

CHAPTER

2

**Rural beneficiaries' access
to care**

R E C O M M E N D A T I O N

The Secretary should identify strategies to increase rural beneficiaries' participation in government programs that cover Medicare premiums and/or deductibles and coinsurance.

***YES: 13 • NO: 0 • NOT VOTING: 0 • ABSENT: 3**

***COMMISSIONERS' VOTING RESULTS**

Rural beneficiaries' access to care

Promoting beneficiaries' access to health care is one of the primary objectives of the Medicare program. Rural areas of the country often have fewer providers and longer distances between beneficiaries and providers than do urban areas, potentially hindering access to care. Research by the Medicare Payment Advisory Commission (MedPAC) is largely reassuring. On numerous measures, including satisfaction with availability of providers, ability to get care, and frequency of receiving needed care, rural and urban beneficiaries appear strikingly similar, although beneficiaries in the most remote areas report somewhat greater barriers to accessing care. Overall, rural beneficiaries' greatest potential barrier to care appears to be the high cost of care. The Commission is concerned about this problem and recommends that the Secretary identify strategies to increase eligible rural beneficiaries' participation in government cost-sharing assistance programs. Interpreting the larger policy implications of the Commission's findings is complex. It is unclear whether programs designed to address perceived problems with the availability of rural providers have been successful or not: The programs could be imperfectly targeted or the magnitude of the barriers overestimated. At the same time, MedPAC's findings suggest that policymakers should be vigilant in monitoring access issues in remote rural areas.

In this chapter

- Assessing rural beneficiaries' access to care
 - Programs to address rural access problems
-

For many years, policymakers have been concerned that rural beneficiaries may have difficulty accessing care. Perceived barriers include long travel time between beneficiaries and providers, fewer available providers, the inability of some rural beneficiaries to afford care, and the inadequacy of supplemental insurance coverage. In addition, many believe that rural beneficiaries tend to have a greater need for health services. Accordingly, the purpose of this chapter is to uncover the degree to which rural beneficiaries have problems accessing care, discuss the implications for Medicare policy, and examine the Medicare programs intended, in part, to increase rural beneficiaries' access to care.

The Commission found that, on the whole, rural beneficiaries are satisfied with their access to care and the availability of providers. In addition, they are as likely as their urban counterparts to avail themselves of needed services. Two important exceptions emerged, however, from an analysis of the Medicare Current Beneficiary Survey (MCBS) (see text box) and Medicare claims data. First, beneficiaries living in the most remote areas reported a greater degree of difficulty accessing care than did other rural and urban beneficiaries. Second, rural beneficiaries expressed greater concern about the cost of their care than did their urban counterparts.

In considering the implications of these findings, it is unclear whether limited problems with access to care suggest that programs to increase access have been largely successful, not adequately targeted to the most remote areas, or whether there is a lack of underlying need for them. However, given rural beneficiaries' concern about the cost of their care, the Commission recommends that the Secretary identify strategies to improve participation in government cost-sharing assistance programs.

This chapter first explores the evidence on rural beneficiaries' experience in accessing care. It notes that assessing access to care is not straightforward and presents survey and claims data to describe the latest findings on availability

Using the Medicare Current Beneficiary Survey to evaluate access

To evaluate access and satisfaction from the perspective of beneficiaries, the Commission analyzed data from the 1999 Access to Care files of the Medicare Current Beneficiary Survey (MCBS). Initially fielded in 1991, the MCBS is a longitudinal survey of a nationally representative sample of Medicare beneficiaries.¹

Each autumn, the Health Care Financing Administration administers the MCBS access to care questionnaire to noninstitutionalized beneficiaries. Questions address beneficiaries' ability to obtain care, satisfaction with care, and usual source of care. Beneficiaries ages 85 and older, those who are disabled and under age 65, and those enrolled in Medicare managed care are oversampled to permit comparison of these groups with their counterparts. However, the sample underrepresents

populations in rural areas of Southern states and frontier counties (areas with fewer than six people per square mile). The 1999 Access to Care file includes data from 16,670 noninstitutionalized Medicare beneficiaries.

Because the number of MCBS respondents in two categories of counties (those that were not adjacent to a metropolitan area and contained a population of less than 2,500 (urban influence code 9) and those that were adjacent to a large metropolitan area and contained a city with a population of greater than 10,000 (urban influence code 3)) was insufficient to permit reasonably precise statistical testing, MedPAC combined these county categories with others. This grouping increases the proportion of the population represented, allowing sound statistical analysis. ■

¹ For additional information on the Medicare Current Beneficiary Survey and its history, see Adler 1994.

of providers and access to providers. Access measures include beneficiaries' own assessments, travel time, use of services, out-of-pocket spending, and availability of supplemental insurance. The chapter then reviews the array of Medicare programs created to improve access to care for rural beneficiaries, and explores some of the policy issues concerning the Medicare incentive payment (MIP) program for health professionals in rural areas and coverage of telemedicine services.

Assessing rural beneficiaries' access to care

Analyzing whether rural beneficiaries have adequate access to needed health care is complicated by difficulties in measuring access and evaluating its

adequacy. Because access is a multidimensional concept, the Commission relied on both subjective and objective measures to evaluate it. The available subjective measures reflect beneficiaries' satisfaction with availability of and access to care, while the objective measures capture information such as travel time to providers, number of providers in rural areas, and use of needed care.

While the Commission concludes that policymakers should be reassured about the adequacy of rural beneficiaries' access to care, we recognize that our analysis is constrained by survey data that were not designed to reflect every problem in each part of the country as well as a lack of data on outcome measures for patients with serious medical emergencies, such as heart attacks. In addition, this analysis is constrained by the lack of a definition—or benchmark—of acceptable access to care.

