area Unemployment Statistics and Labor Force Statistics from the Current Population Survey. http://www.bls.gov/ (accessed April 28, 2009). Figures are unemployment rates for February of each year. National and NC rates are seasonally adjusted; Ashe County rates are unadjusted.
B. NC data are for 2007 and are from the North Carolina Health Professions Data System. U.S. data are for 2006 and are from the American Dental Association, 2006.
C. NC data are from the North Carolina Health Professions Data System. U.S. data are from the U.S. Health Workforce Personnel Factbook and the Area Resource File, Health Resources Services Administration, Bureau of Health Professions.

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

This study was funded through cooperative agreement #2-U1CRH03714-05-00 with the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services.

Health Workforce Issues and Challenges: Primary Care Physicians

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • April 2009

RHRC Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

The Crisis in Rural Primary Care

Mark P. Doescher MD MSPH, Susan M. Skillman MS, Roger A. Rosenblatt MD MPH MFR

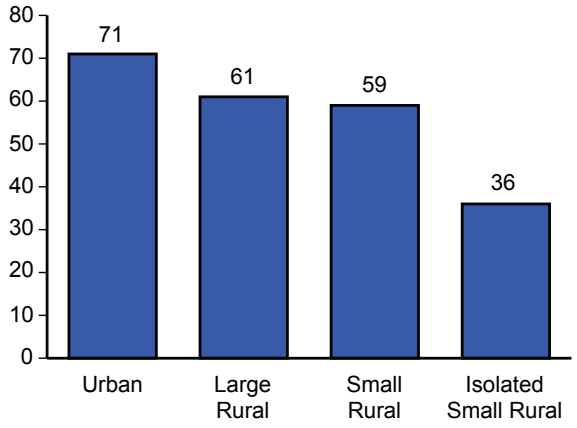
Issues

Primary care provides initial and ongoing care for the majority of patient health care needs. Primary care providers are the backbone of rural health care, yet primary care in rural locations is in crisis. The number of students choosing primary care careers has declined precipitously. Low compensation, rising malpractice premiums, professional isolation, limited time off, and scarcity of jobs for spouses discourage the recruitment and retention of rural primary care providers.

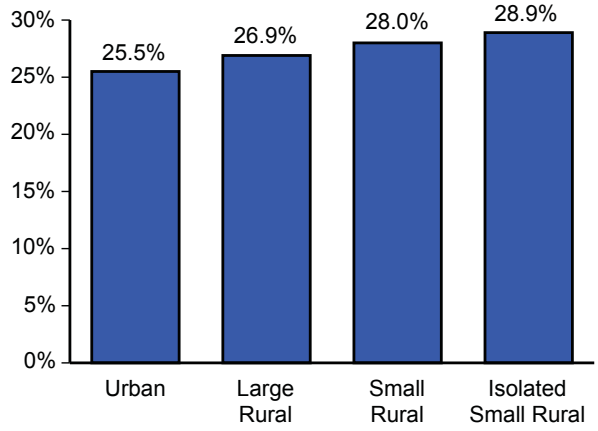
Evidence

- Of the 2,050 rural counties in the U.S., 1,582 (77%) are primary care health professional shortage areas (HPSAs). In 2005, 165 rural counties lacked a primary care physician.[1]
- In 2005 there were 55 primary care physicians per 100,000 persons in rural areas compared with 72 in urban areas.[2] This decreases to 36 per 100,000 in isolated small rural areas.
- Rural primary care physicians are older than their urban counterparts.[1] Counties with high proportions of younger primary care physicians average 35 persons per sq. mi. and 92 primary care providers per 100,000 population, while those with high proportions of older physicians average 26 persons per sq. mi. and 24 primary care providers per 100,000.
- Rural areas rely on non-physician primary care providers (physician assistants [PAs] and nurse practitioners [NPs]). These providers make up 34% of the primary care workforce in Wyoming (a rural frontier state)[3] and 46% of providers at rural, federally-qualified community health centers (CHCs).[4]
- In 2004, rural CHCs had significantly higher proportions of unfilled positions and more difficulty recruiting family physicians than urban CHCs; more than one-third of rural CHCs spent over 7 months recruiting a family physician.[4]

Primary Care Physicians Per 100,000 Population, 2005



Percentage of Primary Care Physicians Aged 56 Years or Older, 2005



Potential Solutions

A substantial body of research indicates the following strategies could strengthen the rural primary care workforce:

- Admit students likely to choose rural primary care careers (e.g., those from rural areas and those with an early preference for primary care).
- Focus medical, NP, and PA school expansion efforts on the rural provider shortage.
- Support primary care departments and teaching and mentoring of trainees (e.g., training programs that promote rural primary care, such as rural clinical experiences).
- Expand primary care training and rural educational experiences.
- Increase the number of medical residency rural training tracks, shown to produce rural physicians.[4]
- Lift the cap on Graduate Medical Education positions for residency programs that produce rural physicians.
- Support loan repayment for students entering rural practice.
- Increase primary care reimbursement for rural providers.

University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

References

1. WWAMI Rural Health Research Center. *Aging of the rural generalist workforce.* Seattle, WA: WWAMI Rural Health Research Center, University of Washington; in progress.

2. Fordyce MA, Chen FM, Doescher MP, Hart LG. *2005 physician supply and distribution in rural areas of the United States.* Final Report #116. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2007.

3. Skillman SM, Andrilla CHA, Doescher MP, Robinson BJ. *Wyoming primary care gaps and policy options.* Final Report #122. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; 2008.

4. Rosenblatt RA, Andrilla CHA, Curtin T, Hart LG. Shortages of medical personnel at community health centers: implications for planned expansion. *JAMA.* 2006 Mar 1;295(9):1042-1049.

This study was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service.

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • June 2009

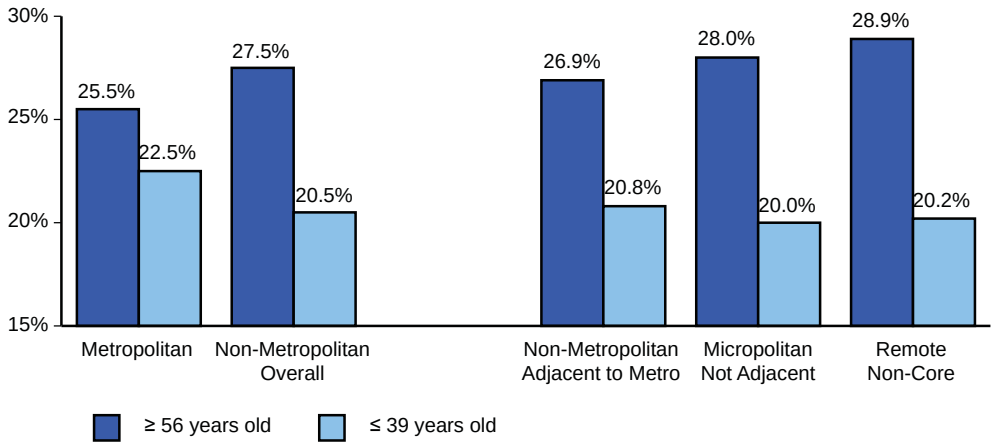
RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

The Aging of the Primary Care Physician Workforce: Are Rural Locations Vulnerable?

Background

Large numbers of primary care physicians (PCPs) are approaching retirement as fewer new U.S. medical graduates are choosing primary care careers. Shortages brought on by retirement will coincide with accelerating demand for health care as the number of elderly Americans aged 65 and older doubles between 2000 and 2030.[1] Primary care is a core element of the rural health care workforce, so knowledge of where "near retirement"-age PCPs work when combined with information about where rural populations most need access to primary care services may help planners avert impending shortages.

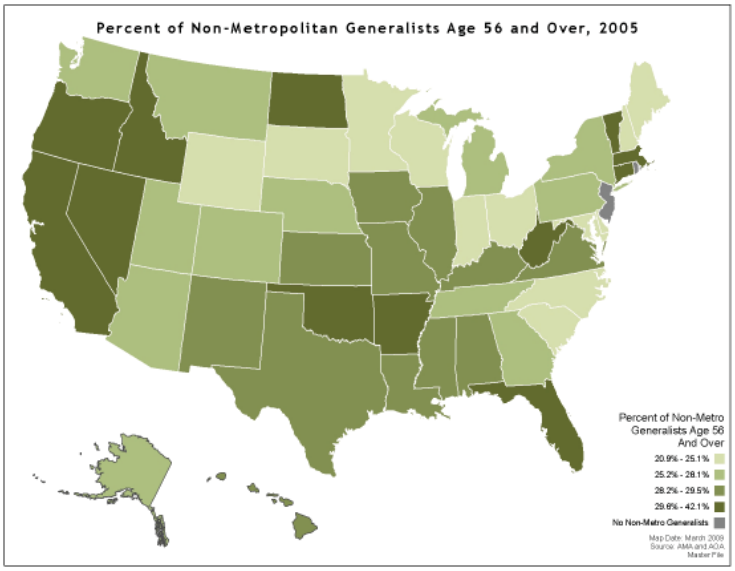
Figure 1: Percentage of Primary Care Physicians Aged 56 and Older and Aged 39 and Younger, 2005



Evidence[2]

- Near-retirement PCPs (age 56 or older) constitute 25.5% of the urban vs. 27.5% of the rural, clinically active, PCP workforce (Figure 1). In remote rural locations, this proportion is 28.9%. In contrast, young PCPs (age 39 or younger) make up 22.5% of the urban PCP workforce and only 20.5% of the rural PCP workforce.
- States with the highest percentages of near-retirement PCPs tended to be located in New England, the lower Midwest, the South, and the West Coast (Figure 2). Massachusetts (42.1%), West Virginia (36.1%), California (34.2%) and Connecticut (33.2%) had the highest percentages

Figure 2



University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

of near-retirement rural PCPs. In contrast, Delaware (28.4%), South Carolina (27.4%), Georgia (26.8%) and Louisiana (26.4%) had the highest percentages of young rural PCPs. (Figure 2 depicts the distribution of near-retirement rural PCPs by state.)

