CHAPTER 8

Mandated report: Geographic adjustment of payments for the work of physicians and other health professionals

RECOMMENDATION

8 Medicare payments for work under the fee schedule for physicians and other health professionals should be geographically adjusted. The adjustment should reflect geographic differences across labor markets for physicians and other health professionals. The Congress should allow the geographic practice cost index (GPCI) floor to expire per current law and, because of uncertainty in the data, should adjust payments for the work of physicians and other health professionals only by the current one-quarter GPCI and direct the Secretary to develop an adjuster to replace it.

COMMISSIONER VOTES: YES 15 • NO 2 • NOT VOTING 0 • ABSENT 0

CHAPTER 8

Mandated report: Geographic adjustment of payments for the work of physicians and other health professionals

Chapter summary

The Middle Class Tax Relief and Job Creation Act of 2012 mandated that the Commission consider whether Medicare's fee schedule for physicians and other health professionals should include an adjustment to reflect geographic variation in the cost of these professionals' labor. The fee schedule includes geographic practice cost indexes (GPCIs) that adjust payment rates for costs such as rent and office staff wages that vary depending on the geographic area in which a service is furnished. However, arguments for and against one of the GPCIs—the GPCI for the work effort of the physician or other health professional—have persisted since the development of the fee schedule in the 1980s. The Congress has directed the Commission to consider whether there should be a work GPCI and, if so, what the level of the GPCI should be and where it should be applied. The Commission must also assess the impact of the current work GPCI, including its effect on access to care. Because a statutory provision of the GPCI was scheduled to expire at the end of 2012, the Commission issued a recommendation to the Congress in November 2012. The information and recommendation in this report are based on available information and decisions made at that time.

The work GPCI is one of three geographic payment indexes. The other two are for practice expense and professional liability insurance. Together, they adjust payments for resource costs that are beyond providers' control and that vary geographically.

In this chapter

The chief argument made in favor of a work GPCI is that the cost of living varies across areas. If payment rates for fee schedule services are not adjusted with a work GPCI, the supply of physicians and other health professionals might not be sufficient in high-cost areas and beneficiary access to care in those areas could suffer.

The chief argument against a work GPCI is one of equity. That is, the work of physicians and other health professionals is the same in all areas, so why should that work be paid for differently across areas? A related argument against the GPCI is that practices recruiting physicians and other health professionals compete in a labor market that is national, so payment rates should be uniform. Still others cite the extra demands or costs of rural practice, such as greater on-call time and travel, and assert that physicians and other health professionals must be paid more to locate in rural areas. By contrast, the work GPCI tends to lower payment rates in rural areas instead of raising them.

Another argument made against the work GPCI is that the data used to construct it are flawed. The GPCI is based on earnings data for professionals in certain reference occupations, such as architects and engineers. Such data are used instead of data on physicians' earnings themselves because of the conceptual and technical difficulties involved in directly observing earnings. Conceptually, differences across practices in return on investment (profitability of practices), geographic variation in the volume of services provided under fee-for-service (FFS) payments, and the market concentration of insurers or providers limit the usefulness of data on physician earnings for creating an index. Technically, available data are capped at some maximum earnings value, include data on the earnings of medical residents, or often have very small sample sizes—all of which limit their usefulness. In addition, if data on the earnings of physicians and other health professionals were used to construct the work GPCI, there would be a circular relationship between the work GPCI and the data used to construct it. Further, some who oppose the work GPCI say that the labor market for physicians and other health professionals is different from that for professionals in the reference occupations, which makes the GPCI inaccurate.

Concerns about the work GPCI have led the Congress to put constraints on it. First, the GPCI is limited to one-quarter of the relative cost of professional work effort in a locality compared with the national average, which means that three-quarters of the payment for work effort is not adjusted by the GPCI. Second, the GPCI has a temporary floor that suspends it in localities with costs below the national average. The floor was to have expired at the end of 2012. It is now due to expire at the end of 2013.

To evaluate the work GPCI, we considered its effect on program spending and quality of care, as well as its potential to improve beneficiaries' access to care. We also considered whether any change in the GPCI had the potential to advance payment reform—that is, move Medicare payment policy away from FFS payment and encourage a more integrated delivery system.

The Commission's findings are, first, that there is evidence of the need for some level of geographic adjustment of fee schedule payments for professional work. Cost of living varies geographically. Earnings vary geographically for the professionals in the work GPCI's reference occupations. To the extent that we can measure geographic variation in physicians' earnings, those earnings vary.

However, the current GPCI is flawed in concept and implementation. Conceptually, it is based on the earnings of professionals in the reference occupations, but the labor market for those professionals may not resemble the labor market for physicians and other health professionals. Implementation of the work GPCI is flawed because there appear to be no sources of data on the earnings of physicians and other professionals of sufficient quality to validate the GPCI.

While the work GPCI is flawed, it is not so flawed as to warrant an immediate change in current law. Under current law, one-quarter of the GPCI is applied to all localities and the GPCI floor expires. There are no data to establish a new index in the short run. We are unable to determine whether the work GPCI has an effect on the quality of care, but there is no evidence that the GPCI affects access. Moreover, any access concerns are better addressed through other targeted policies, such as the health professional shortage area bonus and the primary care bonus. Extension of the GPCI floor would increase Medicare spending. Other departures from current law would redistribute payments among localities without evidence of an effect on access or equity.

The Congress has recognized the limitations and measurement difficulties of the work GPCI. Therefore, in light of the need for some geographic adjustment, but recognizing that there are insufficient data in the short run to revise the work GPCI, the Commission recommends that Medicare payments for the work effort of physicians and other health professionals be geographically adjusted. The adjustment should reflect geographic differences in labor cost per unit of output across the markets for physicians and other health professionals. Further, the Congress should allow the GPCI floor to expire as current law requires, adjust payments for the work of physicians and other health professionals only by the current one-quarter GPCI (because of uncertainty in the data), and direct the Secretary to develop an adjuster to replace it. ■

Section 3004 of the Middle Class Tax Relief and Job Creation Act of 2012

(b) Report.—Not later than June 15, 2013, the Medicare Payment Advisory Commission shall submit to the Committees on Ways and Means and Energy and Commerce of the House of Representatives and the Committee on Finance of the Senate a report that assesses whether any adjustment under section 1848 of the Social Security Act to distinguish the difference in work effort by geographic area is appropriate and, if so, what that level should be and where it should be applied. The report shall also assess the impact of the work geographic adjustment under such section, including the extent to which the floor on such adjustment impacts access to care. ■

Introduction

Section 3004 of the Middle Class Tax Relief and Job Creation Act of 2012 required the Commission to consider whether Medicare's physician fee schedule should have a payment adjustment for the work effort of physicians and other health professionals and, if so, what the level of the geographic practice cost index (GPCI) should be and where it should be applied (see text box). The Commission was also directed to assess the impact of the current work GPCI, including its effect on access to care. Because a statutory provision on the GPCI was scheduled to expire at the end of 2012, the Commission issued a recommendation to the Congress in November 2012. The recommendation and supporting evidence presented here are based on available information and decisions made at that time.

To evaluate the work GPCI, we considered its effect on program spending and quality of care as well as its potential to improve beneficiaries' access to care. We also considered whether any change in the GPCI had the potential to advance payment reform—that is, move Medicare payment policy away from fee-for-service (FFS) payment and encourage a more integrated delivery system.

Physician fee schedule's three GPCIs

The current adjustment for work effort is one of the fee schedule's three GPCIs. In addition to the work GPCI, there are GPCIs for practice expense and professional liability insurance (PLI). The practice expense GPCI is an adjustment for costs such as rent and staff wages that are incurred in operating a medical practice and known to vary geographically. The PLI GPCI is an adjustment for the premiums that physicians and other health professionals pay for that type of insurance. The GPCIs scale base payments up or down depending on whether an area's input prices are higher or lower than the national average (Table 8-1).[1]

The geographic payment adjusters in Medicare's FFS payment systems are intended to adjust payments for costs that are beyond providers' control. In the late 1980s, a contractor working for CMS identified the costs relevant to the work GPCI as an area's cost of living adjusted for the area's amenities (Pope et al. 1989). Thus, the GPCI would account for housing, food, and other costs specific to an area but would also be influenced by the area's amenities. Amenities could include professional factors, such as access to quality colleagues, and personal factors, such as availability of good schools (Zuckerman and Maxwell 2004).

TABLE 8–1 **Example: Geographic adjustment of RVUs with GPCIs**

Service: Midlevel office visit, established patient
Locality: Los Angeles, 2012

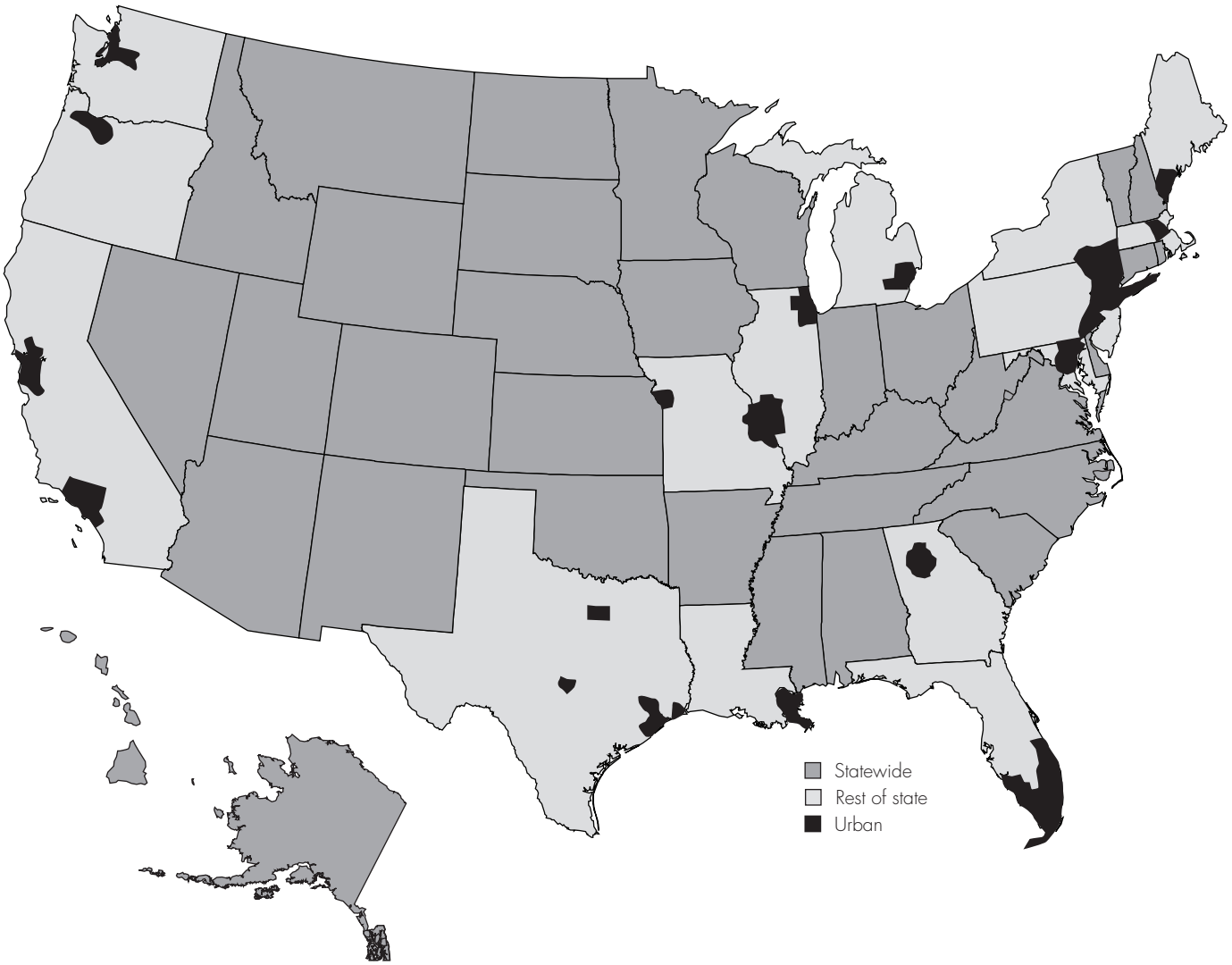
Input	Unadjusted RVU		GPCI		Adjusted RVU
Physician work	0.97	×	1.04	=	1.00
Practice expense	1.03	×	1.15	=	1.19
PLI	0.07	×	0.64	=	0.04
	2.07				2.23
			Conversion factor		× 34.04
			Payment rate		$75.91