Without such a benchmark, how do we know what degree of access to care is adequate?

- Should adequacy of access for rural beneficiaries be measured in comparison with urban beneficiaries? We compare rural beneficiaries' responses to access questions to those of urban beneficiaries, but different responses with respect to travel times, for example, may not necessarily indicate a problem if rural beneficiaries sought out urban providers who demonstrated better patient outcomes. Conversely, similar responses do not rule out problems. For example, although both rural and urban beneficiaries express satisfaction with their access to care, many in each group do not receive clinically appropriate care, such as mammograms.
- Should adequacy be judged based upon beneficiaries' own assessments? Survey results are by nature subjective and influenced by individuals' frame of reference. Beneficiaries' opinions may or may not be a valuable tool in assessing adequacy of access.
- Should adequacy be defined by a ratio of providers to beneficiaries or by the existence of certain core services within a certain radius? If so, what is the appropriate radius? This approach would address the complicated and value-laden question of what array of services should be readily available to all beneficiaries. Perhaps a rural environment dictates a different standard of access. Just as urban beneficiaries must cope with more air pollution, perhaps rural beneficiaries must cope with greater travel time to health care services.

The Commission does not attempt to answer these questions at this juncture, but recognizes that they are inherent to assessing the available data and research.

Findings on access to care

Overall, rural and urban beneficiaries both report high satisfaction with the availability of providers and access to care, although there is some variation. By measures relating to satisfaction with the availability of medical care and the ability to get care, rural and urban beneficiaries appear to have comparable access. By a few measures, including reported difficulty receiving care, rural beneficiaries appear to have better access, but by other measures—insurance coverage, ability to pay, and travel time to usual source of care—they appear to have somewhat lower access.

MedPAC's work also reveals that rural areas differ from one another with respect to a variety of access measures, depending on proximity to a metropolitan area. Beneficiaries who live in the most remote areas appear to be more vulnerable to access problems than other rural and urban beneficiaries.² These same beneficiaries also report significantly lower health status, income, and education levels, which suggests a relatively higher level of need among this population as well.

We also found a relatively small difference between rural and urban beneficiaries in their use of needed health care services, although remote rural beneficiaries used needed services somewhat less. According to an index that equally weighted various clinical indicators, beneficiaries in the most rural areas received needed care about 71 percent of the time, compared with about 73 percent of the time for all other beneficiaries. The alarming aspect of this finding is that both urban and rural beneficiaries fail to get needed care about 30 percent of the time.

The following section evaluates several interrelated indicators of access to care:

- rural beneficiaries' health care needs,
- the availability of providers and services, and

- the accessibility of existing services, which involves assessing barriers such as travel time, use of needed care, the affordability of care, and supplemental insurance coverage.

Rural beneficiaries' health care needs

Rural beneficiaries appear to have somewhat greater health care needs than urban beneficiaries (Table 2-1).

- *Self-reported health status.* Overall, rural beneficiaries report lower health status than urban beneficiaries. Thirty-three percent of beneficiaries living in the most remote areas reported fair or poor health status.
- *Socioeconomic status.* Rural beneficiaries tend to have lower socioeconomic status than do urban beneficiaries, with the most rural beneficiaries reporting the lowest. With respect to income, 55 percent of unmarried beneficiaries in remote areas—but only 39 percent of unmarried urban dwellers—reported an annual income of less than \$10,000 per year. In addition, rural beneficiaries, particularly those in remote areas, are less likely to have graduated from high school.
- *Other health and mobility status indicators.* Rural beneficiaries are no more likely than urban beneficiaries to have at least one chronic condition or need help with a functional impairment.

Availability of services

Rural beneficiaries—including those living in remote rural areas—are generally satisfied with the availability of care, including specialty care. Ninety-four percent of both rural and urban beneficiaries described themselves as satisfied or very satisfied with the availability of medical care in general and 96 percent described themselves as satisfied with the availability of specialist care (Table 2-2).

² This analysis examined the data using the urban influence code (UIC) classification scheme developed by the Department of Agriculture, which segments the population into nine categories based upon their proximity to urban areas. The most remote rural areas are not adjacent to a metropolitan area and do not include a town of at least 10,000 people. See Chapter 1 for more detail.

**TABLE
2-1**

**Selected beneficiary characteristics,
by location of county, 1999**

Characteristics	Urban, in an MSA (UIC 1, 2)	Rural				
		Rural total	Adjacent to an MSA		Not adjacent to an MSA	
			Includes a town with at least 10,000 people (UIC 3, 5)	Does not include a town with at least 10,000 people (UIC 4, 6)	Includes a town with at least 10,000 people (UIC 7)	Does not include a town with at least 10,000 people (UIC 8, 9)
Age						
<65	12.1%	14.3%*	14.9%	12.9%	14.0%	16.1%
65-84	78.7	76.6*	75.7	78.3	75.5	75.4
85+	9.2	9.1*	9.3	8.8	10.4	8.5
Female	56.2	55.3	57.5	53.9	55.3	54.4
Self-reported health status						
Excellent or very good	42.6	37.9**	38.7	39.1	36.5	35.3**
Good	31.5	31.5**	31.6	30.3	34.5	31.3**
Fair or poor	25.9	30.6**	29.7	30.6	29.0	33.3**
Needs help with functional impairment	13.4	15.8	15.0	16.0	15.1	17.3
Presence of chronic conditions						
None	22.2	20.7	22.0	20.1	17.5	21.7
One or two	50.7	50.6	51.5	49.6	50.8	50.7
Three or more	27.1	28.8	26.5	30.2	31.6	27.6
Income (not married)						
Up to \$10,000	38.7	49.1**	45.7**	49.3**	47.7	55.0*
\$10,000 to \$25,000	42.3	39.3**	43.6**	36.6**	43.5	34.3*
Greater than \$25,000	18.9	11.7**	10.6**	14.1**	8.9	10.7*
Income (married)						
Up to \$10,000	8.0	11.4**	9.4*	10.5**	13.7	14.9*
\$10,000 to \$25,000	34.1	43.8**	46.0*	40.1**	43.9	47.2*
Greater than \$25,000	57.9	44.8**	44.6*	49.4**	42.3	37.8*
Highest level of education						
Less than high school	30.4	42.2**	41.0	38.8**	44.0*	49.3*
Completed high school	29.6	29.3**	29.5	30.4**	31.2*	25.8*
Beyond high school	40.0	28.5**	29.5	30.9**	24.9*	24.9*
Living arrangement						
Lives alone	31.6	31.2**	31.2	29.4	31.7	34.0
Lives with spouse	51.0	55.2**	55.0	56.6	53.5	54.3
Lives with others, not spouse	17.4	13.6**	13.8	14.0	14.8	11.7