Solutions

The retirement of large numbers of rural PCPs will exacerbate rural shortages unless steps are taken to replenish the rural primary care workforce. Broad efforts are needed to:

- Bolster the numbers of graduates entering rural primary care practice in schools of medicine as well as in nurse practitioner (NP) and physician assistant (PA) programs. These efforts require more K-12 and college student preparation for rural health care careers, promotion of admissions policies that serve rural health care needs, expansion of rural health care training opportunities as part of core educational curricula, and the availability of financial and life-style support for those in rural primary care practice.

Targeted efforts also may help rural communities successfully manage PCP retirement. Accurate data are needed to identify rural communities most at risk for shortages due to PCP retirement. Once high-risk communities are identified, impending primary care shortages could be prevented by:

- Recruiting a new physician, NP or PA before PCP retirement occurs to prevent prolonged gaps in service delivery.
- Supporting transitional work arrangements for near-retirement PCPs that might help postpone full retirement. Locum tenens arrangements, after-hours call coverage, and shared practice arrangements could help delay retirement and smooth the transition to new primary care providers.
- Determining communities' future primary care needs and prioritizing options for addressing these needs. For example, younger PCPs may work fewer hours and take less call than their predecessors, so whether a retiring PCP should be replaced by more than one PCP, an interdisciplinary team, or individual NPs or PAs should be assessed. The merit of outsourcing to larger systems or networking with other rural communities also could be an option for many locally-provided primary care services (after-hours telephone triage, emergency department and inpatient services).

References

1. U.S. Census Bureau. National population projections (2000). Available at: http://www.census.gov/population/www/projections/usinterimproj/natprojtab02a.pdf. Accessed June 9, 2009.
2. Doescher MP, Fordyce M, Skillman SM. *The aging of the rural generalist physician workforce: will some locations be more affected than others?* RHRC Final Report #127. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; in press.

This research was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service. Findings are more fully described in WWAMI RHRC Final Report #127: Doescher MP, Fordyce MA, Skillman SM. The Aging of the Rural Generalist Physician Workforce: Will Some Locations Be More Affected than Others? In press.

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • June 2009

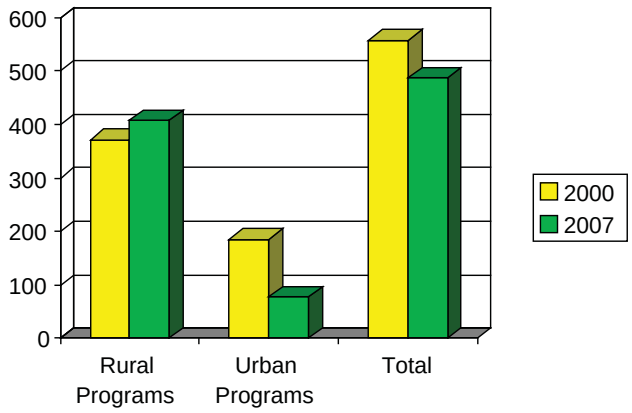
RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

The Availability of Family Medicine Residency Training in Rural Locations of the United States

Issues

Family physicians constitute the largest proportion of the rural primary care physician workforce. The availability of family medicine residency training opportunities in rural locations provides a critical mechanism for addressing rural primary care shortages in the United States. However, over the past few decades, there have been financial pressures on rural residency programs, declining hospital revenues, and negative pressures on rural reimbursement. In concert, these may have had a detrimental impact on the extent to which family medicine residency programs are providing rural training opportunities for new family physicians who might enter rural practice.

Figure 1: Change in the Number of Annual Full-Time Equivalent (FTE) Family Medicine Residency Training Positions Occurring in Rural Locations, 2000/2007

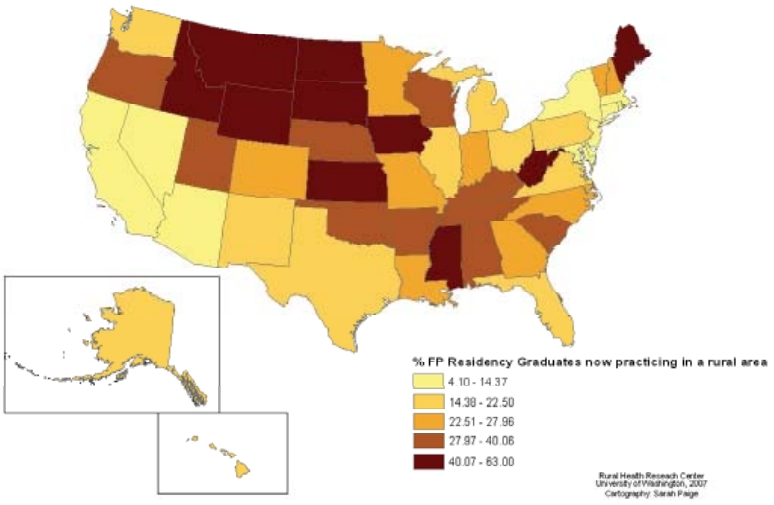


Evidence

All U.S. family medicine residency programs were surveyed in 2000 and 2007 regarding the status and location of their rural training efforts.

- Of 460 family medicine residency programs in 2007, 33 (7% of all programs) were located in rural areas. Of the programs in urban areas, 19 (4% of urban programs) had rural training tracks.
- The 33 rural family medicine residency programs provided 71% of all family medicine training occurring in rural locations.
- Between 2000 and 2007, the time spent by family medicine residents in rural settings decreased slightly (Figure 1). This overall decrease was driven by a reduction in the amount of rural training provided by urban residency programs.
- Graduates from rural residency programs are three times more likely to practice in rural areas than urban residency program graduates. Figure 2 depicts the percentage of rural family physicians by state that attended in-state family medicine residency programs in 2005.

Figure 2: Percentage of Rural Family Physicians by State that Attended In-State Family Medicine Residency Programs, 2005



University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

Potential Solutions

Family medicine residency programs play an essential role in producing rural primary care physicians,[1] so efforts are needed to bolster the ability of these programs to provide rural training opportunities.

- Support family medicine departments in schools of medicine and community-based family medicine residencies in providing educational experiences known to increase the likelihood of rural primary care careers, including support of rural longitudinal clinical experiences.
- Increase the number of family medicine residency programs located in rural communities.
- Increase the number of family medicine residency rural training tracks provided through urban family medicine programs.
- Lift the cap on graduate medical education training positions for residency programs that have been shown to produce rural family physicians.
- Support graduate medical education funding mechanisms for ambulatory training, as most rural family medicine clinical practice occurs outside of the hospital setting.

Reference

1. Rosenblatt RA, Andrilla CHA, Curtin T, Hart LG. Shortages of medical personnel at community health centers: implications for planned expansion. *JAMA.* 2006 Mar 1;295(9):1042-1049.

This research was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service. Findings are more fully described in WWAMI RHRC Final Report #126: Chen FM, Andrilla CHA, Doescher MP, Morris C. Family Medicine Residency Training in Rural Locations. In press.

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • June 2009

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

The Future of Family Medicine and Implications for Rural Primary Care Physicians

Issues

The crisis posed by the persistent shortage of providers in rural areas of the United States is being exacerbated by the precipitous decline in student interest in the field of family medicine. This study examines the rural physician shortage based on an analysis of a cohort of recent medical school graduates, the effect of trends in specialty selection on provider supply, and major trends impacting health care delivery.

Evidence

- Family physicians constitute the largest proportion by specialty type of the rural physician workforce (Figure 1).
- Over the past decade, the proportion of U.S. medical graduates choosing family medicine has declined sharply. Most family medicine residency positions are now filled by international medical school graduates (Figure 2).
- Despite the increasing numbers of medical school graduates, the proportion of students and new physicians choosing family medicine will likely remain far below the numbers required to replace family physicians leaving the field because of death or retirement. Barriers to expanding rural family physician supply occur before, during and after medical school and residency training. These include:

• *Pre-Matriculation Factors:* Physicians who grew up in rural areas are more likely to embark upon rural careers, yet relatively few rural youth pursue medical careers.

• *The Changing Nature of the Primary Care Workforce:* Rural practice requires a broad scope of practice. Today's medical students, who train in environments in which specialized skills are increasingly valued, may find the breadth of rural practice daunting. Also, as more non-physician primary care providers enter

Figure 1: Patient Care Physician-to-Population Ratios by Rural-Urban Status, 2005

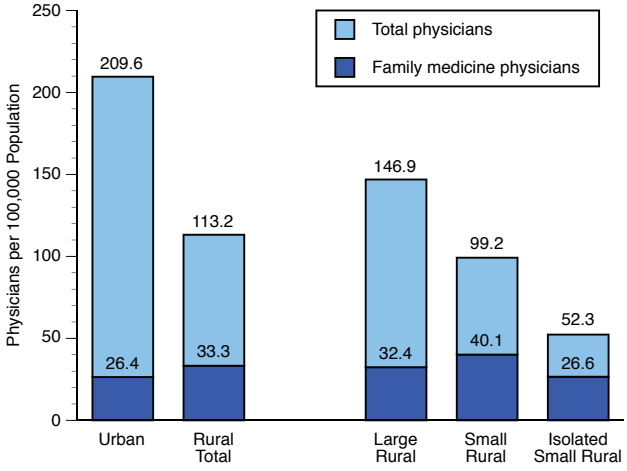
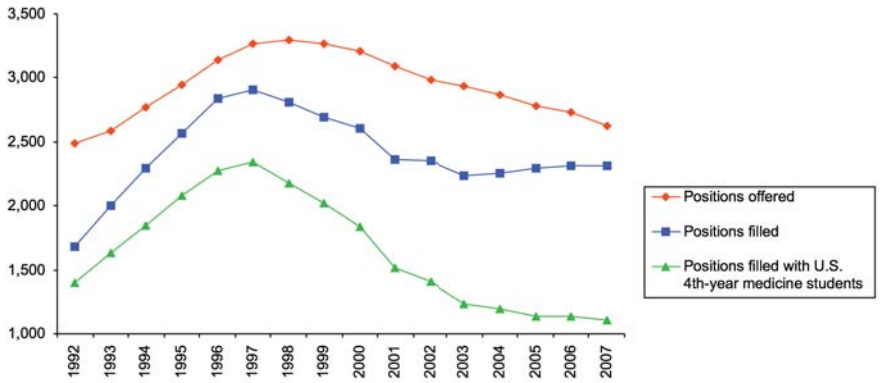


Figure 2: Family Medicine Match Decline



University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

the rural workforce, a subset of services for which family physicians are trained may become less available. Rural practice also requires long hours spent in direct patient care. As more women and younger physicians enter the rural primary care workforce, the time spent by rural primary care providers in direct patient care may diminish.