Note: RVU (relative value unit), GPCI (geographic practice cost index), PLI (professional liability insurance). Results calculated with formulas shown may not equal amounts in table due to rounding.

Source: CMS GPCI file for 2012 (released before extension of temporary floor) and RVU file.

FIGURE 8–1

GPCI payment localities under the Medicare fee schedule for physicians and other health professionals, 2012



Note: GPCI (geographic practice cost index). Some urban areas include more than one locality.

Source: Final GPCI county data file from CMS for 2012.

Payment areas

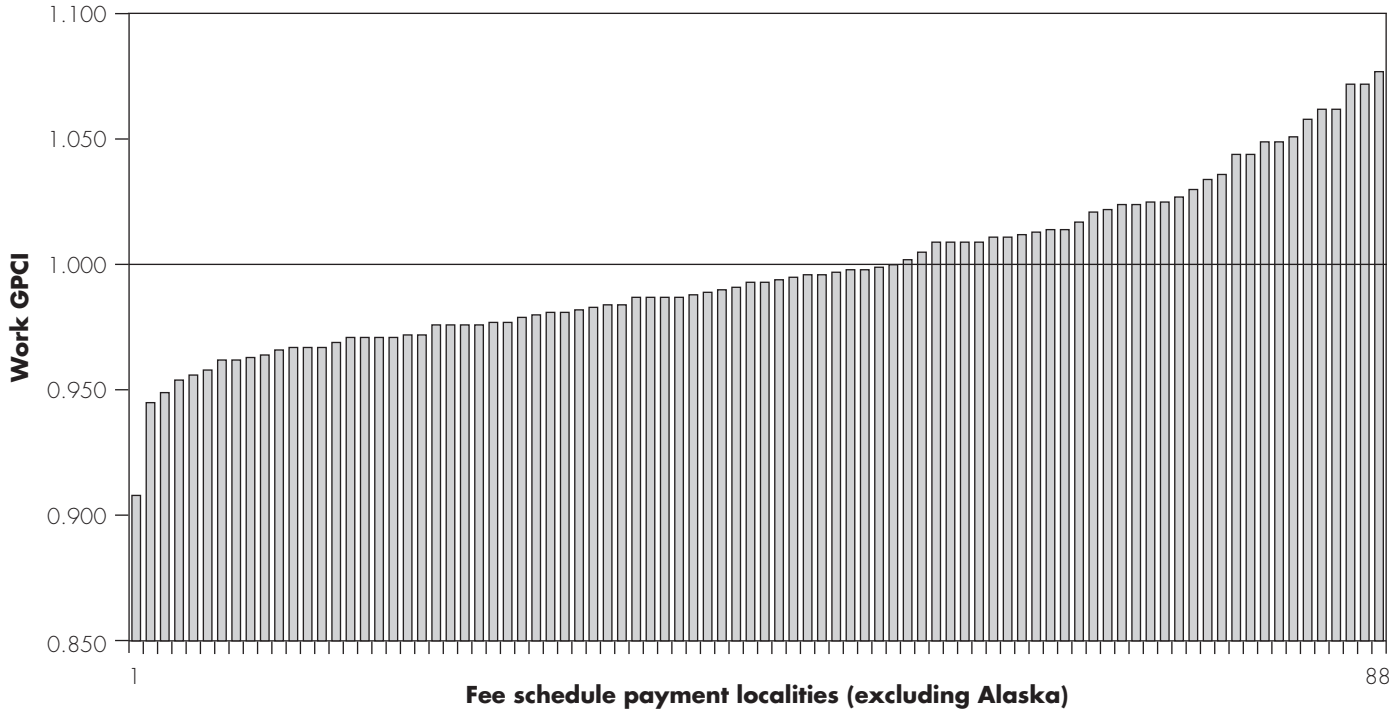
The payment areas for the GPCIs are called localities. CMS has defined 89 of them (Figure 8-1). Thirty-four localities cover entire states. Other states have more than one locality. For example, Pennsylvania has two: The Philadelphia metropolitan area is one locality, and the rest of the state is another. The Commission has considered alternative methods for reconfiguring the localities (text box, p. 208). In addition, the Government Accountability Office, the Institute of Medicine (IOM), and others have called for redrawing the locality boundaries.

Work GPCI's range of values

In the absence of a floor, the work GPCI can have a range of values (Figure 8-2). The national average is 1.000. Without the floor, the work GPCI for Puerto Rico is lowest, at 0.908. The locality with the next lowest work GPCI is Montana, at 0.945. At the other end of the scale, Alaska has a work GPCI of 1.500 specified in statute (not

FIGURE 8–2

Work GPCI by locality, 2012



Note: GPCI (geographic practice cost index). There are 89 payment localities. The Alaska locality is not shown. Its work GPCI (established in the Medicare Improvements for Patients and Providers Act of 2008) is 1.5. GPCI values shown are those without the floor.

Source: 2012 GPCI file (released before extension of the temporary floor).

shown in the figure). Otherwise, Santa Clara, California, has the highest work GPCI, at 1.077.

Given the value of the work GPCI in each locality and the locality's volume of services (measured in relative value units), we can estimate the GPCI's effect on spending relative to spending in the absence of a GPCI. The work GPCI (not including Puerto Rico) generally has effects on a locality's allowed charges that range from −2.9 percent to 3.8 percent (Figure 8-3, p. 204).

The work GPCI's temporary floor—established initially in the Medicare Modernization Act of 2003 and continued with a series of extensions since then—suspends the adjustment in localities with costs below the national average. That is, if a locality's GPCI would be less than 1.000 without the floor (e.g., 0.950), the locality's GPCI becomes 1.000 with the floor. Because of the floor, the GPCI's effect on spending is limited to the 34 localities with above-average costs (Figure 8-4, p. 205).

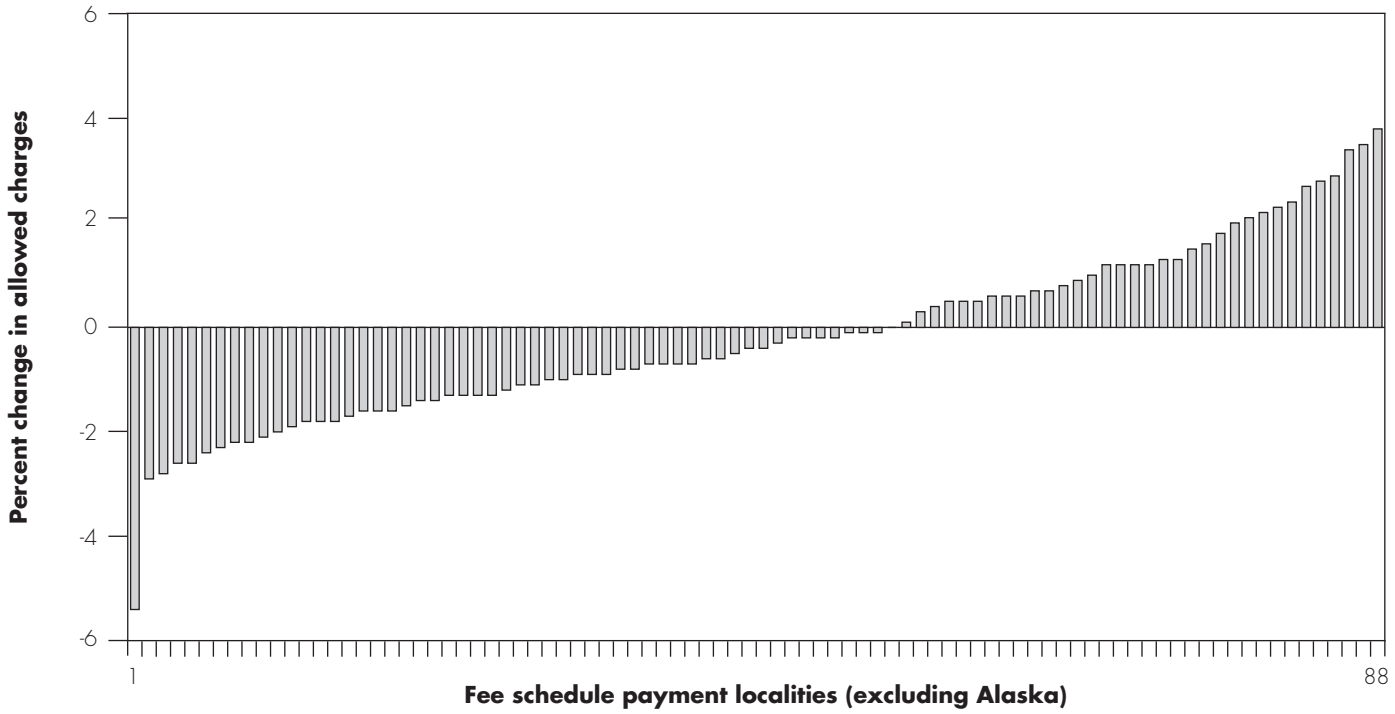
Construction of the work GPCI

The work GPCI is constructed using data on the earnings of professionals in selected occupations. Specifically, CMS develops the work GPCI with Bureau of Labor Statistics (BLS) data on the earnings of professionals in seven reference occupational categories: architecture and engineering; computer, mathematical, life, and physical science; social science, community and social service, and legal; education, training, and library; registered nurses; pharmacists; and art, design, entertainment, sports, and media.