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture), MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget).
 * Difference between urban and rural subgroups in their distribution is statistically significant at the 0.05 level. For characteristics with multiple dimensions, their difference is in the distribution across dimensions.
 ** Difference between urban and rural subgroups in their distribution is statistically significant at the 0.01 level. For characteristics with multiple dimensions, their difference is in the distribution across dimensions.

Source: MedPAC analysis of 1999 Medicare Current Beneficiary Survey Access to Care file.

The rural medical workforce differs from the urban one. Rural areas have a higher proportion of nonphysician providers and a lower proportion of physician specialists than urban areas. Rural hospitals tend to

be smaller, but there does not appear to be a shortage of beds overall. With respect to post-acute care, information on the number of rural providers is unreliable but data on use of services suggest that rural

beneficiaries use swing beds more often and rehabilitation hospitals less often than urban beneficiaries. Overall, however, they use as many post-acute services as urban beneficiaries.

**TABLE
2-2**

**Beneficiary satisfaction with care,
by location of county, 1999**

Characteristics	Rural					
	Urban, in an MSA (UIC 1, 2)	Rural total	Adjacent to an MSA		Not adjacent to an MSA	
			Includes a town with at least 10,000 people (UIC 3, 5)	Does not include a town with at least 10,000 people (UIC 4, 6)	Includes a town with at least 10,000 people (UIC 7)	Does not include a town with at least 10,000 people (UIC 8, 9)
Strongly agree/agree						
Physician checks everything	93.9%	92.6%	92.4%	92.9%	95.7%*	90.3%
Great confidence in physician	94.7	94.8	94.5	94.6	95.7	95.1
Very satisfied/satisfied						
Availability of medical care	93.6	93.6	94.3	93.0	94.9	92.9
Overall quality of care	96.0	96.0	95.4	96.3	96.4	96.2
Ease of getting to doctor	94.9	92.4	95.0	90.7**	94.6	90.3*
Costs of medical care	87.6	82.4*	83.3*	82.8**	82.7	79.6**
Specialist care	96.4	95.6	97.4	95.6	93.9	94.0

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture), MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget).

* Difference between urban and rural subgroups is statistically significant at the 0.05 level.

** Difference between urban and rural subgroups is statistically significant at the 0.01 level.

Source: MedPAC analysis of 1999 Medicare Current Beneficiary Survey Access to Care file.

A low density of providers in rural areas does not necessarily mean that beneficiaries are not receiving needed care. As discussed in Chapter 1, beneficiaries often travel to more urban areas to receive certain types of care, particularly specialized care. Travel is not always a burdensome undertaking, as some rural beneficiaries may be close to urban counties that have a full complement of services. For those who lack transportation and are in more remote areas, the sparseness of providers is a far more significant barrier to care.

- *Physicians.* About 20 percent of the U.S. population lives in rural areas, but only 11 percent of physicians practice in rural communities (AMA 1999). Primary care physicians are more likely to practice in rural areas

than specialists: In 1999, 15 percent of primary care physicians were in rural areas (HRSA 2001), but only 10-12 percent of specialists were in rural areas (AMA 1999). Data on the ratio of generalists to residents also reflect the disparity between rural and urban areas, although the value of this comparison is questionable given concerns about physician oversupply in urban areas.³

- *Nurse practitioners and physician assistants.* 20 percent of nurse practitioners and 23 percent of physician assistants practice in rural areas. Together they account for 23 percent of non-metropolitan primary care practitioners, compared with 16 percent in metropolitan areas (HRSA 2001).

- *Hospitals.* In 1998, 20 percent of all hospital beds were in rural hospitals (Ricketts and Heaphy 1999), which is consistent with the percent of the population living in rural areas. While there are fewer rural hospitals today than 10 years ago, the impact of hospital closures varied by community. In addition, more than 350 critical access hospitals have opened, either as new entities or converted former full-service hospitals, to meet the urgent health care needs of rural beneficiaries.

- *Rural health clinics.* The number of rural health clinics has grown from 483 in 1989 to 3,749 in 1998 (Farley et al. 2001).⁴ Some policy analysts have found that some of this growth is the result of physician practices

3 In 1998, urban counties with populations of more than 1,000,000 had an average of 91 generalist physicians per 100,000 residents and urban counties with populations under 1,000,000 had an average of 75. In contrast, the average generalist-physician-to-population ratio in rural counties ranged from a low of 39:100,000 in those categorized by UICs 4 and 9 to a high of 64:100,000 ratio in UIC 7 (Hart 2000).