• *Rural Socioeconomic Factors:* Rural populations have higher rates of poverty and less private medical insurance coverage than urban areas, resulting in less health care demand and lower reimbursement for services. Such economic factors, combined with the professional isolation and limited professional support available for rural practices, can serve as disincentives for choosing rural careers.

Potential Solutions

Private efforts and federal and state policy options could do much to increase and sustain the number of family physicians in rural practice, including the following:

- Encourage those raised in rural areas to enter medicine by providing skills and support at an early stage that will effectively prepare them for future medical careers.
- Change medical school curriculum and admission policies: admit more students from rural backgrounds, provide financial support, offer enrichment programs to disadvantaged students, and prioritize the preparation and production of rural providers.
- Support residency training programs that prepare rural physicians through exposure to rural practice and training tracks, and impart the skills needed in rural practice settings.
- Provide financial and lifestyle incentives for entering rural practice: e.g., increased reimbursement for services provided, practice development subsidies, tax credits for rural practice, locum tenens support, malpractice immunity for free care, payment bonuses, subsidies for electronic health records and reimbursement of telemedicine.
- Modify Medicare policy funding graduate medical education to support the training of primary care physicians in community settings.

Conclusion and Policy Implications

Given these findings, where will the next generation of rural primary care practitioners come from? A patchwork of federal and state programs and initiatives has been deployed to address the shortage of family physicians entering rural practices, and the federal American Recovery and Reinvestment Act will inject significant new resources over a two-year interval into rural primary care. But whether these efforts can do enough to prevent further erosion in the rural primary care workforce remains uncertain.

Research has made it possible to identify a spectrum of interventions within the private and public sectors that could reverse these trends. These interventions need to occur at all life cycle stages: K-12 and college preparation, medical school admissions and curricula, residency training, and support for rural practitioners while in practice. Only then will the integrity of the rural health care system remain intact to ensure high-quality and equitable health care in rural America.

This research was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service. Findings are more fully described in WWAMI RHRC Final Report #125: Rosenblatt RA, Chen FM, Lishner DM, Doescher MP. The Future of Family Medicine and Implications for Rural Primary Care Physician Supply. In press.

Health Workforce Issues and Challenges: Selected Occupations

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • April 2009

RHRC Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

The Crisis in Rural General Surgery

Mark P. Doescher MD MSPH, Dana C. Lynge MD, Susan M. Skillman MS

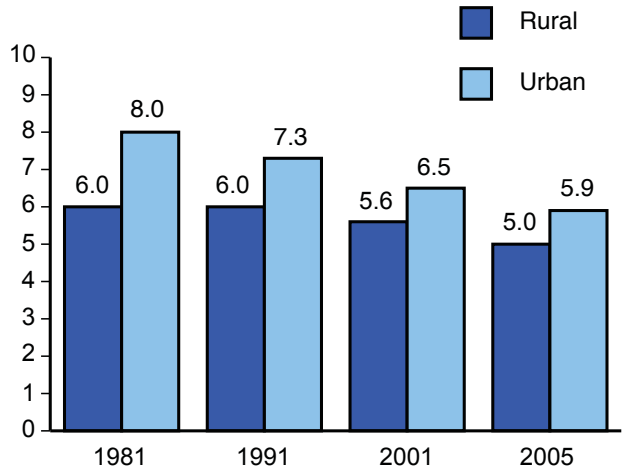
Issues

The dramatic decline in the number of rural general surgeons in the U.S. since the early 1980s has precipitated a crisis in rural general surgery.[1] General surgeons are vital members of the rural health care system, performing emergency operations, underpinning the trauma care system, backing up primary care providers, reducing drive time for rural residents, and contributing to the financial viability of small hospitals.[2-5] Primary care providers are often unwilling to practice in a location without surgical backup. Without surgical services, small hospitals often fail, which reduces community employment, jeopardizes local health care and discourages businesses from locating in the community. Maintaining an ample supply of general surgeons is essential to meet the needs of our aging rural population.

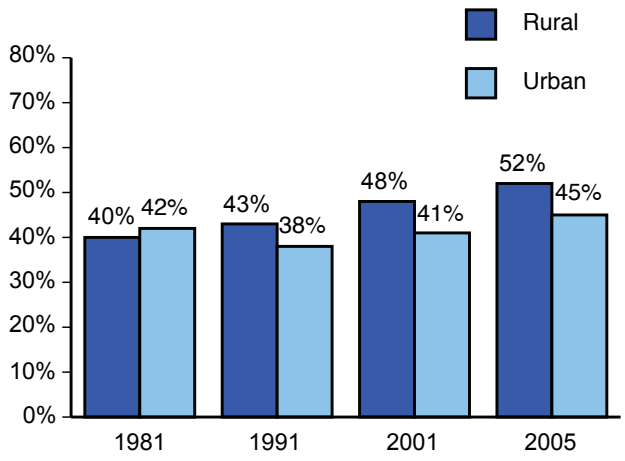
Evidence

- Between 1981 and 2005, the number of rural general surgeons per 100,000 population declined by 21%.
- In 2005, there were 5.0 general surgeons per 100,000 persons in rural areas compared with 5.9 in urban areas.[1] This number was only 4.3 for small nonadjacent rural counties.
- The majority of rural general surgeons are approaching retirement age: 52.0% were aged between 50 and 62 in 2005.[1]
- Women make up a larger proportion of the rural general surgery workforce: their proportion rose from 1.0% in 1981 to 8.9% in 2005.

Number of Rural and Urban General Surgeons Per 100,000 Population, 1981-2005



Percentage of Rural and Urban General Surgeons Nearing Retirement Age (50-62 Years)



Potential Solutions

The following strategies could help avert the decline in the supply of rural general surgeons:

- Admit medical students likely to choose rural careers, such as those from rural locations.
- Focus medical school expansion efforts upon the shortage of rural physicians.
- Support rural general surgery programs and divisions within medical schools and their roles in teaching and mentoring trainees.
- Expand rural experiences during medical education, such as rural surgery training tracks.
- Provide broad skills to general surgery residents interested in rural careers, including the ability to perform orthopedic, gynecologic, and obstetrical procedures.
- Consider lifting the current cap on graduate medical education training positions for residency programs that produce rural physicians.
- Support programs, e.g., loan repayment, to help students manage educational debt levels.
- Increase reimbursement for general surgeons, especially those in rural and underserved settings.

University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

References

1. Lynge DC, Larson EH, Thompson MJ, Rosenblatt RA, Hart LG. A longitudinal analysis of the general surgery workforce in the United States, 1981-2005. *Arch Surg.* 2008 Apr;143(4):345-350.

2. Landercasper J, Bintz M, Cogbill TH, et al. Spectrum of general surgery in rural America. *Arch Surg.* 1997;132:494-496.

3. Sariego J. Patterns of surgical practice in a small rural hospital. *J Am Coll Surg.* 1999;189:8-10.

4. Bintz M, Cogbill TH, Bacon J. Rural trauma care. *J Trauma.* 1996;41:462-464.

5. Williamson HA Jr, Hart LG, Pirani MJ, et al: Rural hospital inpatient surgical volume: cutting edge service or operating on the margin? *J Rural Health.* 1994;10:16-25.

This study was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service.

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • April 2009

RHRC Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Threats to the Future Supply of Rural Registered Nurses

Susan M. Skillman MS, Mark P. Doescher MD MSPH, Roger A. Rosenblatt, MD MPH MFR

Issues

Shortages of registered nurses (RNs) in rural areas of the United States may grow even greater in coming years as the "baby boom" generation retires and as RNs commute to larger towns and urban areas for work.

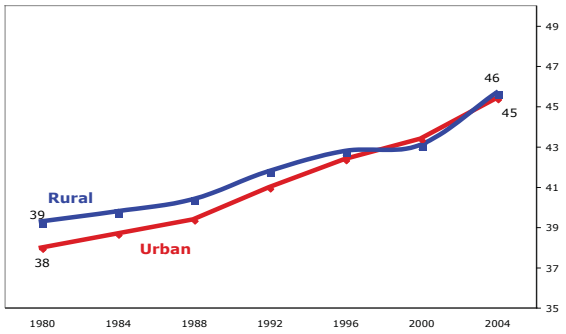
Evidence

- RN shortages nationwide are forecast to increase to more than 1 million FTEs by 2020.[1]
- Access to health care in rural areas is often limited by uneven distribution of health care providers, including RNs.[2]
- Rural RNs' average age in 2004 was 6 years older than it was in 1980. In 2004 working RNs living in rural areas were 45 years old, on average, and 20% were age 55 or older.[3]
- Despite an increased number of RN's per capita living in rural areas, larger percentages are working outside of the rural area types in which they live. As a consequence, the number of RNs per capita who work in rural areas remains lower than in urban areas. Commuting RNs are younger, on average, than those who work in the rural areas types in which they live.[3-4]

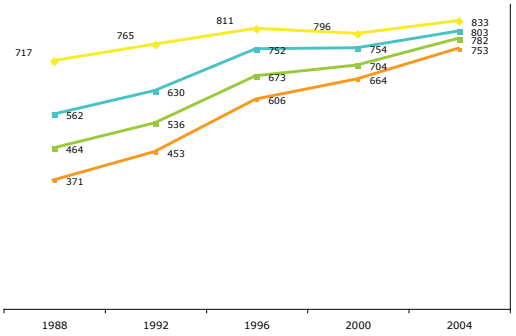
Potential Solutions

- Support and expand nursing education programs that are the most accessible for rural students, such as those at community colleges and through distance education programs.
- Admit more students to nursing schools who are likely to choose rural careers, such as those from rural locations.
- Prepare RNs for the challenges of rural nursing through the use of rural-relevant curricula and opportunities for rural clinical experiences during education.
- Provide evidence-based information about the "best practices" for recruiting and retaining RNs in rural facilities to help rural hospitals and health care facilities successfully compete with employers in larger towns and urban areas.