When new BLS data from the Occupational Employment Statistics survey become available, the GPCI is updated (Figure 8-5, p. 206). By statute, the updates occur at least every three years. A budget-neutrality adjustment is applied to ensure that an update does not change total payments. Work GPCI updates include the application of a statutory limit that reduces variation in the GPCI to 25 percent of what it would be otherwise.

FIGURE 8–3

Work GPCI effects (without floor) on total fee schedule allowed charges by locality, 2012



Note: GPCI (geographic practice cost index). Effects were calculated—holding the volume of services constant—as allowed charges with the work GPCI (and no floor) compared with allowed charges without the work GPCI. There are 89 payment localities. Alaska is not shown. The legislated work GPCI for Alaska increases the state's payments for work by 25.6 percent.

Source: Final GPCI county data file from CMS for 2012 and GPCI file (released before extension of the temporary floor) for 2012.

The work GPCI is not based on the earnings of physicians and other health professionals (except for registered nurses and pharmacists) for several reasons.

Circularity

CMS cites circularity as one reason for constructing the work GPCI with data on the earnings of professionals in the reference occupations (Centers for Medicare & Medicaid Services 2012). Medicare payments are a key determinant of the earnings of physicians and other health professionals. Including those earnings in the GPCI would effectively make the index dependent on Medicare payments.

This concern about circularity is an issue the Commission considered when making recommendations on an alternative method to compute the hospital wage index (Medicare Payment Advisory Commission 2007). For example, if a hospital's wage index is determined by the wages it pays, success in moderating increases in hourly wages could lead to a decrease in the facility's wage index and therefore pressure to reduce costs even more. In the case of the work GPCI, such a circular relationship could arise if the GPCI were based on the earnings of health professionals: A change in the GPCI would lead to a change in earnings, which in turn would lead to further changes in the GPCI, and so on.

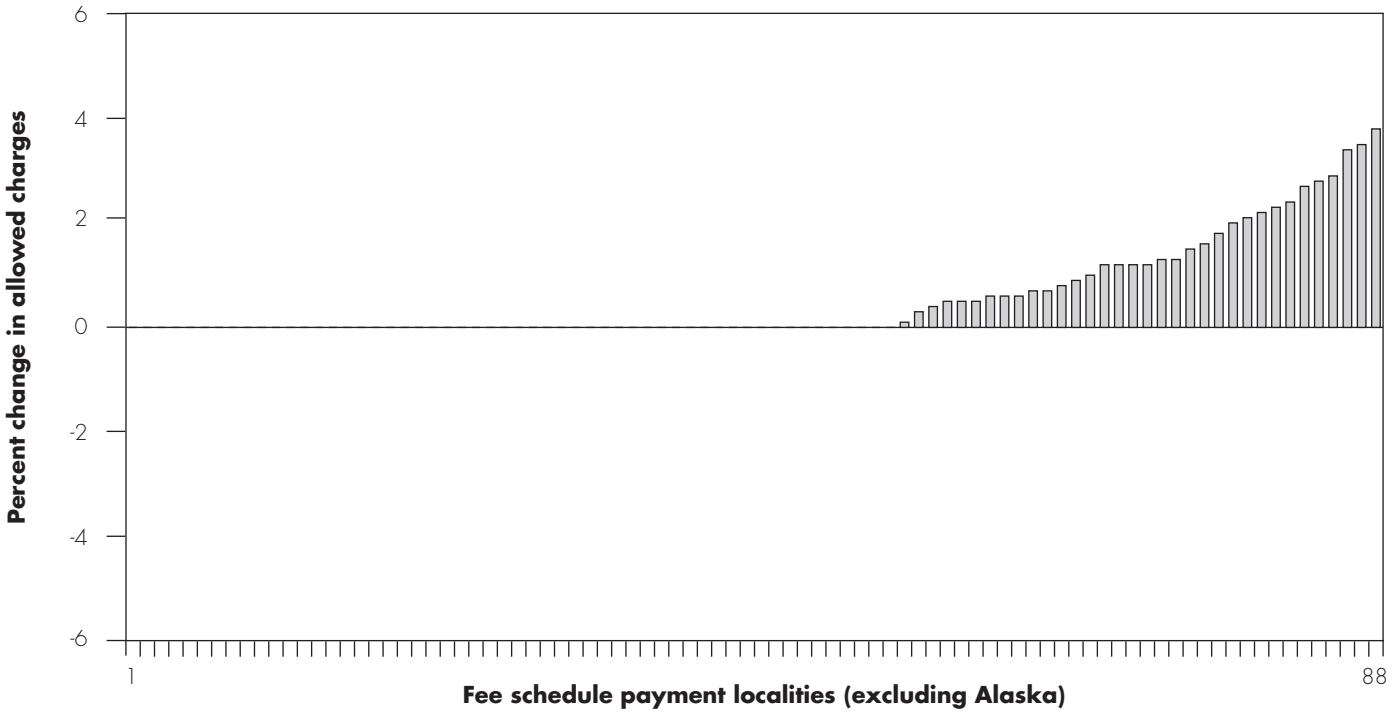
Return on investment

CMS notes also that the earnings of physicians and other health professionals can have two components: wages and a return on investment. Calculating the work GPCI with data on those earnings would assign higher GPCI values to areas where practices are more profitable.

In a report on geographic adjustment of Medicare payments, IOM notes that health professionals who are self-employed have an ownership interest in their practice

FIGURE 8–4

Work GPCI effects (with floor) on total fee schedule allowed charges by locality, 2012



Note: GPCI (geographic practice cost index). Effects were calculated—holding the volume of services constant—as allowed charges with the work GPCI (including the floor) compared with allowed charges without the work GPCI. There are 89 payment localities. Alaska is not shown.

Source: Final GPCI county data file from CMS for 2012 and GPCI file (released before extension of the temporary floor) for 2012.

(Institute of Medicine 2011). In turn, their earnings include compensation for furnishing services but often also include a partial salary that represents a return on investment in the practice. IOM concluded that, with so many variations in staffing arrangements among practices, earnings data may not accurately represent the income health professionals derive from furnishing services.

Volume of services

The Government Accountability Office, in a report on the validity of the GPCIs, offered an additional reason for the work GPCI not to be based on the earnings of physicians and other health professionals: geographic variation in the volume of services (Government Accountability Office 2005). The earnings of physicians and other health professionals are partly a function of the volume of services they furnish. Indeed, the Commission is among those who have documented variation in the volume of services (Medicare Payment Advisory Commission 2011b). If the work GPCI were based on the earnings of physicians and other health professionals, it would be higher in high-volume areas and lower in low-volume areas.

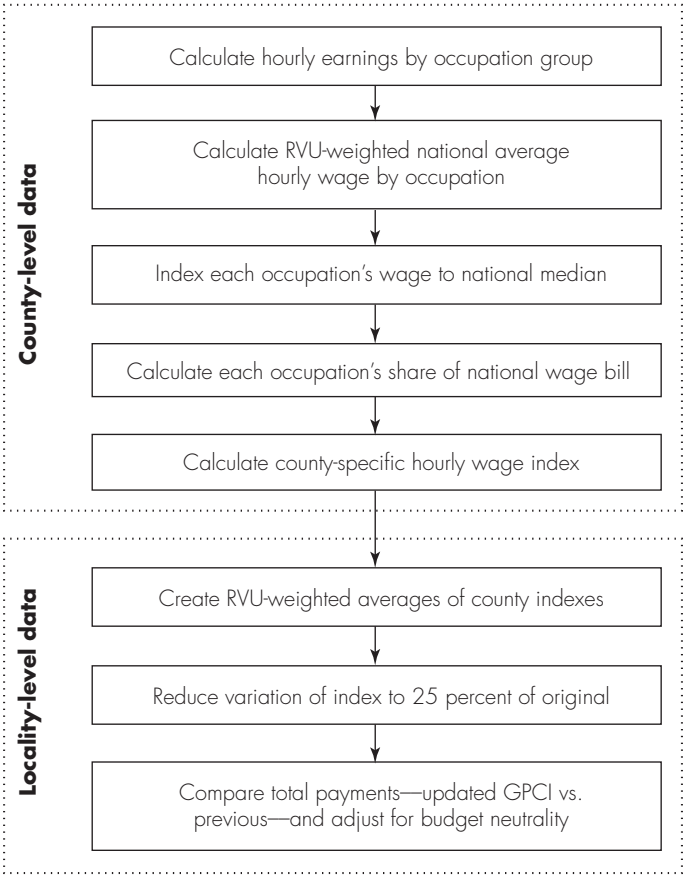
Market factors

Market factors would be one further consideration if the work GPCI were constructed using data on the earnings of physicians and other health professionals. In work for the Commission, a contractor noted that in some geographic areas health professionals have a strong bargaining position relative to insurers (Dalton et al. 2012). As a result, the health professionals can command higher payments, which may be an important determinant of earnings in some areas.

Limits on the work GPCI

Whether there should be a work GPCI is a longstanding question. When the Congress first considered legislation

FIGURE 8–5 **Updating the work GPCI**



Note: GPCI (geographic practice cost index), RVU (relative value unit).

Source: Acumen LLC, final report on sixth GPCI update, November 2010.

for the fee schedule in the late 1980s, there were two concerns about a geographic adjustment for work: equity—for beneficiaries and the professionals furnishing services—and ensuring access to care in areas less desirable to professionals (Ginsburg 1991, Physician Payment Review Commission 1989). Because of these concerns, the Physician Payment Review Commission recommended that the fee schedule not include a work GPCI.

In response to these concerns, the Congress put limits on the work GPCI. First, the fee schedule legislation passed in 1989 limited the GPCI to one-quarter of the relative cost of professional work effort in a locality compared with the national average. For example, if in a given locality the earnings of professionals in the reference occupations were 20 percent above the national average, the Medicare payment adjustment under the work GPCI, instead of being 1.20, would be limited to 1.05, or 5 percent above the national average. The limit was established in response to research showing that a work GPCI without the limit would range from about 28 percent above the national average to about 16 percent below the national average, a degree of variation perceived by the Congress as too high (Zuckerman and Maxwell 2004). The second limit is the floor, which affects much of the nation (Figure 8-6). It was extended most recently with the American Taxpayer Relief Act of 2012. Without further legislation, the floor will expire at the end of 2013.

Arguments for and against the work GPCI

To examine the work GPCI in depth, the Commission contracted for a review of relevant economic theory, characteristics of the labor market for physicians and other health professionals, and arguments for and against the work GPCI.