4 This study counted the number of clinics operating at any time during 1998. This results in a larger estimate than counting the number of clinics operating at a single point in time.

redefining themselves as rural health clinics (GAO 1996). The growth of new clinics has slowed more recently with payment changes enacted in the Balanced Budget Act of 1997 (BBA).

- *Home health.* Counting the number of home health agencies in rural areas is not particularly meaningful, given that the data reflect neither the service areas of agencies (some are statewide) nor branches of parent agencies that may be located in rural areas. Data on the use of services suggest that rural beneficiaries use home health care less than urban beneficiaries do, but rural beneficiaries that do use home health receive more visits than their urban counterparts. However, rural beneficiaries receive more home health aide visits, while urban beneficiaries receive more skilled nursing and therapy visits (Sutton 1999).
- *Skilled nursing facility and other post-acute care.* Because of fluctuation in the number of swing beds used for skilled nursing care and the number of Medicare-certified skilled nursing facility (SNF) beds, an accurate count of SNF beds is not possible. Use rate data are more helpful in assessing availability of post-acute care. Overall, rural beneficiaries use the same amount of SNF care (counting swing beds) but less specialty care from long-term care and rehabilitation hospitals, which tend to be located in more urban areas. Many rural beneficiaries travel to other rural areas or metropolitan areas for their SNF care, but a greater percentage stay in their own rural area for their SNF care.

Accessibility of care

In general, rural and urban beneficiaries are satisfied with their access to care, although beneficiaries in remote rural areas report somewhat greater difficulty.

Data on other more objective measures—such as travel time to providers, use of necessary care, out-of-pocket costs, and supplemental insurance—round out this picture of access and raise some concerns.

With respect to beneficiaries' assessment of their access to care (Tables 2-2 and 2-3):

- Rural beneficiaries were somewhat less likely than urban beneficiaries to report trouble getting care in the past year. Those who live in rural areas containing towns of at least 10,000 people were half as likely as their urban counterparts to report having had such trouble.
- Rural beneficiaries are as likely as urban beneficiaries to be satisfied or very satisfied with the ease of getting to the doctor. Although 90 percent of rural beneficiaries in remote areas are satisfied with their ease of getting to a doctor, they are less satisfied than their other rural and urban counterparts.
- Rural and urban beneficiaries appear similar in the percentage who lacked a physician office visit during the course of the year. More beneficiaries in the most rural areas reported no physician visit (31 percent compared with 18 percent of urban beneficiaries), but part of this difference may reflect greater use of rural health clinics, which may serve as a substitute for physician office visits.

Travel time to providers The difference in travel times to providers between rural and urban beneficiaries is not as great as might be expected. About 8 percent of rural beneficiaries and less than 4 percent of urban ones report that they travel an hour or more to get to their doctors. Seventy-two percent of rural beneficiaries and 81 percent of urban ones have a travel time of under 30 minutes (Table 2-3).

The longer travel times for rural beneficiaries are most troubling when considering their ability to receive timely emergency care. The quality of emergency care is directly related to speed of delivery. Research has shown that pre-hospital times averaged two times longer in rural than urban areas (Esposito et al. 1995) and that rural patients with severe injuries were seven times more likely to die before arrival if the emergency response time was greater than 30 minutes (Grossman et al. 1997). Patients who die at the scene or within 30 days are more likely to have had slower emergency response times and pre-hospital times than those that survive (Morrisey et al. 1995).⁵

Use of necessary care MedPAC found that rural beneficiaries were nearly as likely as their urban counterparts to receive necessary care. Direct Research LLC analyzed claims data to determine whether beneficiaries were receiving the care they need, such as a physician visit within four weeks of a heart attack (see text box, p. 33). Findings indicate that only those beneficiaries living in the most rural areas were somewhat less likely to get needed care. When comparing rural and urban beneficiaries' care for 46 clinical indicators, researchers found that beneficiaries in the most rural areas received needed care about 71 percent of the time, on average, compared with 73 percent of the time for the average beneficiary (see appendix A for a list of clinical indicators). These findings are reassuring in that potential obstacles to seeking care, such as a greater sense of self-sufficiency and less aggressive referral patterns in rural areas, do not result in lower use of services among rural beneficiaries compared to urban beneficiaries.⁶ These findings also suggest that rural beneficiaries' lower self-reported health status, in relation to urban beneficiaries, may also reflect environmental and lifestyle factors. However, these findings do raise the

5 In this study, the mean response and pre-hospital times of patients who died were 12 and 63 minutes, respectively, compared with 8 and 39 minutes for patients who survived.

6 Previous research has suggested less aggressive referral patterns in rural areas. One study of care for elderly patients with acute myocardial infarction showed that patients who lived relatively near to a catheterization hospital were much more likely to be initially admitted to such a hospital and much more likely to undergo a catheterization within seven days (McClellan et al. 1994).