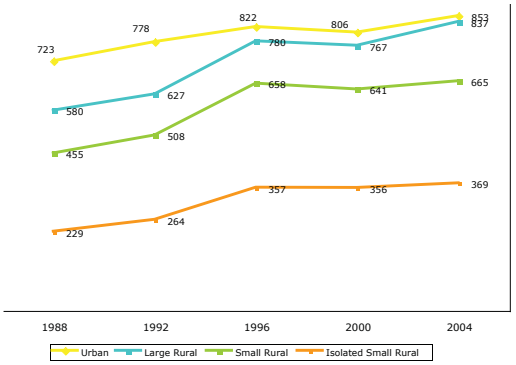
Average Age of RNs Living in Rural and Urban Areas



Number of RNs Per 100,000 Population by RN Residence



Number of RNs Per 100,000 Population by RN Work Location



University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

References

1. National Center for Health Workforce Analysis. (2002). *Projected supply, demand, and shortages of registered nurses: 2000-2020.* Rockville, MD: Bureau of Health Professions, Health Resources and Services Administration, U.S. Department of Health and Human Services; 2002.

2. Larson EH, Johnson KE, Norris TE, Lishner DM, Rosenblatt RA, Hart LG. *State of the health workforce in rural America: profiles and comparisons.* Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2003.

3. Skillman SM, Palazzo L, Hart LG, Butterfield P. *Changes in the rural registered nurse workforce from 1980 to 2004.* Final Report #115. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2007.

4. Skillman SM, et al. Unpublished.

This study was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service.

WWAMI RURAL HEALTH RESEARCH CENTER
Policy Brief • April 2009

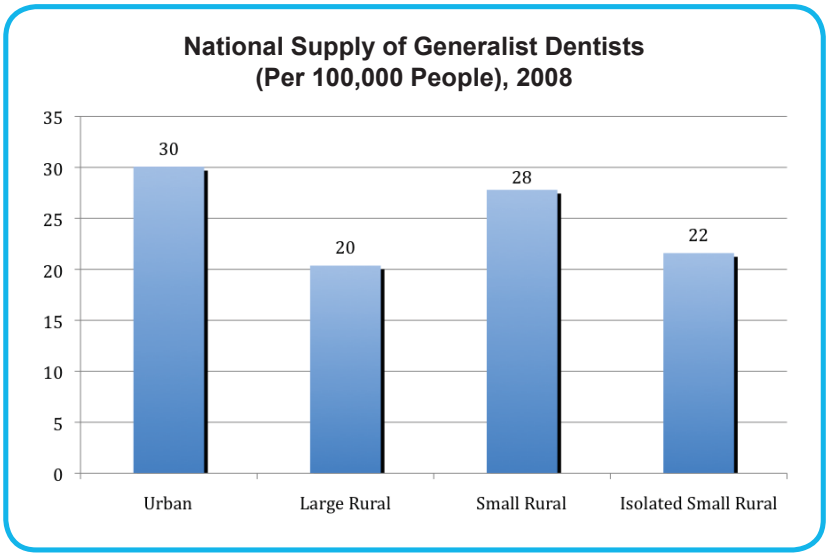
RHRC Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

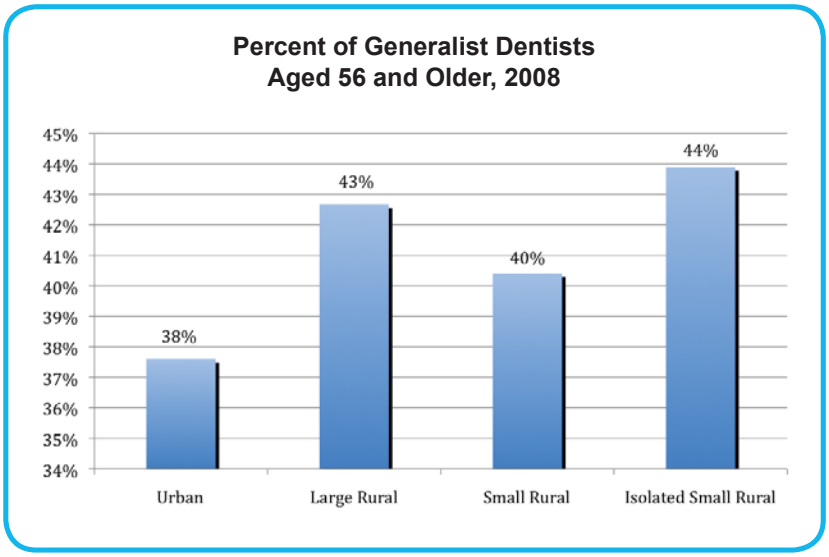
The Crisis in Rural Dentistry

Mark P. Doescher MD MSPH, Gina A. Keppel MPH, Susan M. Skillman MS, Roger A. Rosenblatt MD MPH MFR

Issues

Rural populations have fewer dentists, lower dental care utilization, and higher rates of dental caries and permanent tooth loss than urban populations.[1-5] Reports from the Surgeon General[4] and the Institute of Medicine[6] call for more dentists in rural locations. Federal and state programs have focused on expanding rural dentist supply to increase dental access and improve oral health, but efforts may need to intensify to meet the needs of rural communities.





Evidence

- Of the 2,050 U.S. rural counties, 1,221 (60%) are designated dental health professional shortage areas (HPSAs).[6]
- In 2008, there were 22 "generalist" (general practice, pediatric, or public health) dentists per 100,000 persons in rural areas compared with 30 in urban areas, nationally.[7]
- Nationally, rural areas had a higher percentage of generalist dentists aged 56 or older than urban areas (42% vs. 38%). This percentage was 44% in remote rural locations.[7]
- In 2004, dentists working at rural federally-qualified community health centers (CHCs) were in high demand and short supply. Almost half of rural CHCs had vacant dentist positions for over 7 months.[8]

Potential Solutions

The following strategies could be used to bolster the rural oral health care workforce:

- Admit dental students likely to choose rural careers, such as those from rural locations.
- Focus dental school expansion on the shortage of rural providers.
- Support rural programs and divisions within dental schools and their roles in teaching and mentoring students (e.g., training programs in rural general practice and pediatric dentistry).
- Provide rural experiences during dental education, such as rural training tracks.
- Increase opportunities for dental students and residents interested in rural careers to acquire the broad skill set needed for rural practice.
- Support loan repayment programs for dental students who enter rural practice.
- Enhance the ability of rural communities to recruit and retain dentists through locally-driven community, economic, and leadership development efforts.

University of Washington • School of Medicine • Department of Family Medicine
Box 354982 • Seattle WA 98195-4982 • phone: (206) 685-0402 • fax: (206) 616-4768 • http://depts.washington.edu/uwrhrc/
The WWAMI RHRC receives its core funding from the Health Resources and Services Administration's Office of Rural Health Policy.

References

1. Wall TP, Brown LJ. The urban and rural distribution of dentists, 2000. *J Am Dent Assoc.* 2007 Jul;138(7):1003-1011.

2. Vargas CM, Dye BA, Hayes KL. Oral health status of rural adults in the United States. *J Am Dent Assoc.* 2002 Dec;133(12):1672-1681.

3. Vargas CM, Dye BA, Hayes K. Oral health care utilization by US rural residents, National Health Interview Survey 1999. *J Public Health Dent.* 2003 Summer;63(3):150-157.

4. Department of Health and Human Services. *Oral health in America: a report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.

5. Eberhardt MS, Ingram DD, Makuc DM, et al. *Urban and rural health chartbook. Health, United States, 2001.* Hyattsville, MD: National Center for Health Statistics; 2001.

6. Committee on the Future of Rural Health Care, Board on Healthcare Services. *Quality through collaboration: the future of rural health.* Washington, DC: Institute of Medicine of the National Academies; 2004. Accessible at: http://www.iom.edu/?id=29734.

7. WWAMI Rural Health Research Center, University of Washington. In progress.

8. Rosenblatt RA, Andrilla CHA, Curtin T, Hart LG. Shortages of medical personnel at community health centers: implications for planned expansion. *JAMA.* 2006 Mar 1;295(9):1042-1049.

This study was supported through the WWAMI Rural Health Research Center with funding from the federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service.

Health Systems Challenges

Upper Midwest
Rural Health Research Center
uppermidwestrhrc.org

June 2009
Policy Brief

Rural Issues Related to Bundled Payments for Acute Care Episodes

Overview

Bundling is the practice of providing a fixed payment for a set of services. For example, the current DRG system is a form of bundling as it gives hospitals a single payment for all the services provided to the patient in the hospital. Recent bundling proposals would, in essence, expand the DRG payment for certain conditions and procedures to include post-acute care services. Hospitals would then either have to provide post-acute care themselves or establish arrangements with post-acute care providers. Bundling payments makes the most sense for those episodes of acute care that have the largest post-acute care expenditures and where coordination of care can significantly impact patient outcomes. Examples of the types of care episodes that fit these criteria and that also are prevalent in rural hospitals include pneumonia, stroke, hip fractures, congestive heart failure and acute myocardial infarction.