Theory of geographic wage differences

The theory of compensating wage differentials underlies the construction of the GPCI. According to this theory, workers are compensated differentially depending on attributes of their jobs. If a job has negative attributes (noise, stress, etc.), workers are expected to demand a compensating increase in their wages. By contrast, if a job takes place in a pleasant work environment or has other positive attributes, workers likely receive a lower wage, holding other attributes constant. The GPCI results from the application of this theory to the geographic dimension of wages.

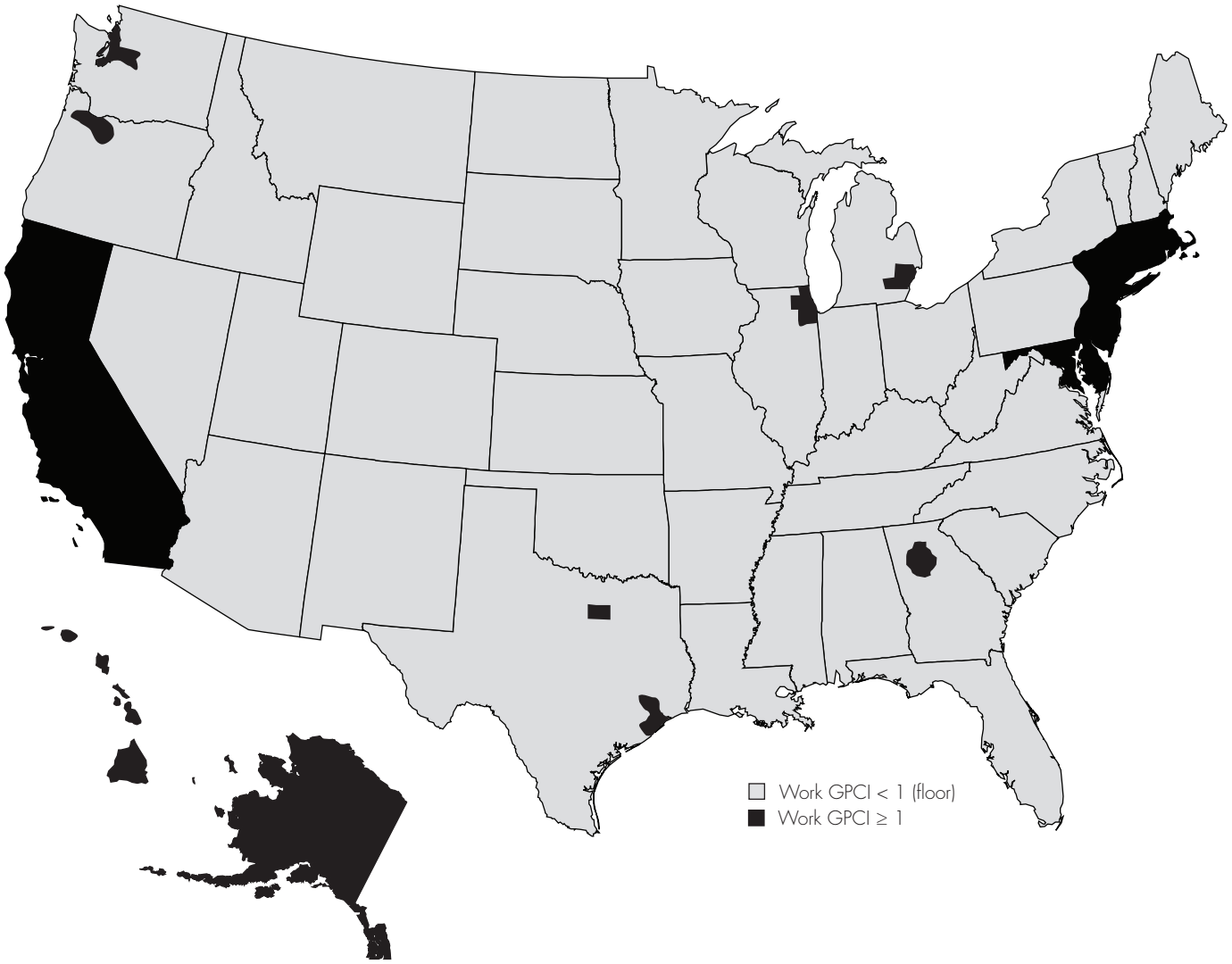
Geographic factors that can affect the nominal wage in an area are the cost of living and local amenities such as climate, cultural activities, and recreational opportunities. These factors can offset each other. For example, in high-amenity areas, employers can pay workers less relative to the cost of living than in areas with low levels of amenities. By contrast, workers may demand higher wages (adjusted for cost of living) in areas with unattractive features.

Labor market for physicians and other health professionals

In addition to factors relevant to all occupations, certain features of the labor market for physicians and other health

FIGURE 8–6

Floor on work GPCI affects much of the nation, 2012



Note: GPCI (geographic practice cost index). A temporary floor suspends the work GPCI in localities with labor costs below the national average. Some urban areas include more than one locality.

Source: Final GPCI county data file from CMS for 2012 and GPCI file (released before extension of the temporary floor) for 2012.

professionals can have effects specific to geographic differences in the earnings of those professionals. First, self-employed health professionals have earnings that may include a return on investment. The tendency of physicians and other health professionals to be self-employed (in contrast to working as an employee) can vary geographically and, therefore, can affect comparisons of physician earnings by area.

A second factor is market power. In some geographic areas, health professionals have a strong bargaining position relative to insurers. As a result, those professionals may receive higher payments for their services and those payments may in turn influence earnings in some areas relative to others.

Third, the earning potential of physicians and other health professionals can be affected by the availability of factors of production that are either complements to or substitutes for the work of health professionals. Relevant factors of production might include specialists to whom a professional can refer patients, hospitals and

Redrawing the boundaries of the fee schedule's payment localities

Several health policy bodies, including the Commission, have examined the need to redraw the physician fee schedule's payment localities. In April 2006, Commission staff presented alternative methods for reconfiguring the fee schedule's payment localities. One was called the locality option and was based on existing localities. A county was allowed to become a separate locality if its input prices were found to be high relative to the locality's other counties. The second alternative was called the metropolitan statistical area (MSA) option and was based on MSAs and "rest of state" areas as defined by the Office of Management and Budget. If an area within a state had input prices that exceeded the state's lower cost areas by a preset threshold, it was allowed to become a locality. Both options would have increased the number of localities, from the current 89 to 186 under the locality option, and to 119 under the MSA option. Nonetheless, under both options, 95 percent of counties would have a change in payments of 5 percent or less.

Separately, the Government Accountability Office (GAO) and the Institute of Medicine (IOM) have recommended redrawing the locality boundaries. GAO recommended that CMS examine and revise the localities using an approach that is uniformly applied to all states and based on the most current data (Government Accountability Office 2007). GAO found that CMS had established the current boundaries using three different approaches.

IOM recommended moving from the current 89 localities to the 441 MSAs and statewide non-MSA areas that CMS uses for payments to institutional providers (Institute of Medicine 2011). IOM's rationale was that they could find little justification for defining payment areas for the physician fee schedule differently from the payment areas for hospitals and other providers. Their simulation of the recommendation's impact showed that most of the redistribution would shift Medicare payments from rural areas to urban areas and from small urban areas to large urban areas (Institute of Medicine 2012). The changes in payments would be between −5 percent and 5 percent in counties where 96 percent of physician fee schedule services are billed.[2]

Partly in response to these recommendations, but also in response to concerns expressed by physicians and suppliers in specific geographic areas, CMS anticipates further work on the structure of localities, much of it focused on the IOM recommendation to increase the number of localities (Centers for Medicare & Medicaid Services 2012). The agency will assess and analyze the new IOM report. CMS will also provide opportunities for public input, including town hall meetings and the rulemaking process. ■

other institutional providers, and providers of medical technology (e.g., imaging centers). All such factors can influence the earning potential of health professionals and vary geographically in their availability.

Arguments in favor of a work GPCI

Arguments in favor of a work GPCI have been drawn from the theory of geographic wage differences, the work of the contractor who developed the GPCIs for CMS, and IOM reports on geographic adjustment of Medicare payments (Institute of Medicine 2012, Institute of Medicine 2011).

Compensation for cost of living

A fundamental argument for a work GPCI is that the cost of living varies across areas. It is a cost that is beyond the control of physicians and other health professionals. Payments for the services they furnish should be adjusted accordingly. Consistent with this theory is the notion that the adjustment should account for an area's amenities (Pope et al. 1989, Zuckerman and Maxwell 2004).

Beneficiary access to services in high-cost areas

Advocates of the work GPCI contend that if payment rates for fee schedule services do not reflect local cost of living and amenities, the supply of physicians and other health professionals will not be sufficient in high-cost areas and beneficiaries' access to care in those areas will suffer (Pope et al. 1989).

Work as an input to the production of services

The work of physicians and other health professionals is one of several inputs to the production of fee schedule

services, along with practice employees, office space, medical equipment, and so on. Those who support use of a work GPCI contend that payment for the work component of services should be adjusted just as payment for other components—practice expense and PLI—is adjusted. For example, the practice expense GPCI adjusts payments to account for geographic variation in practices' wages for clinical and administrative staff.

Consistency with Medicare payment adjustments for other providers

Another reason to adjust Medicare's payments for fee schedule services cited by advocates of the work GPCI is the labor component of Medicare payments to institutional providers, such as hospitals, which is fully adjusted through the Medicare area hospital wage index for geographic variation in costs. If hospital payments are geographically adjusted but fee schedule payments are not, variation in the two types of payments will be inconsistent.

Arguments against a work GPCI

Arguments against a work GPCI are drawn from the positions of stakeholders who argue for a floor on the GPCI if not outright elimination of it. The IOM reports addressed some of these arguments also.

Work is work, or equity

IOM reported that opponents of the work GPCI contend that "work is work" (Institute of Medicine 2011). That is, the work of physicians and other health professionals is the same in all areas, so why should that work be paid for differently across areas? Essentially, the argument is one of equity.

National labor market

Another argument against the work GPCI holds that the labor market is national rather than local. That is, practices recruiting physicians and other health professionals compete with practices nationwide (Marshfield Clinic 2002). For example, practices in rural areas with lower work GPCIs assert that they compete with urban practices, and practices in different regions compete with each other to hire health professionals. While it is understood that financial considerations are not the only factor influencing the supply decisions of physicians and other health professionals, some rural practices nonetheless see a rationale for making payment rates uniform everywhere.[3]

Demands of rural practice

Some representatives of rural practices claim that they have to pay more to hire physicians to locate in rural areas because of the extra demands or costs of rural practice, such as greater on-call time and travel (Kitchell 2011). Further, physicians and other health professionals may prefer to locate in urban areas—even more so than other occupations—because of the availability of complementary factors of production (e.g., colleagues, specialists, institutional providers, medical technology, teaching hospitals, and research opportunities), preferences for the amenities available in urban areas, and the availability of jobs for spouses. For these reasons, the argument is that, despite the lower cost of living in rural areas, physicians and other health professionals must be paid more to locate there.