**TABLE
2-3**

Beneficiary access to care, by location of county, 1999

Characteristics	Rural					
	Urban, in an MSA (UIC 1, 2)	Rural total	Adjacent to an MSA		Not adjacent to an MSA	
			Includes a town with at least 10,000 people (UIC 3, 5)	Does not include a town with at least 10,000 people (UIC 4, 6)	Includes a town with at least 10,000 people (UIC 7)	Does not include a town with at least 10,000 people (UIC 8, 9)
Had trouble getting care	4.0%	3.3%**	2.2%**	4.1%	2.0%**	4.1%
Delayed care due to cost	6.6	9.9	8.7	10.5**	11.3**	9.8**
No office visit this year ¹	18.3	20.2	16.1	20.5	12.4**	31.0**
Usual source of care						
None	8.5	9.3**	7.2*	8.6**	11.7	12.4*
Doctor's office or home	70.0	72.8**	69.5*	73.5**	80.7	71.2*
HMO	8.7	1.7**	0.3*	4.2**	0.0	0.4*
Other sites	12.9	16.2**	23.0*	13.7**	7.5	15.9*
Travel time						
0-<15 minutes	38.3	36.8**	36.5	31.8**	40.8	44.2*
15-<30 minutes	42.4	35.0**	39.7	33.4**	35.5	30.0*
30-<45 minutes	12.8	14.9**	14.7	18.5**	10.8	10.8*
45-<60 minutes	3.0	5.3**	4.4	7.2**	3.6	4.0*
>=60 minutes	3.6	8.1**	4.6	9.1**	9.3	10.9*
Mode of transportation to doctor						
Walking	3.1	2.1**	1.1*	3.1**	0.8	2.3
Driving	64.4	67.0**	69.0*	67.7**	67.1	61.9
Being driven	25.9	29.6**	28.3*	28.2**	30.1	33.7
Doctor comes to home	0.2	0.1**	0.1*	0.1**	0.0	0.0
Public transit	4.2	0.7**	0.5*	0.4**	1.2	1.1
Other	2.2	0.7**	0.9*	0.4**	0.7	1.0

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture), MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget), HMO (health maintenance organization).
¹Office visits only pertain to beneficiaries enrolled in traditional Medicare, and not Medicare+Choice. The Medicare Current Beneficiary Survey bases office visits on claims data, and providers do not submit claims for Medicare+Choice enrollees.
 * Difference between urban and rural subgroups in their distribution is statistically significant at the 0.05 level. For characteristics with multiple dimensions, their difference is in the distribution across dimensions.
 ** Difference between urban and rural subgroups in their distribution is statistically significant at the 0.01 level. For characteristics with multiple dimensions, their difference is in the distribution across dimensions.

Source: MedPAC analysis of 1999 Medicare Current Beneficiary Survey Access to Care file.

concern that many rural and urban beneficiaries are not receiving the care they need.

Remote rural beneficiaries were somewhat less likely to receive three types of care: electrocardiograms (except during an emergency room visit), timely follow-up after hospital discharge, and mammograms. In addition, rates of some types of potentially avoidable care (multiple emergency room visits for

angina, admissions for individuals with known pulmonary disease) were higher in remote areas. Rural beneficiaries did better than their urban counterparts by some measures, such as in the percentage who obtained recommended services following initial diagnosis of anemia (Hogan 2001).

Beneficiaries living in the most remote rural areas that are also federally designated Health Professional Shortage Areas (HPSAs) appear to be particularly vulnerable. For example, beneficiaries in

urban influence codes (UICs) 8 and 9, which were also HPSAs, received needed care about 67 percent and 68 percent of the time, respectively, as calculated using the index measure. However, one important limitation of this analysis is the potential for beneficiaries residing in rural HPSAs to have obtained some of their outpatient care in a rural health clinic. Such care would not be fully captured in these measures because approximately half of rural health clinic claims lack procedure codes.⁷

⁷ Visits to rural health clinics were captured for purposes of measuring the extent to which beneficiaries had at least one annual contact with the health system. However, specific services furnished (such as retinal eye exams for diabetics) were not fully captured on claims.

**TABLE
2-4**

Beneficiary insurance status, by location of county, 1999

Characteristics	Urban, in an MSA (UIC 1, 2)	Rural				
		Rural total	Adjacent to an MSA		Not adjacent to an MSA	
			Includes a town with at least 10,000 people (UIC 3, 5)	Does not include a town with at least 10,000 people (UIC 4, 6)	Includes a town with at least 10,000 people (UIC 7)	Does not include a town with at least 10,000 people (UIC 8, 9)
Insurance (traditional Medicare only)						
Private	74.1%	71.2%	73.0%	73.3%	67.0%	67.5%
Public	12.1	12.2	10.7	11.3	13.4	15.2
Medicare only	13.8	16.6	16.4	15.4	19.6	17.3
Medicare+Choice enrollment	24.8	4.7*	3.3**	8.5**	1.7**	1.7**
Medicare buy-in assistance						
QMB	5.6	6.3	5.9	5.5	7.0	8.1
SLMB	1.0	1.6	1.6	1.4	1.8	1.9
Medicaid	4.7	6.1	5.1	5.9	7.2	7.1
No assistance	88.7	86.0	87.4	87.3	84.0	82.9
Medicare enrollment						
Parts A and B	94.9	96.8**	97.2**	96.3	98.4*	96.4**
Part A only	3.9	2.8**	2.6**	3.1	1.5*	3.5**
Part B only	1.2	0.3**	0.3**	0.6	0.1*	0.1**

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture), MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget), QMB (qualified Medicare beneficiary), SLMB (specified low-income Medicare beneficiary).

* Difference between urban and rural subgroups is statistically significant at the 0.05 level. For characteristics with multiple dimensions, their difference is in the distribution across dimensions.

** Difference between urban and rural subgroups is statistically significant at the 0.01 level. For characteristics with multiple dimensions, their difference is in the distribution across dimensions.

Source: MedPAC analysis of 1999 Medicare Current Beneficiary Survey Access to Care file.

Out-of-pocket costs The greatest barrier to care for rural beneficiaries appears to be the cost of care. Beneficiaries in most types of rural areas were found to be significantly more likely (10-11 percent) than their urban counterparts (7 percent) to say that they delayed getting care in the past year because of costs (Table 2-3). In addition, rural beneficiaries (82 percent) were less likely than urban ones (88 percent) to say that they were satisfied or very satisfied with the cost of medical care. According to a forthcoming AARP Public Policy Institute analysis of 1995 MCBS cost and use data projected to 2000, rural beneficiaries spent an annual average of \$2,700 (23 percent of their income) on health care services. In contrast, urban beneficiaries spent \$2,540 (18 percent of their income) (Caplan and Gross, in prep.).