A Centers for Medicare and Medicaid Services (CMS) demonstration project is assessing the feasibility of bundled payments for acute and post-acute care episodes with a focus on urban-based integrated delivery systems (CMS, 2007). The effective implementation of a bundled payment system faces several challenges, including ensuring that hospitals can form the necessary agreements with other providers on how the single payment will be allocated, measuring quality and implementing quality improvement initiatives and the construction of risk-adjustment systems. Implementing bundled payments in rural settings raises several additional challenges if the policy is to achieve its desired results.

1. Bundled payments may improve the quality of care in rural areas but the impact is likely to be unevenly distributed across geography and care systems

Bundled payments are likely to work best in integrated health care systems where it is easier to align incentives across care modalities. While there are several large integrated health systems in rural areas, much of the rural health care infrastructure is not formally linked to other providers. Current and past bundled demonstration projects have focused on integrated systems linking predominantly large urban-based providers. It is unclear if the findings of the demonstrations can be generalized to a rural context.

Challenges in making bundled payments work in non-integrated environments:

- Allocating a bundled payment across providers can be a complex and time consuming negotiation that can vary according to the bundle of services, availability of post-acute care providers, and the service capacity of the admitting hospital.
- Urban referral centers will have an incentive to provide post-acute services for discharged rural \efficiency and quality of service delivery.
- Contracts among rural providers will likely favor physicians and hospitals over other post-acute providers because of their greater bargaining power. Thus, post-acute care providers may see a decline in their net Medicare reimbursements.
- Appropriately aligning incentives across providers requires some form of monitoring. The rural environment poses particular challenges in monitoring including the lack of health information technology infrastructure and low levels of competition, with some providers having sufficient bargaining power to compromise the goal of bundling contracts.

Potential Strategies to Address this Issue:

- CMS should design optimal contractual arrangements to provide rural providers with templates to minimize the cost of negotiating contracts across providers and the potential imbalance of provider bargaining power.
- CMS should develop risk and volume-adjusted performance criteria to facilitate contract monitoring and selection of post-acute care providers for contracting.

The Upper Midwest Rural Health Research Center is a partnership of the University of Minnesota Rural Health Research Center and the University of North Dakota Center for Rural Health. Support for this Policy Brief was provided by the Office of Rural Health Policy, Health Resources and Services Administration, PHS Grant No. U1CRH03717-02-00.

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

- CMS should provide contract guidance and technical support for small rural providers negotiating contracts with larger urban and rural referral centers.

2. Bundled payments may lead to greater provider consolidation and fewer provider options in rural markets.

Since bundled payments work best in integrated systems, rural providers will have incentives to consolidate vertically and horizontally. This increased consolidation could impact the costs of health care and private payer premiums as well as the number of uninsured and under insured.

Rural patient referrals for the types of care likely to be covered in the initial phases of bundled payment implementation will largely go to urban and larger rural referral centers. These providers may be less likely to transition their patients to post-acute care settings in or near a discharged rural patient's community. Such changes in care patterns may lead to a decline in demand for post-acute care facilities in rural areas. The resulting loss of Medicare reimbursement for rural hospitals could undermine their ability to provide lower-margin safety net services. Lower-volume providers with a high dependence on Medicare revenue such as nursing homes and home health agencies will be particularly vulnerable to changes in care patterns.

Potential Strategies to Address this Issue:

- Congress should adjust the criteria for monitoring the anti-trust implications of provider mergers and acquisitions (such as the Hart-Scott-Rodino thresholds) to increase their sensitivity to scale differences found in rural health care markets.
- The Office of Rural Health Policy should assure that rural providers are fully aware of the Department of Justice/Federal Trade Commission anti-trust enforcement policies regarding service delivery integration.
- Where feasible, CMS should require larger hospitals to establish multiple post-acute contracts to accommodate consumer choice in health care providers and settings.

3. Incorporating Critical Access Hospitals into a bundled payment mechanism may be infeasible

Almost two-thirds of all rural community hospitals are Critical Access Hospitals (CAHs), which receive cost-based reimbursement for inpatient, outpatient and swing bed services. Cost-based reimbursement of CAHs could provide a counter-incentive to the goal of bundled payments. The challenge for policy makers is to appropriately pay CAHs under a bundled payment mechanism without financially jeopardizing CAHs or discouraging referral facilities from contracting with CAHs for post-acute services.

Potential Strategies to Address this Issue:

- Policy makers should consider:
  - Exempting CAHs from the bundled payment methodology by continuing cost-based payments for acute and post-acute services. This option would allow CAHs to receive the same levels of reimbursement, but could provide a counter-incentive to the efficiency goals of bundled payments. It could affect the willingness of larger rural and urban referral centers to accept transferred CAH patients. It could also undermine the ability of CAHs to successfully bid on contracts with referral centers and provide an incentive for those facilities to keep sub-acute care patients instead of referring them to CAH swing beds.
  - Carving out post-acute services provided by CAHs to patients who are referred by larger rural and urban acute care providers. CAHs could be paid for these services under the same bundled payment methodology used for Prospective Payment System (PPS) providers. While this option would likely contribute to achieving bundled payment goals, it could create significant financial challenges for CAHs, especially if outpatient services are included. It could limit CAHs' abilities to continue offering lower-margin, safety net services, particularly if third party payers follow Medicare's lead.
  - Creating a "fixed-bonus" payment for CAH acute and post-acute services to support the continued operation of CAHs and avoid loss of access to needed services in rural communities without alternative sources of care. Performance incentives can be incorporated into the bonus payment methodology to encourage service delivery efficiencies and quality.

4. Under a bundled payment system, safeguards may need to be implemented to protect consumer choice and patient/provider relationships

There will be strong incentives to keep the provision of post-acute services within the admitting hospitals' organizational umbrella or under contract with neighboring providers. The potential loss in access to post-acute providers in a rural patient's own or nearby community threatens a consumer's right to choose their care setting.

Without sufficient safeguards, patient choice may be lost, support for patient self-management and treatment compliance may be compromised, and the well-being of rural residents could be jeopardized.

Potential Strategies to Address this Issue:

- CMS should implement contract requirements that encourage patient choice such as documenting that a specific percent of discharges of rural residents from referral hospitals are able to obtain post-acute services within a reasonable distance from their home community (e.g., within 30 miles).
- CMS should foster communication to assure care coordination during the transition between hospital discharge and transfer back to the patient's community (e.g., treatment plans for post-acute providers, medication reconciliation and care plans sent to the patient's primary care provider.

Reference

CMS, Acute Care Episode Demonstration: Implementation and Support Contract, U.S. Department of Health and Human Services, Baltimore, MD, 2007.

Additional Information

The information in this policy brief was developed by Robert Town, PhD, Walter Gregg, MA MPH, Ira Moscovice, PhD, Shailendra Prasad, MD, MPH, Jill Klingner, PhD, Christopher Dickerson, MS, University of Minnesota.

Partners

University of Minnesota
Rural Health Research Center
Division of Health Policy and Management,
School of Public Health
2520 University Avenue SE, #201
Minneapolis, Minnesota 55414
Phone: (612) 624-6151
http://www.hpm.umn.edu/rhrc

University of North Dakota
Center for Rural Health
School of Medicine & Health Sciences
501 N. Columbia Road Stop 9037
Grand Forks, ND 58202-9037
Phone: (701) 777-3848
http://ruralhealth.und.edu/

Upper Midwest
Rural Health Research Center
uppermidwestrhrc.org

June 2009
Policy Brief

Health Information Technology Policy and Rural Hospitals

The Potential Relationship between Health Information Technology and Quality of Care

- Clinical errors result in at least 44,000 deaths and direct medical costs of $17 billion annually, imposing a substantial burden on the health care system and society as a whole (Institute of Medicine, 1999). Technologies such as electronic medical records, computerized physician order entry, and electronic medication administration records are designed to reduce opportunities for miscommunication between health care professionals. These technologies facilitate care pathway and decision support system implementation, and hold the potential to improve care coordination, decrease errors and resultant costs.
- Numerous studies have assessed the relationship between health information technology (HIT) and clinical quality. Several demonstrate that hospitals experience error reductions subsequent to HIT adoption (Kuperman and Gibson, 2003; Garg, 2005; Chaudhry et al., 2006) and suggest that HIT may reduce mortality and improve quality (Amarasingham, et al., 2009). Some evidence suggests that these results may be due to adoption being most prevalent in otherwise high quality hospitals (Parente and McCullough, 2009). Other studies have not found empirical evidence that HIT improves clinical quality or may have unintended consequences (Ash et al., 2004; Berger and Kichak, 2004; Koppel et al., 2005).

Key HIT Applications in Critical Access Hospitals and Other Rural Hospitals

- The vast majority of HIT research has focused on HIT adoption and impact in urban institutions. Of the 18 studies reviewed by Kuperman and Gibson, all were case studies of either one or two hospitals conducted at academic medical centers, and none were conducted at rural hospitals.
- The Institute of Medicine report on the Future of Rural Health (2005) emphasized the importance of HIT as a vehicle for improving the quality and safety of health care in rural communities. The report also highlighted the challenges many rural communities face in HIT adoption including financial constraints, limited access to capital, inadequate infrastructure, and limited HIT workforce support.
- A study of HIT use in Critical Access Hospitals (CAHs) concluded that "Medicare cost-based reimbursement has permitted many CAHs to make some initial investments in HIT infrastructure" but found that CAHs had much lower use rates for most clinical applications than larger urban hospitals (Casey et al., 2006). Another study found that rural hospitals spend 2% of their annual operating budget on HIT activities, with less activity in smaller rural hospitals (Schoenman, 2007).
- Rural hospitals in general and CAHs in particular continue to lag urban hospitals in HIT adoption (Table 1). Our preliminary analysis suggests that these differences have persisted or grown during 2007 and 2008.