Certain other government programs do not geographically adjust payments or costs

Work GPCI opponents note that not all government payments or standards are geographically adjusted. For example, Social Security payments are not geographically adjusted, nor is the federal poverty level (although the Department of Labor has conducted research on doing so).

Data for the reference professional occupations are inadequate

Work GPCI opponents argue that the wage data for the work GPCI's reference occupations—architects, engineers, and so forth—are inappropriate proxies for physicians' wages. The labor market for physicians and other health professionals may be different from that of professionals in the reference occupations. Opponents reason that if accurate data on the earnings of physicians and other health professionals are not available and if the reference data are inadequate, it may be better to have no work GPCI.

Work GPCI is inconsistent with findings on urban–rural differences in physician compensation

Another argument concerns the accuracy of the work GPCI rather than whether there should be one. Work GPCI opponents point to research on urban–rural differences in physicians' earnings (Reschovsky and Staiti 2005). Adjusted for cost of living only (and not amenities), the earnings of physicians in rural areas were found to exceed those of physicians in urban areas by a statistically

The Institute of Medicine's proposed analysis of geographic variation in physician compensation

The Institute of Medicine's (IOM's) committee on geographic adjustment of Medicare payments has proposed an analysis of geographic variation in physician compensation (Institute of Medicine 2011). The committee received testimony from a coalition of providers arguing that, as the number of employed physicians has increased, salary survey data have become available that can be used to directly measure physician labor costs (Reding 2010). In response, the committee first considered alternative sources of earnings data and evaluated the data according to the characteristics of sample size, response rate, representativeness, and timeliness. They reviewed data from the Bureau of Labor Statistics, the Bureau of the Census, the Medical Group Management Association, and the American Medical Association. IOM's conclusion was that, when available, data from the American Community Survey conducted by the Bureau of the Census might be appropriate.[4]

The IOM committee then proposed an analysis of geographic variation in the compensation per relative value unit of physicians and other health professionals. The analysis would be premised on the idea that, if cost of living and amenities are as important to physicians and other health professionals as they are to those in the work geographic practice cost index (GPCI) reference occupations, geographic data should show that the compensation of health professionals is highly correlated with the compensation of workers in the reference occupations. Such a finding would support use of compensation data on reference occupations in constructing the work GPCI. Alternatively, if the compensation of those in the reference occupations is not correlated with the compensation of physicians and other health professionals, such a finding would suggest that reference occupation compensation is a poor proxy for the cost of living net of amenities represented in the GPCI. ■

significant 13 percent. By contrast, the current work GPCI adjusts payments upward in urban localities.

Arguments for and against a partial work adjustment

The work GPCI adjustment is partial in that it is limited to one-quarter of the relative cost of professional work effort in a locality compared with the national average. An argument for adjusting only in part is one of caution or prudence given the limitations in available data and conceptual uncertainties. Another argument for a partial adjustment is that the preferences for amenities and, therefore, earnings of the reference occupations are likely to correlate partially, but not completely, with the preferences and earnings of physicians and other professionals. Thus, only part of the variation in reference occupation wages should be applied by the work GPCI.

Soon after inception of the fee schedule in 1992, researchers with the American Medical Association assessed the validity of GPCIs, including the work GPCI's one-quarter limit (Gillis et al. 1993). After estimating alternative statistical models designed to explain variation in physicians' compensation, they found that a model with a one-quarter GPCI fit the data better than models with either a full GPCI (no limit) or no GPCI.

The main argument against a partial work GPCI is that, if the arguments for a work GPCI are convincing, they would support a full work adjustment, not a partial one.

Empirical analysis of the work GPCI's validity and its effects on access and spending

Given the arguments for and against the work GPCI, we proceeded with an empirical analysis to address the issues in the mandate: whether to apply a work GPCI, and, if so, its effects. We worked with a contractor to develop and implement an analytic plan to investigate how well the work GPCI is correlated with a proprietary cost-of-living index, the Commission's cost-of-living index, and physicians' earnings (Dalton et al. 2012). The analysis also includes the work GPCI's effects on access to care and spending.

Empirical analysis of the work GPCI

Our analysis first considered questions specific to design in order to determine whether the work GPCI is a valid measure of geographic variation in resource costs:

- Is the work GPCI correlated with a measure of geographic variation in the cost of living?
- Is the work GPCI correlated with the hospital wage index?

Any correlations between the work GPCI and other measures of geographic variation in resource costs would reveal alternatives that could reduce CMS's administrative burden of maintaining a GPCI used solely to adjust the fee schedule's work relative value units (RVUs).

We also analyzed the correlation of earnings within the group of reference occupations, comparing each pair. If the earnings of the reference occupations are not correlated, it would raise the question of whether the earnings of some subset of the reference occupations would yield a more valid GPCI than the current one.

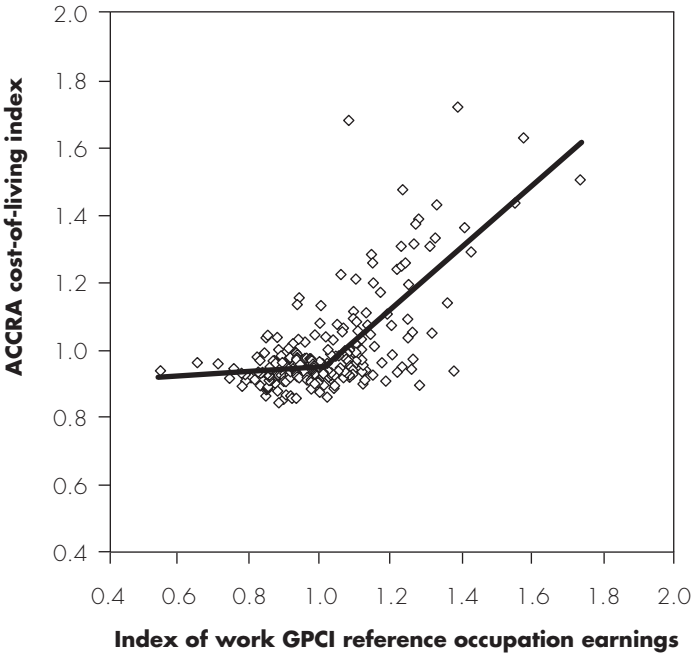
As proposed by IOM in the study of geographic adjustment of Medicare payments, we examined the correlation of the work GPCI and available data on physicians' earnings (see text box).

Correlation of the work GPCI with a proprietary cost-of-living index

To compare the work GPCI with a cost-of-living index, we used an index developed by the Council for Community and Economic Research (C2ER), formerly known as the American Chamber of Commerce Research Association (ACCRA).[5] C2ER describes its ACCRA cost-of-living index as follows:

> The ACCRA Cost of Living Index measures regional differences in the cost of consumer goods and services, excluding taxes and non-consumer expenditures, for professional and managerial households in the top income quintile. It is based on more than 50,000 prices covering almost 60 different items for which prices are collected three times a year by chambers of commerce, economic development organizations or university applied economic centers in each participating urban area. . . . The composite index is based on six components—housing, utilities, grocery items, transportation, health care and miscellaneous goods and services.[6]

FIGURE 8–7 **Correlation of ACCRA cost-of-living index and an index of earnings for the work GPCI's reference occupations**



Note: ACCRA (American Chamber of Commerce Research Association), GPCI (geographic practice cost index).

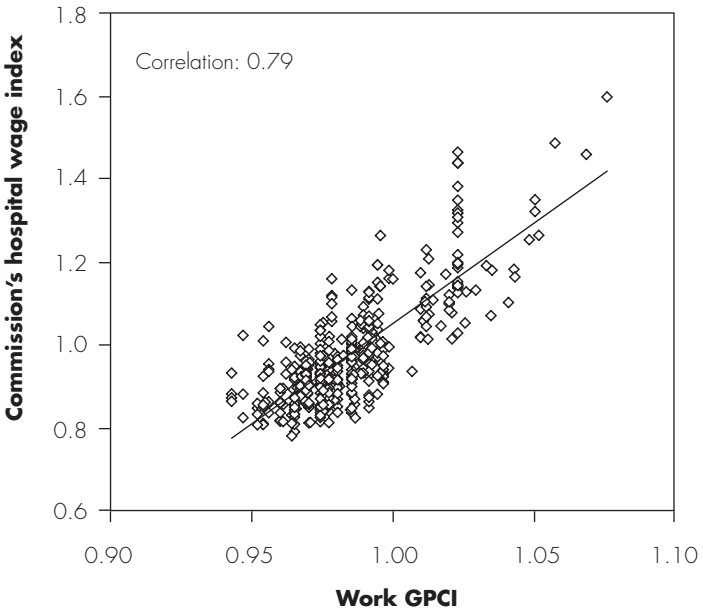
Source: MedPAC analysis and RTI International analysis of ACCRA data from 2009 to 2011 and Bureau of Labor Statistics survey data from May 2011.

Using the ACCRA index as a measure of geographic variation in cost of living, we analyzed the correlation between that index and a second index constructed using the BLS data that were used to construct the work GPCI.

The analysis shows, first, less variation geographically in the ACCRA index than in the earnings of professionals in the work GPCI's reference occupations (Figure 8-7). While the ACCRA index ranges from 0.84 to 1.72, the index based on the earnings data ranges from 0.54 to 1.73.[7] Second, the correlation between the ACCRA index and the earnings of professionals used to construct the work GPCI depends on the level of the professionals' earnings. In areas where professional earnings are below average, there is little correlation between those earnings and the ACCRA index. The correlation coefficient for that relationship is 0.09. By contrast, the correlation of professional earnings with the ACCRA index is much higher in areas with above-average professional earnings. For those areas, the correlation coefficient is 0.65. From

FIGURE 8–8

Correlation between the 2012 GPCI and the Commission's hospital wage index



Note: GPCI (geographic practice cost index). Data exclude Puerto Rico and Alaska. Alaska's work GPCI is set at 1.5 by statute.

Source: MedPAC analysis of salary and wage data from the Bureau of Labor Statistics and the physician fee schedule final rule for 2012.

this analysis we can conclude that professional earnings behave somewhat differently than the cost-of-living index. That is, the cost-of-living index does not appear to track professional earnings very well.

Correlation of the work GPCI with the Commission's hospital wage index

We analyzed the correlation between the work GPCI and two measures of hospital wages: the CMS hospital wage index and a Commission-developed hospital wage index.[8] The wage index starts with county-level data, and we weighted these values by the relative share of work RVUs in each county to construct a value for each core-based statistical area and non–core-based statistical area rest-of-state locality. There is a strong correlation between the GPCI and the Commission's hospital wage index, with a correlation coefficient of about 0.79 (Figure 8-8).

The hospital wage indexes have a wider range than the physician work GPCI. For example, the Commission-developed wage index ranges from 0.75 (in Crawford, AR) to 1.59 (in Santa Clara, CA). Even if the adjustment were limited to one-quarter of the variation (like the GPCI), the highest cost locality would receive a 15 percent adjustment versus 7.7 percent under the current work GPCI.