Rural and urban beneficiaries may differ in their abilities to pay health care expenses out of pocket, but the difference is difficult to determine, as is the impact any such difference may have on access. Although rural beneficiaries have lower incomes, the average cost of living is often lower in rural areas. No good adjusters have been identified for evaluating the extent of real differences in buying power. Some costs associated with health care delivery, such as the Part A and Part B deductible amounts, are fixed nationally for all beneficiaries; other costs, such as Medigap premiums, vary locally.

Fixed deductibles and premiums are likely to affect rural beneficiaries more than urban ones. Furthermore, if rural beneficiaries have less comprehensive supplemental insurance coverage than

their urban counterparts do, out-of-pocket costs may present greater barriers to obtaining services. Possible policies to address this problem include a flat reduction in premiums or deductibles for rural beneficiaries or linking cost-sharing to measures of local Medicare spending or beneficiary income. MedPAC will continue to study out-of-pocket spending differences between urban and rural beneficiaries and model effects of introducing variable cost-sharing.

Supplemental insurance Directly related to rural beneficiaries' concerns about the cost of care is the lower likelihood that they have supplemental insurance coverage for Medicare's cost-sharing requirements and services such as prescription drugs not covered by Medicare. The absence of supplemental

coverage is correlated with an increased likelihood in delaying care and trouble getting care (Table 2-4).⁸

Seventeen percent of fee-for-service rural beneficiaries have no supplemental coverage, compared with 14 percent of urban beneficiaries.⁹ Although this discrepancy may be in part related to income, it is also directly related to fewer Medicare+Choice plans being available to rural beneficiaries. These plans often offer supplemental coverage. Only 5 percent of rural beneficiaries are enrolled in Medicare+Choice plans, compared with 25 percent of urban beneficiaries (see Chapter 7 for further discussion). Beneficiaries may also have private supplemental insurance, either through a Medigap plan or an employer-sponsored plan.

RECOMMENDATION

The Secretary should identify strategies to increase rural beneficiaries' participation in government programs that cover Medicare premiums and/or deductibles and coinsurance.

Because rural beneficiaries have lower incomes and are less likely to have Medigap or employer-sponsored coverage, they have greater need for assistance to defray Medicare's cost-sharing requirements. These requirements have risen as a result of the design of the newly implemented outpatient prospective payment system. Accordingly, the Commission recommends that the Secretary identify strategies to increase rural beneficiaries' participation in the government cost-sharing assistance programs. The government programs that cover Medicare premiums and/or cost-sharing include Medicaid, the qualified Medicare beneficiary program and the specified low-income beneficiary program.

Using inpatient and outpatient claims to measure use of necessary care

Medicare claims data for 1998 and 1999 were used to measure whether beneficiaries received 40 types of necessary care as well as 6 indicators of potentially avoidable emergency or urgent care. "Necessary care" is defined as a service, such as an annual eye exam for diabetics, for which expert clinicians judge that benefits substantially outweigh risks and for which failure to provide it would be improper care. Indicators were calculated for a sample of 240,000 elderly Medicare fee-for-service beneficiaries, grouped by urban influence code of their county of residence.

The indicators were selected by a multispecialty physician panel, but should be interpreted with caution. Physicians may disagree about whether a particular service is

necessary. Also, the indicators reflect the inherent uncertainty of claims data, which may not identify each service each time it is provided. Finally, no specific cause should be inferred when beneficiaries fail to obtain needed care. Needed services may not be provided for a number of reasons, including problems accessing the health care system, failure of providers to perform or recommend services, and/or failure of beneficiaries to follow provider recommendations to obtain care.

The indicators were developed as part of the Access to Care for the Elderly Project (ACE-PRO) by RAND. ACE-PRO sought measures of care that were both clinically meaningful and could feasibly be calculated from claims and administrative data. (For more information on this project, see Appendix A and Asch et al. 2000). ■

Programs to address rural access problems

Many conditions in rural areas present challenges to health care providers, including low service volume, longer travel times, difficulty in attracting providers, and greater dependency on Medicare patients and payments. In acknowledgment of these challenges and to increase beneficiary access to health services, the Congress has enacted a variety of programs to help rural facilities and health care professionals. For other services, such as ambulance and home health care, no special programs exist, but adjustments are made in the payment method to recognize the nature of the rural delivery system (see text box, p. 34, for a

discussion of the types of rural adjustments for ambulance services). Major programs are discussed below, with a focus on the MIP. In addition, this chapter discusses Medicare's policy on telemedicine and identifies issues relating to its expansion.

Policymakers need to assess the need for any changes in these programs, given the Commission's reassuring findings on access to care as well as challenges to delivering care in rural areas (see Chapter 4). The findings on access are not only limited by the data but also are colored by the effects of existing private initiatives, public policies, and programs that have been implemented in an effort to address factors that may predispose rural Medicare beneficiaries—and rural

⁸ In 1998, 7 percent of beneficiaries in the traditional Medicare program who lacked supplemental coverage had trouble obtaining care in the past year, compared with 2 percent of those with private supplemental coverage (MedPAC 2000). In addition, 21 percent of those without supplemental coverage said they had delayed seeking care due to cost in the past year, compared with 4 percent of those privately covered. Nearly a quarter of those without supplemental coverage said they had no usual source of care (compared with 7 percent of those privately covered) and 43 percent had no physician office visit in the past year (compared with 16 percent of those privately covered).

⁹ In addition to the chi-square test analysis presented in Table 2-4, MedPAC performed a t-test analysis, which showed that the difference between rural and urban beneficiaries' likelihood to have supplemental insurance was statistically significant at the .05 level.