The Upper Midwest Rural Health Research Center is a partnership of the University of Minnesota Rural Health Research Center and the University of North Dakota Center for Rural Health. Support for this Policy Brief was provided by the Office of Rural Health Policy, Health Resources and Services Administration, PHS Grant No. U1CRH03717-02-00.

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Table 1. HIT Prevalence in Critical Access, Rural and Urban Hospitals, 2006

Type of technology[1]	CAH's	Rural Hospitals	Urban Hospitals
Electronic medical records (EMRs)	36%	41%	55%
Computerized physician order entry (CPOE)	8%	11%	20%
Medication administration records (MARs)	18%	22%	31%
Nurse charting/documentation	19%	27%	35%
Lab order entry and communications	69%	84%	93%
Radiology picture archiving and communications systems (PACS)	26%	34%	52%
Cardiology picture archiving and communications systems (PACS)	3%	7%	18%

Data source: Upper Midwest Rural Health Research Center analysis of data from the Healthcare Information and Management Systems Society Analytics Database

[1]Note: our HIT measures differ substantially from those recently used by Jha et. al. (2009) that focus on relatively sophisticated systems. Our measures focus on more common place applications. Given that only 1.5% of all hospitals have comprehensive systems in 2008, we feel that this is a more appropriate approach, particularly for rural hospitals.

Policies for Encouraging HIT Adoption in Rural Hospitals

- MedPAC (2004) and the Institute of Medicine (2005) have recommended several strategies to further use of HIT, including financial incentives and technical assistance for health care providers. The Agency for Healthcare Research and Quality and the Federal Office of Rural Health Policy are funding projects to plan, implement, and demonstrate the value of HIT to improve quality and patient safety in rural areas.
- Ideally, HIT subsidies should be targeted towards institutions that are unlikely to adopt HIT but would produce substantial value in adoption (Orszag, 2008). Mandates may constitute a more cost effective strategy for inducing adoption, but impose costs on providers. Both subsidies and mandates are difficult to target efficiently.
- The American Recovery and Reinvestment Act of 2009 provides approximately $19 billion in subsidies to increase HIT adoption, along with requirements that providers implement "meaningful use" of electronic health records by 2015 or face reimbursement reductions. While the funds are intended to spur widespread HIT adoption, incentives for CAHs are considerably lower than for other hospitals (Wenzlow et al., 2009). Some argue that cost-based reimbursement provides CAHs with sufficient financial resources for HIT, but this implicit subsidy has been in effect while CAHs have lagged far behind other hospitals in HIT. It is crucial that HIT investment and diffusion be carefully monitored.

Additional Information

The information in this policy brief was developed by Jeffrey McCullough, PhD, Assistant Professor, Michelle Casey, MS, Deputy Director, and Ira Moscovice, PhD, Mayo Professor and Director, Upper Midwest Rural Health Research Center.

Partners

University of Minnesota
Rural Health Research Center
Division of Health Policy and Management,
School of Public Health
2520 University Avenue SE, #201
Minneapolis, Minnesota 55414
Phone: (612) 624-6151
http://www.hpm.umn.edu/rhrc

University of North Dakota
Center for Rural Health
School of Medicine & Health Sciences
501 N. Columbia Road Stop 9037
Grand Forks, ND 58202-9037
Phone: (701) 777-3848
http://ruralhealth.und.edu/

References

Amarasingham, R., L. Plantinga, M. Diener-West, D. Gaskin, and N. Powe. "Clinical Information Technologies and Inpatient Outcomes: A Multiple Hospital Study." Archives of Internal Medicine 169:108-114, 2009.

Ash, J., M. Berg, and E. Coira. "Some Unintended Consequences of Information Technology in Health Care: The Nature of Patient Care Information System-Related Errors." Journal of the American Medical Informatics Association 11:104-112, 2004.

Berger, R. and J. Kichak. "Computerized Physician Order Entry: Helpful or Harmful?" Journal of the American Medical Informatics Association 11:100-103, 2004.

Casey, M., J. Klingner, W. Gregg, I. Moscovice, E. Nicholson, T. Lichtenberg, and T. Hil. The Current Status of Health Information Technology Use in CAHs. Flex Monitoring Team Briefing Paper No.11, 2006.

Chaudhry, B., J. Wang, S. Wu, M. Maglione, W. Mojica, E. Roth, S. Morton, and P. Shekelle. "Systematic Review: Impact of Health Information Technology on Quality, Efficiency, and Costs of Medical Care." Annals of Internal Medicine 144:742-752, 2006.

Garg, A., N. Adhikari, H. McDonald, M. Rosas-Arellano, P. Devereaux, J. Beyene, J. Sam, R. Haynes. "Effects of Computerized Clinical Decision Support Systems on Practitioner Performance and Patient Outcomes: A Systematic Review." Journal of the American Medical Association 2931223-1238, 2005.

Hillestad, R., J. Bigelow, A. Bower, F. Girosi, R. Meili, R. Scoville, and R. Taylor. "Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, and Costs." Health Affairs 24:1103-1117, 2005.

Institute of Medicine Committee on Quality of Health Care in America. To Err is Human: Building a Safer Health System. Washington DC: National Academy Press, 1999.

Institute of Medicine, Committee on the Future of Rural Health Care Quality, Board on Health Care Services. Quality through Collaboration: The Future of Rural Health Care. Washington DC: National Academies Press; 2005.

Jha, A., C. DesRoches, E. Campbell, K. Donelan, S. Rao, T. Ferris, A. Shields, S. Rosenbaum, and D. Blumenthal. "Use of Electronic Health Records in US Hospitals." New England Journal of Medicine 360:1628-1638, 2009.

Koppel, R., J. Metlay, A. Cohen, B. Abaluck, A. Localio, S. Kimmel, and B. Strom. "Role of Computerized Physician Order Entry Systems in Facilitating Medication Errors." Journal of the American Medical Association 11:104-112, 2005.

Kuperman, G. and R. Gibson. "CPOE: Benefits, Costs, and Issues." Annals of Internal Medicine 139:31-39, 2003.

Institute of M Payment Advisory Commission (MedPAC). "Information Technology in Health Care," Chapter 7 in Report to the Congress: New Approaches in Medicare. Washington, DC: MedPAC, 2004.

Orszag, P. "Evidence on the Costs and Benefits of Health Information Technology." Washington, DC: Congressional Budget Office Report, 2008.

Parente, S. and J. McCullough. "Health Information Technology and Patient Safety: Evidence from Panel Data." Health Affairs 28:357-360, 2009.

Schoenman, J., J. Keeler, A. Moiduddin and B. Hamlin. Roadmap for the Adoption of Health Information Technology in Rural Communities. Washington, DC: NORC Walsh Center for Rural Health Analysis, 2006.

Tucker, C. and A. Miller. "Electronic Disclosure and Electronic Medical Records: Does the Threat of Litigation Affect Firm Decisions to Adopt Technology." Management Science, Forthcoming.

Walker, J., E. Pan, D. Johnston, J. Adler-Milstein, D. Bates, and B. Middleton. "The Value of Health Care Information Exchange and Interoperability." Health Affairs Web Exclusive 25: W5-10-W5-18, 2005.

Wenzlow, L., T. Size, R. Donkle. "A Commentary re Critical Access Hospitals and HIT Incentives in the Economic Recovery Bill." Sauk Prairie, WI: Rural Wisconsin Health Cooperative, 2009. Available at: http://www.rwhc.com/Papers/Impact_CAH_HIT_Incentives_03-17-09.pdf

Upper Midwest Rural Health Research Center
uppermidwestrhrc.org

August 2009
Policy Brief

Potentially Preventable Readmissions in Rural Hospitals

Marilyn G. Klug, PhD, Associate Professor; Kyle Muus, PhD, Assistant Professor; Michelle Casey, MS, Deputy Director; and Ira Moscovice, PhD, Mayo Professor and Director, Upper Midwest Rural Health Research Center

Background

- About 18% to 20% of Medicare beneficiaries who are discharged from a hospital are readmitted within 30 days. U.S. health care spending associated with potentially preventable readmissions has been estimated at $12 billion to $17.4 billion (MedPAC, 2007; Jencks et al., 2009).
- Readmission rates vary significantly across hospitals and states as well as across diagnoses, even after adjusting for disease-specific and severity-related differences. Unexplained variation in readmission rates suggests that opportunities exist to improve the quality of care and decrease waste (MedPAC, 2007).
- Hospital readmission rates differ depending on how they are defined. For example, rates are affected by the post-discharge time period examined, which diagnoses are included, whether all readmissions are counted or only those deemed to be "potentially preventable," the risk adjustment methods used, whether the rates are calculated only for Medicare patients or for all patients, whether rates are calculated annually or over multiple years, and the treatment of transfers and readmissions to a different hospital than the initial admission.
- MedPAC (2007) has recommended publicly reporting hospital-level readmission rates for a select set of conditions and using Medicare payment policy to encourage hospitals to reduce readmissions. Florida is reporting hospital-level potentially preventable readmission rates for all patients for acute myocardial infarction (AMI), heart failure, and pneumonia (Goldfield et al., 2008); CMS has added 30 day risk-adjusted readmission rates for these three conditions of Medicare beneficiaries to the list of quality measures that will be publicly reported in *Hospital Compare*.
- Studies have not specifically addressed rural hospital readmission rates, except for Weeks et al. (2008), who compared readmission rates for older rural and urban veterans. Jencks et al. (2009) did not include data on Critical Access Hospital discharges in their study of readmission rates for Medicare beneficiaries; they focused on hospitals with 1,000 or more annual Medicare discharges.