Earnings of reference occupations compared with each other

The theory supporting the work GPCI is that the wages paid to workers for a unit of work should be equivalent in terms of the goods and services they can purchase with those wages regardless of the geographic area in which they work. Factors that vary geographically and are believed to influence wage differentials include cost of living and amenities. Data on the earnings of professionals in the reference occupations—architecture, engineering, and others—include the effects of both cost of living and amenities and therefore can serve as a measure of geographic variation in those factors as valued by physicians and other health professionals.

A comparison of each pair of reference occupations shows that the correlation coefficients are all positive (Table 8-2). Except for the comparisons of pharmacists with the six other occupations, the coefficients range from 0.413 to 0.688. The coefficients for the comparisons of pharmacists with the other occupations are generally lower, ranging from 0.133 to 0.425. The lower coefficients for pharmacists suggest that they may value cost of living and amenities differently than those in the other occupations. In further analyses examining the work GPCI, it may be useful to consider pharmacist earnings separately from the earnings of the other reference occupations.

Correlation of the work GPCI with physicians' earnings

In addition to IOM's questions about whether reference occupation earnings are a good proxy for cost of living net of amenities, the Commission believes that the correlation between health professionals' compensation and that of the reference groups might be poor for other reasons. The market for health professionals has characteristics that distinguish it from other markets:

- The compensation of physicians and other health professionals can have two components: wages and a return on investment from owning and operating a practice. Compensation may be higher in some areas than in others, depending on the profitability of practices.

TABLE 8–2 **Correlation coefficients among the seven component occupational groups composing the GPCI reference occupation index, 2011**

	Index 1	Index 2	Index 3	Index 4	Index 5	Index 6	Index 7
Index	Architecture and engineering	Computer, mathematical, life and physical science	Social science, community and social service, and legal	Education, training, and library	Registered nurses	Pharmacists	Art, design, entertainment, sports, and media
1	1.000						
2	0.688	1.000					
3	0.482	0.675	1.000				
4	0.413	0.594	0.514	1.000			
5	0.493	0.635	0.588	0.587	1.000		
6	0.178	0.220	0.244	0.133	0.425	1.000	
7	0.460	0.676	0.633	0.535	0.557	0.098	1.000

Note: GPCI (geographic practice cost index). A correlation coefficient is a measure of the linear dependence between two variables and can range from –1 to 1.

Source: RTI analysis of Bureau of Labor Statistics Occupational Employment Statistics survey data from May 2011.

- The earnings of physicians and other health professionals are partly a function of the volume of services they furnish. Compensation may be higher in high-volume areas and lower in low-volume areas.
- In some geographic areas, health professionals have market power, giving them a strong bargaining position relative to insurers. As a result, health professionals in those areas can command higher payments, with those payments possibly acting as an important determinant of compensation.

Given these factors, health professionals' higher compensation in some areas compared with others may not correlate with cost of living net of amenities.

To pursue the analysis proposed by the IOM committee, we analyzed data on physicians' earnings from two sources: BLS and the Medical Group Management Association (MGMA). The analysis shows that the data available on geographic variation in physicians' earnings have substantial limitations.

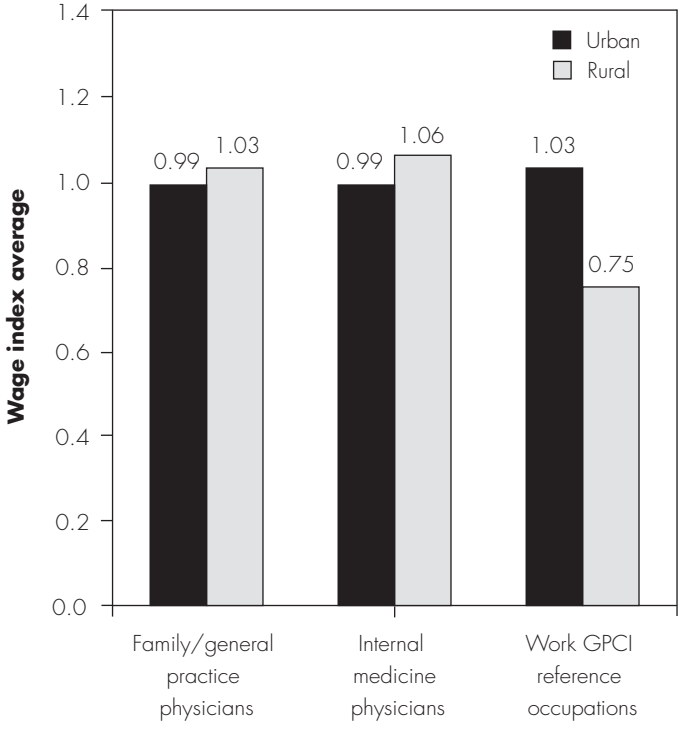
Analysis of BLS data on physicians' earnings BLS data on physicians' earnings have several important limitations. The data:

- are sparse at the level of individual specialties in smaller urban areas,
- are severely limited by having censored responses at upper income levels (greater than $187,200 per year),
- include wages only and omit benefits, and
- include wages of residents and fellows.

We took steps to address these data limitations. For example, to address the issue of sparse data, we conducted some analyses with special data tabulations for the Commission's mandated report provided by BLS. These tabulations combined all areas within a state into two categories: rural areas and urban areas. To further address the issue, we also analyzed data for the two physician specialties for which the most data were available: family/general practice and internal medicine.

Nonetheless, important data limitations remain. For instance, we attempted to adjust the BLS index of physicians' wages for the presence of residents' and fellows' wages in the data but were unsuccessful. In addition, while self-employed workers, owners, and partners in unincorporated firms are not eligible for participation in BLS's wage survey, physician owners

FIGURE 8–9 **Physicians' wages are higher in rural areas than in urban areas, 2011**



Note: GPCI (geographic practice cost index). Rural areas are nonmetropolitan areas. Index values are averages weighted by each area's level of employment in the respective occupation(s).

Source: RTI analysis of Bureau of Labor Statistics Occupation Employment Survey data from May 2011.

considered employees of their professional practice corporation are eligible. Therefore, some physician owners of practices—and their return on investment—may be represented in the data. In addition, the influence of such factors as return on investment, service volume, and market power are present in the BLS data.

Physicians' wages in rural and urban areas The first analysis using BLS data compared physicians' wages in one type of low-cost area—rural (nonmetropolitan) areas—and urban areas. Previous research shows that the earnings of physicians in rural areas, when adjusted for cost of living, exceeded the earnings of physicians in urban areas by a statistically significant 13 percent (Reschovsky and Staiti 2005).

Data were analyzed for the two physician specialties—family/general practice and internal medicine—judged to have sufficient sample data to permit reliable estimates for urban areas and rural areas. For each specialty, an index was computed as an area's average wage divided by the national average wage.

The findings were consistent with previous research (Figure 8-9). The average wage index for family/general practice physicians was 1.03 in rural areas but 0.99 in urban areas. For internal medicine physicians, we see a similar result: an average wage index of 1.06 in rural areas but 0.99 in urban areas. By contrast, a wage index constructed with data on the wages of professionals in the work GPCI's reference occupations showed lower wages in rural areas, with an average index value for rural areas of 0.75 compared with 1.03 for urban areas.

These results suggest that wage differentials for the reference occupations are consistent with economic theory but the differentials for physicians are not. However, the influence of such factors as return on investment, service volume, and market power make these findings inconclusive.

For further perspective on wage differentials between rural areas and urban areas, we used special data tabulations provided by BLS. Unlike the analyses in which the units of analysis were individual metropolitan statistical areas and statewide rural areas, these tabulations combined all areas within a state into just two categories: rural and urban. The special tabulations allowed us to overcome issues of sparse data and analyze wage differentials for more physician specialties than just family/general practice and internal medicine and to analyze wage differentials for other health occupations such as dentist, pharmacist, and registered nurse.

In these aggregate urban and rural area analyses by state, we continue to see a pattern of physicians' wages contrary to the pattern for other occupations: higher physicians' wages in rural areas than in urban areas (Table 8-3). The differentials range from 1 percent for family/general practice to 10 percent for the "other physicians and surgeons" category. In addition, we see similar differentials for dentists (3 percent), physical therapists (3 percent), and pharmacists (1 percent). However, the differentials for other health professionals indicate lower wages in rural areas than in urban areas, including registered nurses (–8 percent), occupational therapists (–3 percent), and respiratory therapists (–7 percent). However, as with physicians' earnings, data limitations make these findings inconclusive. Further, there could be differences between urban and rural

TABLE 8–3

Rural–urban differences in BLS wages for selected health care professionals, from state special tabulations, 2011

		Mean annual wage		
Occupation code	**Description**	**Urban**	**Rural**	**Percent difference**
29–1062	Family and general practice	$176,156	$178,787	1%
29–1063	General internists	195,064	205,791	5
29–1064	Obstetricians and gynecologists	212,619	218,565	3
29–1067	Surgeons	227,091	228,706	1
29–1069	Other physicians and surgeons	189,512	207,650	10
29–1021	Dentists, general	163,880	169,296	3
29–1051	Pharmacists	111,016	111,797	1
29–1111	Registered nurses	67,212	61,820	–8
29–1131	Veterinarians	89,126	81,579	–8
29–1122	Occupational therapists	72,216	70,235	–3
29–1123	Physical therapists	77,153	79,536	3
29–1126	Respiratory therapists	55,059	51,126	–7

Note: BLS (Bureau of Labor Statistics). Table shows unweighted means across urban and rural state areas. See text for data limitations. Rural areas are nonmetropolitan areas.

Source: RTI analysis of BLS special tabulations for industry code 29 for 2011.

physicians in their market power or in the volume of services they furnish.

Correlation of the work GPCI and physicians' wages We conducted a second analysis with BLS data on the correlation of the work GPCI with physicians' wages. The results were not surprising given the findings on differentials in physicians' wages in rural areas compared with urban areas.

The wages of professionals in the work GPCI's reference occupations are not correlated with the wages of physicians in family/general practice (Figure 8-10, p. 216). The correlation coefficient for this relationship is –0.079, but statistically it is not different from zero.

The wages of professionals in the work GPCI's reference occupations are negatively correlated with the wages of physicians in internal medicine (Figure 8-11, p. 216). The correlation coefficient for this relationship is –0.202, which is statistically significant.