Payment policy issues for ambulance services in rural areas

A major concern of the Congress and Health Care Financing Administration (HCFA) in formulating policy on ambulance payment has been to take into account the unique concerns of rural areas. Ambulance suppliers serving beneficiaries in rural areas provide fewer services per year and make longer trips than urban suppliers, but have similar fixed costs to maintain ambulance capacity for emergency use and train personnel to respond to the full range of emergencies.

Medicare covers and pays for ambulance services if other means of transportation are contraindicated by the beneficiary's health condition. Services are paid under Part B with 20 percent coinsurance. Medicare currently pays for ambulance services provided by facilities on a cost basis and by independent, freestanding suppliers on a reasonable charge basis. The Balanced Budget Act of 1997 mandated the development of a fee schedule for ambulance services, but it has yet to be implemented as HCFA tries to resolve some outstanding policy issues.

Under the proposed rule, payment for both ground and air services is comprised of two components. First, ground and air services are paid a base rate adjusted for geographic cost differences (using one of the measures used to adjust physician payments). For air ambulance services only, this base payment is subject to a 50 percent add-on for beneficiaries picked up in non-metropolitan areas. The second component is a mileage payment. For rural ground services, a 50 percent add-on payment is applied to the first 17 miles traveled; for air services, the add-on is applied to all miles traveled.

These adjustments may be inadequate. Applying the rural adjustment for all services to beneficiaries in non-metropolitan areas will not appropriately target payments to providers in isolated areas who typically have very low volumes. Also, the lack of a rural adjustment to the base rate for ground ambulance services may not adequately compensate these providers for their fixed costs. ■

above-average costs in a base year for the mix of patients it serves. In 2000, 640 hospitals were designated sole community hospitals.

Rural health clinics

The rural health clinic (RHC) program was established in 1977 to encourage and stabilize the provision of primary care services in underserved rural areas through the use of physicians, physician assistants, nurse practitioners and certified nurse midwives. RHCs must be located in communities that are both rural (as defined by the Bureau of the Census) and underserved (a federally designated HPSA or medically underserved area, or an area designated by the state's governor as underserved).

To operate as an RHC, certain staffing requirements and levels of service must be maintained. A physician assistant, a nurse practitioner, or a certified nurse midwife must be on site and available to see patients 50 percent of the time the clinic is open. Nonphysician practitioners must be supervised by a physician. Furthermore, RHCs must directly provide diagnostic and therapeutic services commonly furnished in a physician's office, as well as basic laboratory services and other tests. They must also make emergency services available.

RHCs are paid using an all-inclusive rate. Most of them are subject to a per-visit cap (\$63.14 in 2001). Because of this payment method, RHC claims generally do not specify the services provided, making it difficult to assess beneficiary use.¹⁰

Medicare incentive payment program

Created in 1989, the MIP program pays bonus payments to physicians who practice in HPSAs in an effort to entice more physicians to those areas. Although the effectiveness of the program is difficult to ascertain, a recent decline in the bonus payments to physicians is cause for concern. Several aspects of program design have been identified as compromising its effectiveness.¹¹

residents generally—to problems with access to health care. Failure to find access problems might reflect the success of such efforts or suggest a lack of underlying need for them.

Facility-based programs

Congress created two programs to improve beneficiary access to hospital services in rural areas (see Chapter 4 for a discussion of related payment issues).

- *Critical access hospitals.* This program is intended to ensure that beneficiaries in isolated rural communities have access to emergency room services and limited inpatient services. It is designed to provide an adequate financial base for facilities located in rural areas that cannot support a full-service hospital.
- *Sole community hospitals.* The intent of this policy is to maintain access to needed health services for beneficiaries in isolated communities. This policy provides higher payments to hospitals that are farther than 35 miles from the nearest hospital and meet other criteria designed to establish that they are the community's sole source of care. To qualify, a hospital also must have

10 This problem confounds some of the claims research assessing propensity to seek care, as noted earlier in this chapter.

11 RAND is expected to publish an evaluation of the MIP program later in 2001.

- *MIP bonus payments may be insufficient to attract physicians.* The bonus payments, calculated as 10 percent of the Medicare program payment for physician services (excluding beneficiary coinsurance), may be too small to have a significant influence on recruitment or retention of primary care physicians (OIG 1994a, GAO 1999). In 1996, 75 percent of, or about 18,700, participating rural physicians received less than \$1,520 in bonus payments for the year. The low level of payments may be attributable in part to carriers being required to review claims of physicians who receive the largest bonus payments (HCFA 1999). This policy may discourage physicians from applying.
- *MIP payments may be inappropriately targeted for several reasons.* First, nurse practitioners and physician assistants, who provide a significant percent of primary care in rural areas, are not eligible for bonus payments. The MIP program may be more effective in improving access to primary care if these providers, in addition to physicians, were eligible for payments.

Second, the HPSA designation system may overestimate the need for primary care providers in some areas (GAO 1995). The HPSA designation is based only on the ratio of the population to primary care physicians (such as general and family medicine practitioners). Specialists, international medical graduates with J-1 visas, National Health Service Corps workers and nonphysician providers who may render primary care services are not included in the calculation of the ratio. As part of a larger effort to refine the HPSA definition, the Health Resources and Services Administration recently proposed including nonphysician providers and some previously excluded categories of physicians in the calculation of the ratio. This rule was withdrawn but may be reissued later this year.

Third, although specialists are not counted for the purposes of HPSA designation, they are eligible for bonus payments. Such eligibility may be appropriate because specialists provide primary care, but excluding them from the count for HPSA designation means that an area could qualify for HPSA status even if it had an abundance of specialists.