Rural Issues Related to Readmissions

- The low volume of admissions in many small rural hospitals may limit the usefulness of condition-specific readmission rates as hospital-level quality measures, especially if patients who are transferred to another hospital during their initial episode of illness are excluded.
  - CMS has selected 25 as the minimum number of cases for calculating AMI, HF, and pneumonia readmission rates, and is using three years of Medicare data to improve the reliability of rates (CMS, 2009a).
  - Calculation of multiyear readmission rates improves the reliability of the rates for smaller facilities, but creates a long lag time before the impact of efforts to reduce readmissions can be measured.
- On average, rural hospitals admit a significantly higher proportion of Medicare beneficiaries and are more reliant on Medicare payment. Consequently, all other factors being equal, Medicare reimbursement penalties or rewards associated with readmission rates will have a disproportionate impact on rural hospitals.

The Upper Midwest Rural Health Research Center is a partnership of the University of Minnesota Rural Health Research Center and the University of North Dakota Center for Rural Health. Support for this Policy Brief was provided by the Office of Rural Health Policy, Health Resources and Services Administration, PHS Grant No. U1CRH03717-02-00.

RHRC Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Potentially Preventable Readmission Rates for Rural Hospitals

- We calculated potentially preventable readmission rates for two groups of hospitals: all rural hospitals and all urban hospitals in five states with rural populations (Iowa, Maine, North Dakota, Oregon and Utah) using 2004 and 2005 Medicare data and 3M Potentially Preventable Readmission (PPR) software.

Policy Issues and Recommendations

- Policy initiatives to reduce high readmission rates need to address the role of other providers in addition to hospitals in preventing readmissions. Physicians, other health care professionals, and post-acute providers such as skilled nursing facilities and home health agencies, along with patients and caregivers should share responsibility for preventing unnecessary readmissions in both rural and urban communities.

Table 1. Rates of Potentially Preventable Readmissions per 10,000 Patients after 15, 30, 60, and 90 Days for Rural and Urban Hospitals in Five States

	15 day	30 day	60 day	90 day
Rural Hospitals Unadjusted Rate	749	1,096	1,503	1,760
Urban Hospitals Unadjusted Rate	738	1,083	1,475	1,730
Urban Hospitals Rate Adjusted for Patient Age Relative to Rural Hospitals	748	1,093	1,492	1,743
Urban Hospitals Rate Adjusted for Patient Severity Relative to Rural Hospitals*	764	1,120	1,536	1,796

*$p < .05$ Data Source: 2004-2005 MedPAR data for Iowa, Maine, North Dakota, Oregon and Utah.

- Our preliminary analysis indicates that the unadjusted readmission rates for rural hospitals are higher than for urban hospitals in these five states (Table 1). After adjusting for patient age, urban hospital readmissions rates are very similar to those of rural hospitals. After adjusting for patient severity, urban hospital readmission rates are significantly higher than rural hospital rates for each time period.
- Table 2 shows the most common initial diagnoses for patients in rural hospitals and urban hospitals who are readmitted to any hospital within 30 days. All of the ten most common diagnoses for patients in rural hospitals who are later readmitted are medical conditions, while the ten most common diagnoses for urban hospitals include both medical and surgical conditions.
- Five conditions are in the top ten most common diagnoses for patients in both rural and urban hospitals who are readmitted within 30 days: pneumonia, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), arrhythmia/conduction, and schizophrenia.
- Compared to urban hospitals, patients at rural hospitals had significantly higher unadjusted readmission prevalence for pneumonia, CHF, angina/atherosclerosis, AMI, schizophrenia, and non-bacterial gastroenteritis.

Limited access to post-acute care services such as home health care may hamper efforts to reduce hospital readmissions in some rural communities.

- Strategies such as payment bundling, patient-centered medical homes, and improvements in care transitions and accountable care organizations (ACOs) could potentially reduce hospital readmission rates by improving care coordination and efficiency of care.
  - A CMS demonstration project is assessing the feasibility of bundled payments for acute and post-acute care episodes (CMS, 2007).
  - A variety of organizations, including public and private insurers, have initiated medical home demonstration projects around the country (Carrier et al., 2009).
  - CMS (2009b) recently funded pilot "Care Transitions" projects in 14 communities, led by Quality Improvement Organizations, to reduce rates of hospital readmissions and fragmentation of care.
  - MedPAC (2009) has suggested that the Medicare program consider implementing ACOs composed of a hospital, primary care physicians, and specialists that would have joint responsibility for the quality and cost of care provided to a large Medicare patient population.

Table 2. Rank and Prevalence of 30 Day Unadjusted Readmissions for Most Common Initial Diagnoses in Rural and Urban Hospitals in Five States

Diagnosis (APR-DRGs)	Rank		Percentage of Patients Readmitted in 30 Days	
	Rural Hospitals	Urban Hospitals	Rural Hospitals	Urban Hospitals
Pneumonia	1	3	11.2***	9.8
Congestive Heart Failure (CHF)	2	2	15.8*	14.9
Chronic Obstructive Pulmonary Disease (COPD)	3	4	14.8	14.1
Arrhythmia/Conduction	4	10	10.9	10.1
Kidney/Urinary Tract Infection	5	15	10.5	10.0
Angina/Atherosclerosis	6	28	9.7***	7.8
Acute Myocardial Infarction (AMI)	7	13	15.8*	13.9
Schizophrenia	8	8	21.8**	18.8
Septicemia	9	20	11.6	12.0
Non-Bacterial Gastroenteritis	10	40	11.2*	9.9
Percutaneous coronary intervention (PCI)without AMI	28	1	12.7	11.6
Knee Joint Replacement	14	5	5.1**	6.0
PCI with AMI	43	6	18.9**	15.2
Other Vascular Procedures	41	7	15.6	16.1
Bowel Procedures	16	9	11.6*	13.1

Data Source: 2004-2005 MedPAR data for Iowa, Maine, North Dakota, Oregon and Utah.
*Differences between rural and urban hospitals are significant at $p < .05$
**Differences between rural and urban hospitals are significant at $p < .01$
***Differences between rural and urban hospitals are significant at $p < .001$

- To the extent that demonstrations and pilot projects of these strategies focus on urban communities and large integrated delivery systems, it may be difficult to translate their findings to rural environments. Rural demonstration projects are needed to identify models that will succeed in rural settings.
- Implementation of these strategies needs to take into account differences in urban and rural health care systems. For example, MedPAC (2009) suggests that ACOs could be formed from an integrated delivery system, physician-hospital organization, or academic medical center, and concludes that ACOs would have to have a minimum of at least 5,000 patients. These characteristics suggest that alternative models would need to be considered for rural areas that are less-densely populated and where providers are not formally linked. Similarly, Town et al. (2009) describe several challenges that rural providers face in participating in a bundled payment initiative (e.g., different incentives in cost-based reimbursement and bundling; difficulty in "virtually" integrating when rural patients receive hospital and post-acute care in geographically dispersed facilities; negotiation disadvantages for rural hospitals with few post-acute care options); and suggest actions that policymakers could take to facilitate rural participation (e.g., developing risk and volume-adjusted performance criteria for contracts; providing contract guidance and technical support for small rural providers; carving out CAH post-acute services; or creating a "fixed-bonus" payment to support continued operation of CAHs).
- As MedPAC (2007) has noted, improving patient safety in hospital settings, improving communication with patients before and after discharge, and improving communication with community physicians and post-acute care providers can lower readmission rates. It is important to examine the rural context for these efforts. For example, we have developed and field-tested quality measures addressing provider communication about rural patients who are transferred between health care settings.

- To help inform the policy debate about readmissions of rural patients, we are currently conducting additional research using national Medicare data to assess how hospital and patient attributes affect potentially preventable hospital readmission rates for heart failure, pneumonia, and chronic obstructive pulmonary disease. This analysis will be completed in fall 2009.

Additional Information about Study Methods and Data

The analysis in this policy brief utilized a model developed by 3M Health Information Systems for identifying potentially preventable readmissions using hospital claims data. Based on an extensive review of the existing permutations of diagnoses for index hospitalizations and readmissions, the 3M PPR model determines the likelihood that a given readmission diagnosis is related to the index hospitalization and thus potentially preventable. The analysis excluded readmissions due to unrelated causes, transfers and deaths, and adjusted rates for patient age and severity. UMRHRC researchers received permission from 3M to use the PPR software to analyze Medicare claims data.

The 2004–2005 MedPAR data used in this analysis were originally obtained for an AHRQ Building Research Infrastructure and Capacity (BRIC) Program grant to the Center for Rural Health at the University of North Dakota. Permission was obtained from CMS to reuse the data for this analysis. For additional information about the 3M PPR model, see Goldfield et al., 2008.

Partners

University of Minnesota
Rural Health Research Center
Division of Health Policy and Management,
School of Public Health
2520 University Avenue SE, #201
Minneapolis, Minnesota 55414
Phone: (612) 624-6151
http://www.hpm.umn.edu/rhrc

University of North Dakota
Center for Rural Health
School of Medicine & Health Sciences
501 N. Columbia Road Stop 9037
Grand Forks, ND 58202-9037
Phone: (701) 777-3848
http://ruralhealth.und.edu

References

Carrier, E., Gourevitch, M., & Shah N. (2009) Medical homes: Challenges in translating theory into practice. *Medical Care 47* (7): 714–722.

CMS (2007). *Acute care episode demonstration: Implementation and support contract*. Baltimore, MD: U.S. Department of Health and Human Services.

CMS. (2009a). *CMS 30-day risk-standardized readmission measures for AMI, HF and PN: Fact sheet*. Available at www.qualitynet.org.

CMS. (2009b). Medicare announces sites for pilot program to improve quality as patients move across care settings. Press release.

Goldfield, N., McCullough, E., Hughes, J., Tang, A., Eastman, B., Rawlins, L., & Averill, R. (2008). Identifying potentially preventable readmissions. *Health Care Finance Rev., 30*, 75–91.

Jencks S., Williams M., & Coleman, E. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. *N. Engl. J. Med, 360*, 1418–28.

MedPAC. (2007). Chapter 5: Payment policy for inpatient readmissions. In report to Congress, *Promoting Greater Efficiency in Medicare*. Washington, DC: MedPAC.