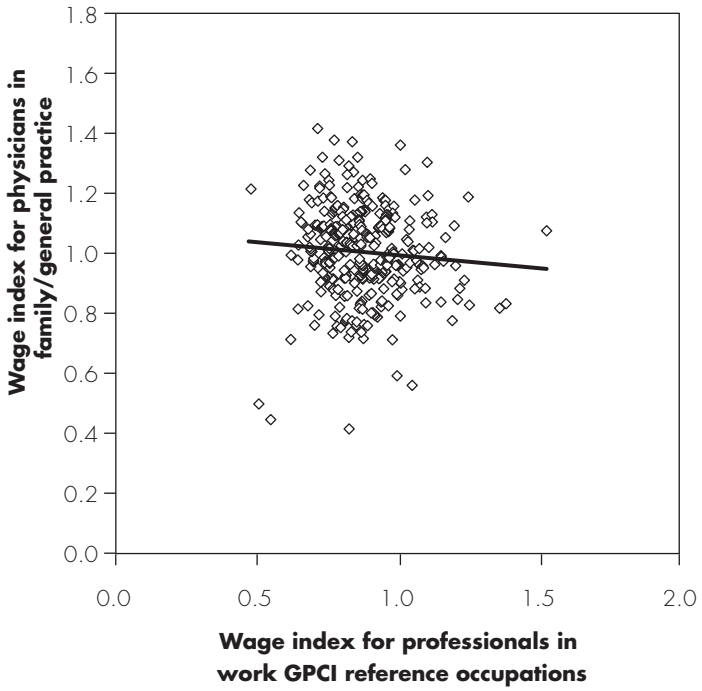
Analysis of MGMA data on physicians' earnings In further pursuit of physician compensation data, we examined MGMA's Physician Compensation and Production Survey:

- The 2012 Physician Compensation and Production Survey sample (based on data from 2011) includes 62,245 physicians and other health professionals working in 2,913 organizations.
- The survey data represent 174 specialties.
- Survey data are available for both self-employed and employed physicians.
- Survey data exclude residents.
- Organizations participating in the survey are a mix of MGMA members (70 percent) and nonmembers (30 percent).
- Clinicians represented are geographically dispersed: East (24 percent), Midwest (32 percent), South (21 percent), and West (23 percent).
- The survey data include a measure of productivity: RVUs.

MGMA accommodated the Commission and our contractor with special data tabulations.[9] However, in documenting its work using the MGMA data, the

FIGURE 8–10

Wages of professionals in work GPCI's reference occupations are not correlated with wages of physicians in family/general practice, 2011



Note: GPCI (geographic practice cost index).

Source: RTI International analysis of Bureau of Labor Statistics Occupational Employment Survey data from May 2011.

Commission's contractor noted that (1) the medical-practice response rate for the 2012 data was 8.2 percent, and (2) because of sample size issues, specialty-level detail was available only from tabulations that combined all areas within a state into either rural areas or urban areas.

Given the data available, we combined data for both employed and self-employed physicians and calculated indexes of physician compensation by specialty, comparing rural and urban areas (Table 8-4).[10] The comparison showed that compensation was higher in rural areas than in urban areas. The differences ranged from 1 percent higher for internal medicine to 8 percent higher for general surgery. Unlike the results based on BLS data, these results account for any differences among areas in physician productivity. That is, the results based on MGMA data are differences in compensation per RVU. This distinction is important because at least one analysis shows that physicians in rural areas work more hours per week and employ more staff per physician than physicians in large urban areas, suggesting that the volume of services per physician is higher in rural areas than in urban areas (Gillis 2009). Nonetheless, similar to their effect on the BLS data, the influences of return on investment and market power apply to the MGMA data as well.

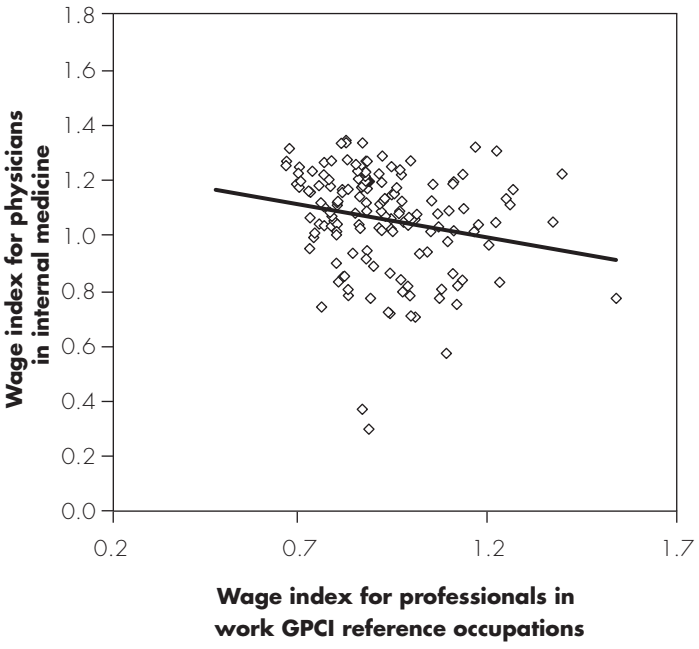
Because of sample size issues, we also made no attempt to use the MGMA data to analyze the correlation of physician compensation and the earnings of professionals in the work GPCI's reference occupations.

Impact of work GPCI on access to care

As discussed in the June 2012 report's chapter on serving rural Medicare beneficiaries, the Commission's principle for access to care is that beneficiaries should have equitable access to services regardless of their geographic location (Medicare Payment Advisory Commission 2012b). In that report, we analyzed a number of measures of access to health care services and physician services in particular. In general, there are differences between rural

FIGURE 8–11

Correlation of wages of professionals in work GPCI's reference occupations with wages of internal medicine physicians is negative, 2011



Note: GPCI (geographic practice cost index).

Source: RTI International analysis of Bureau of Labor Statistics Occupational Employment Survey data from May 2011.

TABLE 8–4 **Aggregate urban–rural differentials in MGMA indexes by specialty, 2012**

		Urban	Rural	Percent difference
Family medicine only	Number of responses	3,780	793	
	Number of practices	322	152	
	Index	0.985	1.017	3%
General internal medicine only	Number of responses	2,785	381	
	Number of practices	236	79	
	Index	0.999	1.005	1
Cardiology (all)	Number of responses	1,258	164	
	Number of practices	314	59	
	Index	0.995	1.019	2
Ophthalmology	Number of responses	241	47	
	Number of practices	71	21	
	Index	0.993	1.025	3
General surgery	Number of responses	751	172	
	Number of practices	148	63	
	Index	0.981	1.061	8

Note: MGMA (Medical Group Management Association). Rural areas are nonmetropolitan areas.

Source: RTI analysis of MGMA special tabulations from 2012 physician compensation survey.

and urban areas in the supply of physicians and other health professionals. However, we found no difference in service use between subcategories of rural areas and urban areas.

For this report on the work GPCI, we reviewed access measures specific to the Medicare population for differences across low-GPCI and high-GPCI areas. We examined access from two perspectives: supply, as measured by changes in the number of physicians and other health professionals billing FFS Medicare, and beneficiary service use.

In general, we found that changes in supply were similar in areas where the work GPCI was less than 1, compared with areas where the work GPCI was greater than or equal to 1. In both types of areas, despite differences in the base supply of professionals per beneficiary, the number of professionals billing FFS Medicare was rising at least as fast as the number of beneficiaries.

As to service use, ambulatory services per beneficiary were similar between areas with work GPCIs below 1 and those with work GPCIs above 1. Not only was average service use similar, but the distributions of service use were similar. That is, despite differences in supply across high- and low-GPCI areas, similarities existed in the minimum and maximum levels of office visits to physicians and other health professionals.

Physicians and other health professionals billing Medicare

Our data on physicians and other health professionals billing FFS Medicare come from Medicare enrollment files and claims for fee schedule services furnished in 2009 and 2010 (Table 8-5, p. 218). It would have been useful to analyze such data for years before 2009; however, the type of identification number that physicians and other health professionals used in submitting claims to Medicare changed in 2008. That change prevents us from reliably analyzing longer term trends in physicians and other health professionals billing Medicare.

The data show that, on average, the number of beneficiaries rose at the same rate in areas where the work GPCI was less than 1 and where it was greater than or equal to 1. That growth rate, which was 2.4 percent, was also similar to the increase in the number of physicians

TABLE 8–5

Increase in physicians and other health professionals billing FFS Medicare does not appear dependent on level of work GPCI

	Number of beneficiaries (in thousands)		Professionals billing FFS Medicare							
			Physicians				Other health professionals			
	Work GPCI		Work GPCI < 1		Work GPCI ≥ 1		Work GPCI < 1		Work GPCI ≥ 1	
	< 1	≥ 1	Number	Number per 1,000 beneficiaries	Number	Number per 1,000 beneficiaries	Number	Number per 1,000 beneficiaries	Number	Number per 1,000 beneficiaries
2009	30,770	14,541	320,862	10.4	204,385	14.1	161,903	5.3	72,020	5.0
2010	31,499	14,895	328,418	10.4	209,416	14.1	171,888	5.5	76,928	5.2
Increase	2.4%	2.4%	2.4%	0.0%	2.5%	0.0%	6.2%	3.7%	6.8%	4.3%

Note: FFS (fee-for-service), GPCI (geographic practice cost index). Beneficiary counts including those in FFS and Medicare Advantage assume that professionals are furnishing services to both types. Professionals billing FFS Medicare include those furnishing services to more than 15 different beneficiaries in a given year.

Source: MedPAC analysis of claims data for 100 percent of Medicare beneficiaries.

billing FFS Medicare in both area types. In areas where the work GPCI was less than 1, the number of physicians billing Medicare went up by 2.4 percent. In areas where the work GPCI was greater than or equal to 1, the number of physicians billing Medicare went up by 2.5 percent. Given this similarity in growth rates, the number of physicians billing FFS Medicare per 1,000 beneficiaries was unchanged.

These figures should not be interpreted to mean that the number of physicians in both low- and high-GPCI areas was the same. In areas where the work GPCI was less than 1, the number of physicians billing FFS Medicare per 1,000 beneficiaries was 10.4. In areas where the work GPCI was greater than or equal to 1, the number of physicians billing FFS Medicare per 1,000 beneficiaries was 14.1. Nonetheless, the absence of a change in the ratios suggests that the availability of services furnished by physicians did not change from 2009 to 2010.

The data also show that the numbers of other health professionals billing FFS Medicare—such as nurse practitioners, physicians' assistants, and physical therapists—went up from 2009 to 2010 at rates higher than the growth in the number of beneficiaries. In areas where the work GPCI was less than 1, the number of these professionals rose by 6.2 percent. In areas where the work GPCI was greater than or equal to 1, the growth rate was 6.8 percent.

Geographic variation in service use

In the Commission's June 2012 chapter on serving rural Medicare beneficiaries, we concluded that, despite lower physician-to-population ratios and the difficulties in recruiting physicians to practice in rural areas, beneficiaries in rural and urban areas used comparable amounts of health care in every service we examined and across the spectrum of rural areas (from those adjacent to urban areas to those in sparsely populated frontier counties). However, while finding little difference between rural and urban beneficiaries' service use within regions of the country, we found significant differences in health care service use by Medicare beneficiaries *across* regions. Accordingly, rural service use was high in regions where urban use was high, and rural service use was low in regions where urban use was low.