Finally, although HPSA designations are required to be updated annually, only about one-third of the HPSAs are actually reviewed each year (Thornburg 2001). Therefore, some existing HPSAs may no longer meet the critical ratio threshold.

- *Instability of the HPSA designation.* The inherent instability of the HPSA designation may limit the effectiveness of the MIP program for recruitment and retention of physicians in underserved areas (OIG 1994b, PPRC 1992). When shortage areas are periodically reassessed as required by law, an addition of even one physician may reduce the population-to-physician ratio enough to disqualify an area. Although withdrawal of a designation could be a legitimate indication that an area is self-sufficient, it may be that retention of physicians in that community is dependent on the HPSA bonus payment. One option to address this problem is to provide bonus payments for an additional three years in areas in which HPSA status is withdrawn because of an increase in physician supply.

Medicare payment for telemedicine services

Telemedicine, the use of electronic communication and information technologies to provide or support clinical care at a distance, offers the potential to improve access to care in rural areas.¹² Although telemedicine has been supported by a number of federal and private grant initiatives, many observers feel that widespread dissemination for patient care

has been hampered by a lack of reimbursement, provider and patient acceptance, and infrastructure; the need for physicians using telemedicine across state lines to obtain medical licenses in multiple states; and limited evidence of clinical efficacy. Evidence on telemedicine's efficacy is limited because research is often specific to the application of a particular technology, such as sonograms, and it is difficult to get adequate sample size due to sparse rural populations.

Although the Commission appreciates telemedicine's potential to improve rural beneficiaries' access to care, we believe that the effects of recent legislative changes and demonstration activity warrant review to determine if and which additional changes in Medicare policy are needed. To assist policymakers in evaluating whether change is needed, this discussion provides an overview of Medicare payment policy and identifies several issues policymakers may want to consider.

Medicare payment policy

Although Medicare payment for telemedicine services has been limited in the past, recent changes have expanded coverage. Before the BBA, most Medicare carriers paid the same fees for certain services, such as the reading of X-rays or pathology slides, regardless of whether telecommunications services were used. In addition, Medicare has traditionally provided payment for several services that expressly involve telemetry, including the remote, real-time monitoring of pacemakers and the reading of electroencephalograms and electrocardiograms.

The BBA allowed Medicare to pay for interactive, real-time telemedicine consultations among the patient and the referring and consulting clinicians for the first time. However, payment for teleconsultation services applied only to services involving the use of both interactive audio and video that were provided to beneficiaries living in rural

¹² There is no consensus on a single definition of telemedicine. Telemedicine and telehealth are sometimes referred to interchangeably.

HPSAs. Payment was split between the consulting and referring clinicians in a 75-25 percent ratio, and there was no separate facility fee.

The Medicare, Medicaid, and SCHIP Beneficiary Improvement and Protection Act of 2000 (BIPA) eliminated many of the restrictions imposed by the BBA. It allows Medicare to pay for telemedicine consultations in rural areas regardless of HPSA designation, eliminates the fee-splitting requirement so the consultant receives the full Medicare payment, provides a \$20 facility fee to be annually updated after 2002, and permits the use of telemedicine in the delivery of home health care. The legislation also allows Medicare to pay for telemedicine consultations provided through federally funded projects in Alaska and Hawaii that use store-and-forward technologies.

Does Medicare policy need to be changed?

If policymakers are interested in expanding the use of telemedicine to improve access to care, two types of coverage expansions could be explored: coverage of asynchronous store-and-forward technology for telemedicine consultations and increased discretion to substitute some in-person home health visits with telemedicine. In asynchronous store-and-forward technology, a diagnostic test is performed on the patient

and then sent electronically to the consulting physician for review at a later time. Under either of these policy options, policymakers must be careful that telemedicine is appropriately used as a substitute for traditional in-person care or for necessary care that would not have otherwise been received in a timely manner.¹³

Expanded coverage for store-and-forward technology Asynchronous store-and-forward services surmount the logistical and financial constraints associated with the delivery of interactive, real-time telemedicine services in rural areas. These constraints include costs associated with the use of high bandwidth, interactive technologies, and coordination of physicians' schedules. One study found that it could take up to 25 phone calls to set up a meeting (IOM 1996). Store-and-forward telemedicine services use lower bandwidth and require less logistical coordination between clinicians, compared with real-time interactive telemedicine services.

One concern about covering asynchronous telemedicine is the potential for overuse. The Health Care Financing Administration has noted that coverage of store-and-forward teleconsultations could potentially result in a substantial increase in the number of teleconsultations without any relation to medical necessity

(Berenson 2000). The infrastructure barriers that have so far precluded widespread dissemination of telemedicine may temper this potential at least initially, however. A second concern is that—with the exception of teledermatology—available efficacy data are insufficient to determine whether expanding Medicare's coverage for teleconsultations is clinically warranted (AHRQ 2001). There are cost implications related to limitations in the data on clinical efficacy because clinicians may be more inclined to verify a telemedicine diagnosis with an in-person diagnosis if the accuracy of the telemedicine diagnosis is uncertain. On the other hand, cost may not be a concern if patients are faced with a choice of receiving telemedicine services or receiving no or inadequate care.

Expanded coverage for telemedicine services used by home health providers The BIPA prohibited the substitution of telemedicine services for in-person visits under the new home health prospective payment system. Although substitution of telemedicine home health care for in-person visits ordered by a physician is often not appropriate, it may be warranted under certain circumstances. Preliminary evidence suggests that the use of telemedicine in combination with in-person home health visits may improve health outcomes and enhance quality of care (Burgiss 2000, Johnson et al. 2000). ■

13 For instance, the Kentucky legislature explicitly excluded e-mails, faxes, and telephone calls from being considered "telemedicine."

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