MedPAC. (2009). Chapter 2: Accountable care organizations. In report to Congress, *Improving Incentives in the Medicare Program*. Washington, DC: MedPAC.

Town, R., Gregg, W., Moscovice, I., Prasad, S., Klingner, J., & Dickerson, C. (2009, June). Rural issues related to bundled payments for acute care episodes. *Upper Midwest Rural Health Research Center Policy Brief.* Retrieved August 27, 2009, from http://www.uppermidwestrhrc.org/pdf/policybrief_bundled_payments.pdf.

Weeks, W., Lee, R., Wallace, A., West, A., & Bagian, J. (2008). Do older rural and urban veterans experience different rates of unplanned readmission to VA and non-VA hospitals? *J. Rural Health, 25*, 62–69.

Upper Midwest
Rural Health Research Center
uppermidwestrhrc.org

June 2009
Policy Brief

Rural Issues Related to Comparative Effectiveness Research and Dissemination

1. Lack of clinical research in rural environments and limited participation of rural patients in clinical trials

Clinical and population-based research conducted in urban environments is not necessarily relevant to rural environments. Rural patients, especially those who are low-income, less educated or African-American, are less likely to participate in clinical trials than urban patients (Baquetet al, 2006). In addition to lack of information about clinical trials, additional factors influencing rural patients' decisions to participate in clinical trials include location of the treatment facility, recommendation or discouragement from primary care physicians and oncologists, disease status, side effects of the treatment, perceived effectiveness of treatment and monetary burden (Coyne et al, 2004; Virani et al, 2008).

Potential Strategies to Address this Issue:

- AHRQ should work with NIH and HRSA, ORHP to ensure that academic medical centers conducting clinical trials work with community partners to improve recruitment of rural subjects for clinical research Examples of specific strategies to accomplish this include providing rural health care professionals and patients with easily accessible information about clinical trials and patient eligibility, and facilitating rural subject access to clinical trials by establishing satellite or mobile facilities in rural areas in partnership with rural hospitals and medical practice
- NIH, the Centers for Disease Control and other federal and state health agencies that fund medical registries for tracking patients with specific diseases or medical conditions should ensure that rural patients are represented in the medical registries.
- AHRQ should work with HRSA, ORHP to provide targeted grant support and technical assistance for rural providers to participate in primary care practice based research networks.
- AHRQ should work with HRSA, ORHP to provide financial support and technical assistance to rural practices and small rural hospitals in implementing the health information technology infrastructure needed to facilitate their participation in clinical trials and medical registries.

2. Implementation of practice guidelines in rural settings often lags behind urban settings. Practice guidelines frequently fail to take into account the potential impact of health system factors that influence their rural relevance and make implementation more challenging in rural settings.

The implementation of evidence-based practice guidelines that translate comparative effectiveness research findings into practice has the potential to improve the quality of health care in rural as well as urban settings. However, practice guidelines have generally been developed by specialty professional associations and tested in urban environments, particularly in large academic medical centers. Their effective implementation in rural settings must consider the impact of health system factors such as practice organization, provider specialty, scope of practice, patient volume, the availability of health information technology and payment mode. Practice guidelines need to take into account the resources available in rural settings, including the lack of specialists, and address circumstances in which rural patients are stabilized in a rural hospital and then transferred to a larger facility for care.

Potential Strategies to Address this Issue:

- HRSA, ORHP should partner with AHRQ to fund studies and demonstration projects that examine the impact of health system factors such as practice organization, provider specialty, scope of practice, patient volume, the availability of health information technology, and payment mode on the rural relevance of practice guidelines and their implementation in rural

The Upper Midwest Rural Health Research Center is a partnership of the University of Minnesota Rural Health Research Center and the University of North Dakota Center for Rural Health. Support for this Policy Brief was provided by the Office of Rural Health Policy, Health Resources and Services Administration, PHS Grant No. U1CRH03717-02-00.

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

settings. The demonstration projects should address linkages between rural providers and tertiary care facilities.

- AHRQ and CMS should work with HRSA, ORHP to support efforts to expand beyond condition specific guidelines and quality measures to address care of patients with multiple chronic conditions and those whose care is shared among providers. The National Quality Forum's work on Preferred Practices and Performance Measures in Care Coordination is an example of one such effort. These efforts are important for all patients with chronic conditions, but are especially important for rural patients.
- AHRQ should work with HRSA, ORHP to incorporate information about the rural relevance of practice guidelines in the National Guideline Clearinghouse.
- AHRQ should work with HRSA, ORHP to support rural practices and small rural hospitals in implementing the health information technology infrastructure needed to incorporate clinical reminders, prompts and alerts that facilitate implementation of guidelines into clinical practice.
- CMS should work with HRSA, ORHP to fund Quality Improvement Organizations (QIOs) to work with small rural hospitals, clinics and medical practices on implementation of rural relevant guidelines.

3. Rural health professionals may have limited access to current evidence-based information, and many rural consumers/ patients have difficulty obtaining the appropriate information they need to make health care decisions.

Health care professionals in small rural medical practices or hospitals may have difficulty accessing the latest evidence-based information to support quality care because they do not have access to a medical library; can not afford online access to clinical information resources; or have limited access to high-speed internet connections.

On average, rural populations are older and have more chronic health conditions than urban populations, increasing their need for health care information. However, low health literacy is a problem in many rural areas, where residents tend to have lower educational status.

Potential Strategies to Address this Issue:

- NIH should require that medical research institutions funded through the Clinical and Translational Science Award (CTSA) Program include outreach to rural providers in their own states, as well as in nearby rural states without funded medical research institutions.
- NIH and AHRQ should work with HRSA, ORHP to expand dissemination efforts to make rural consumers/ patients aware of existing resources such as the National Library of Medicine's Medline Plus web site.
- Expand the AHRQ Effective Health Care Program, which is compiling research results, translating them into a variety of useful formats for clinicians and consumers, and disseminating the information. Work with HRSA, ORHP to include a special focus on rural clinicians and consumers.
- AHRQ and the National Library of Medicine should work with HRSA, ORHP to fund demonstration projects for health sciences libraries in states with significant rural populations to work with public libraries in rural communities to provide online access to a core set of clinical information resources to rural health professionals and rural patients.

Additional Information

The information in this policy brief was developed by Ira Moscovice, PhD, Mayo Professor and Director and Michelle Casey, MS, Deputy Director, Upper Midwest Rural Health Research Center.

For more information, contact:
Michelle Casey, (612) 623-8316, mcasey@umn.edu

Partners

University of Minnesota
Rural Health Research Center
Division of Health Policy and Management,
School of Public Health
2520 University Avenue SE, #201
Minneapolis, Minnesota 55414
Phone: (612) 624-6151
http://www.hpm.umn.edu/rhrc

University of North Dakota
Center for Rural Health
School of Medicine & Health Sciences
501 N. Columbia Road Stop 9037
Grand Forks, ND 58202-9037
Phone: (701) 777-3848
http://ruralhealth.und.edu/

Contact Information for Rural Health Research and Policy Analysis Centers

Rural Health Research Centers

Maine Rural Health Research Center

(207) 780-4430
http://muskie.usm.maine.edu/ihp/ruralhealth

Director: David Hartley, PhD, MHA
davidh@usm.maine.edu
Deputy Director: Andrew F. Coburn, PhD
andyc@usm.maine.edu
Areas of focus: behavioral health, rural hospitals, primary care

North Carolina Rural Health Research & Policy Analysis Center
(919) 966-5541
http://www.shepscenter.unc.edu/research_programs/rural_program
Director: Rebecca T. Slifkin, PhD
slifkin@schsr.unc.edu
Deputy Director: Victoria Freeman, DrPH, RN
freeman@schsr.unc.edu
Areas of focus: Medicare & Medicaid policy, EMS, access to care, hospital finance

South Carolina Rural Health Research Center

(803) 251-6317
http://rhr.sph.sc.edu

Director: Janice C. Probst, PhD
jprobst@mailbox.sc.edu
Deputy Director: Amy Brock Martin, DrPH
brocka@mailbox.sc.edu
Areas of focus: minority and multicultural health disparities, vulnerable populations, access to care

Upper Midwest Rural Health Research Center
University of MN & University of ND
(612) 624-8618
http://www.uppermidwestrhrc.org

Director: Ira Moscovice, PhD
mosco001@umn.edu
Deputy Director: Michelle Casey, MS
mcasey@umn.edu
Areas of focus: quality of care and patient safety, health information technology, access to care

West Virginia Rural Health Research Center

(304) 347-1348
http://wvrhrc.hsc.wvu.edu

Director: Michael Hendryx, PhD
mhendryx@hsc.wvu.edu
Deputy Director: Cynthia Persily, PhD
cpersily@hsc.wvu.edu
Areas of focus: environmental health & health risks, socioeconomic health disparities

WWAMI Rural Health Research Center

(206) 685-0402
http://depts.washington.edu/uwrhrc

Director: Mark Doescher, MD
mdoesche@u.washington.edu
Deputy Director: Susan M. Skillman, MS
skillman@u.washington.edu
Areas of focus: health workforce, health care access & outcomes for underserved populations

Rural Health Policy Analysis Initiatives

RUPRI Center for Rural Health Policy Analysis

(319) 384-5121
http://www.unmc.edu/ruprihealth

PI: Keith Mueller, PhD
keith-mueller@uiowa.edu

Areas of focus: health care financing & reform, systems building, health care needs of special rural populations

Rapid Response to Requests for Rural Data Analysis

(919) 966-5541
http://www.shepscenter.unc.edu/research_programs/rural_program
PI: Rebecca T. Slifkin, PhD
slifkin@schsr.unc.edu

Areas of focus: Medicare and Medicaid policy, access to care, provider availability, hospital finance

Rural Policy Analysis and Applications

(573) 882-0316
http://www.rupri.org

PI: Brian Dabson
brian@rupri.org

Areas of focus: health & human services integration, health workforce, health care reform