These findings are relevant to the issue of the work GPCI's impact on access to care. First, rural areas—as a group—are among the areas that have work GPCIs less than 1. If we find that service use is comparable in both, we expect a similar result when comparing low-GPCI areas with high-GPCI areas. Second, the findings on service use reported in our June 2012 report—based on data for 2008—are consistent with what we found earlier using 1999 data and before the floor on the work GPCI was implemented in 2004 (Medicare Payment Advisory Commission 2001). This consistency suggests that the floor—which had the effect of raising payments in low-wage areas—has not had an effect on service use or, therefore, access.

Reanalyzing the 2008 data but comparing low-GPCI areas with high-GPCI areas, we see further consistency in results (Table 8-6). The analysis finds that, on average, beneficiaries received similar levels of care whether they lived in areas with a work GPCI less than 1 or in areas with a work GPCI greater than or equal to 1. The distribution of regional variation was similar for both: In areas with a work GPCI less than 1, the number of annual visits per beneficiary ranged from 8 to 13, compared with 8 to 12 visits in areas with a work GPCI greater than or equal to 1. Mean visit rates were also similar: 10.2 visits per year in areas with a work GPCI less than 1 and 10.0 visits per year in areas with a work GPCI greater than or equal to 1.

TABLE 8–6

Beneficiary service use is similar when low-GPCI areas are compared with high-GPCI areas, 2008

Region	Annual visits to physician office or outpatient facility per beneficiary
Range:	
Work GPCIs < 1	8 to 13
Work GPCIs ≥ 1	8 to 12
Mean:	
Work GPCIs < 1	10.2
Work GPCIs ≥ 1	10.0

Note: GPCI (geographic practice cost index). Analysis excludes Puerto Rico and Alaska.

Source: MedPAC analysis of beneficiary-level Medicare spending from the 2008 Beneficiary Annual Summary file.

Variation in service use among statewide localities with both urban and rural areas

Currently, 34 states have a statewide locality for their work GPCI, so the value of the work GPCI is the same across rural and urban areas within that state. To exploit this natural experiment in which areas that may have differences in the underlying cost of physicians' work receive the same GPCI adjustment, we reviewed service use for urban and rural areas within the 34 statewide localities.

In general, service use was similar for rural areas and urban areas within statewide localities (Figure 8-12, p. 220). On average, there were 10.4 visits per beneficiary in the rural areas and 9.7 visits per beneficiary in the urban areas. Further, the differences in service use between rural areas and urban areas *within each locality* were small. While the within-locality differences (a locality's rural visit rate minus its urban visit rate) ranged from −2.5 visits to 2.6 visits among all of the statewide localities, for most of these localities (65 percent), the within-locality differences were much smaller, ranging from −0.5 visit to 1.0 visit. By contrast, visits per beneficiary varied far more widely across the rural and urban areas in the statewide localities, ranging from 7.0 visits to 13.8 visits. In short, the variation in visit rates was much greater between statewide localities than it was within them. Consistent with findings in the Commission's June 2012 chapter on serving rural Medicare beneficiaries, it appears that there are significant differences in service use across regions of the country but little difference between rural and urban beneficiaries' service use within those regions.

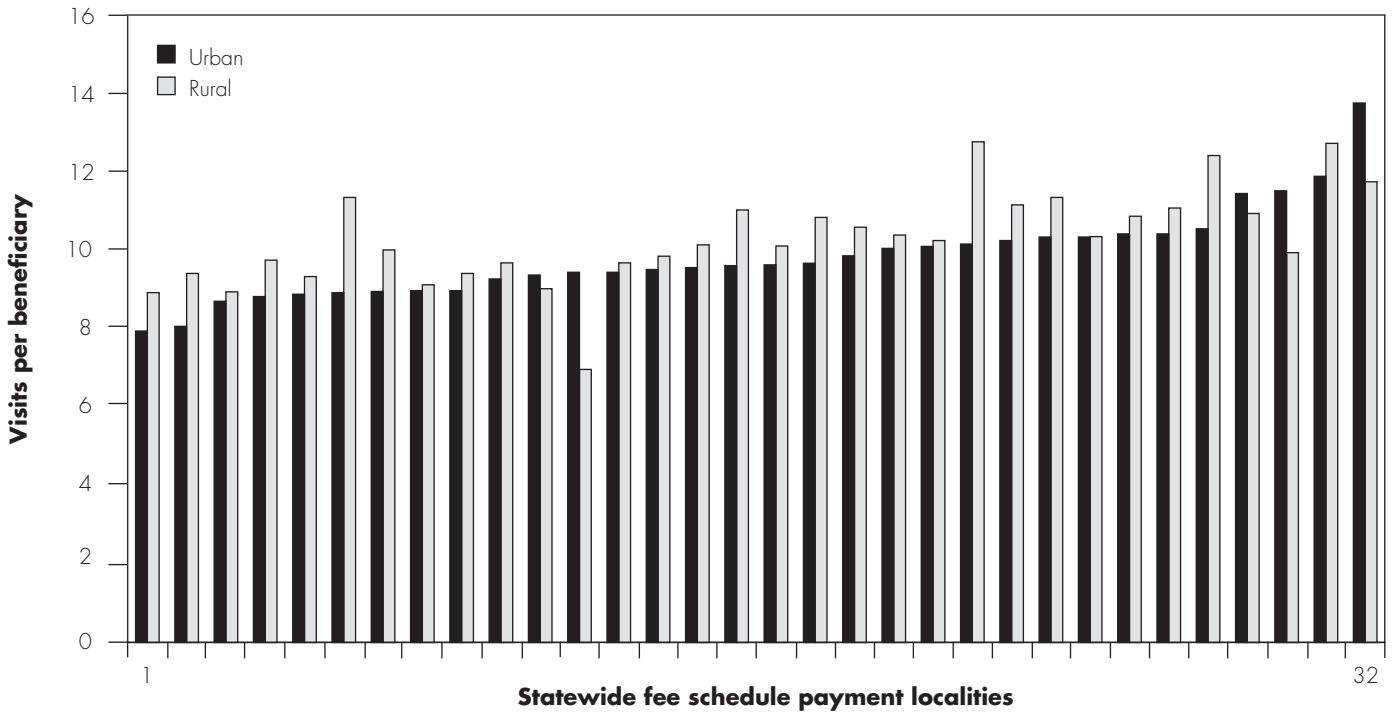
This pattern—similar visit rates in both rural areas and urban areas—is characteristic also of localities that are not statewide (Table 8-7, p. 221). In localities that are not statewide, average visit rates were 10.8 visits per beneficiary in rural areas and 10.2 visits per beneficiary in urban areas.

Relationship between fees and access

The Commission also analyzed the general relationship between fees and access to care—specifically, whether areas with higher physician fees have higher levels of physician access, reflected by shorter wait times, less difficulty finding a practitioner, and so on.

The Center for Studying Health System Change's (HSC's) 2005 Community Tracking Study provides some insight on this question. In 2002, physicians' fees under Medicare were cut by 5.4 percent pursuant to the sustainable growth rate. The HSC study found that Medicare beneficiaries were no more likely to report that they delayed or did not receive needed care between 2001 and 2003—that is, before and after the fee cut went into effect. In fact, the number of Medicare beneficiaries reporting that they delayed or had forgone needed care went down over this time period, and the rates also improved for near-aged enrollees in the private market. This finding suggests that broader market trends were affecting access, not the fee cut in Medicare. Other measures of access such as the average wait times for visits with primary care physicians or specialists for Medicare beneficiaries remained

FIGURE 8–12 **Service use is similar for rural and urban areas in statewide localities, 2008**



Note: Visits are to a physician's office or outpatient facility. There are 34 statewide payment localities. Analysis excludes Puerto Rico and Alaska. Rural areas are nonmetropolitan areas.

Source: MedPAC analysis of beneficiary-level Medicare spending from the 2008 Beneficiary Annual Summary file.

relatively constant between 2001 and 2003 (Trude and Ginsburg 2005).

Furthermore, the HSC study also found that Medicare beneficiaries in areas where private rates were significantly higher than Medicare rates were no more likely to face access problems than Medicare beneficiaries in areas where private fees were closer to Medicare rates. One could theorize that, if payment rates had a significant effect on access, beneficiaries in areas where private sector rates are much higher than Medicare rates could face difficulty in obtaining care. However, the study found no differences in access across areas with a low differential between Medicare and private insurers and areas with a high differential between Medicare and private insurers (Trude and Ginsburg 2005).

Effect of work GPCI on spending

To assess the impact of the work GPCI on spending, we considered its impact on payment rates for specific services across localities. We also analyzed the budgetary impact of alternatives to current law.

Examples of how payment rates vary across localities

The work GPCI's effect on payments for fee schedule services depends on the value of the GPCI and the share of the payment that accounts for work (as opposed to practice expense and professional liability insurance). For instance, the effect of the work GPCI on total payment differs for evaluation and management services, imaging, and surgery (Table 8-8). In general, evaluation and management services have about an average share of the payment attributable to work, imaging has a lower share of the payment attributable to the work component, and surgery has a higher proportion of the total payment attributable to work.

Spending impacts of alternatives to current law

In November 2012, when the Commission voted on the recommendation developed in light of our analytic

work on the work GPCI over the prior year, there was a temporary floor of 1.0 for localities with a work GPCI less than 1. This temporary floor was scheduled to expire at the end of calendar year 2012.[11] After that, payments in localities with a work GPCI of below 1.0 would go down. The Commission considered two policy options to this then-current-law scenario: repealing the work GPCI or extending the floor.

The first option, to repeal the work GPCI, would likely result in a small increase in Medicare spending because more RVUs of work are furnished in localities with a work GPCI below 1.0 than in localities with a work GPCI of 1.0 or above. In other words, the increases in payment would be larger than the decreases in payments, resulting in a cost. The second option, retaining the floor of 1.0 for the work GPCI, would have a more significant cost. These impacts would be the same relative to current law, under which the work GPCI floor expires at the end of 2013.

Recommendation

The Commission finds the following evidence of the need for geographic adjustment of fee schedule payments for professional work:

- Cost of living varies geographically.
- Earnings vary geographically for the professionals in the work GPCI's reference occupations.

TABLE 8–7

Rural and urban area visit rates are similar in statewide and other localities, 2008

	Annual visits per beneficiary		
	Urban	Rural	Difference
Statewide localities	9.7	10.4	0.7
Other localities	10.2	10.8	0.6

Note: Visits are to a physician's office or outpatient facility. Analysis excludes Puerto Rico and Alaska. Rural areas are nonmetropolitan areas.

Source: MedPAC analysis of beneficiary-level Medicare spending from the 2008 Beneficiary Annual Summary file.

- To the extent we can measure geographic variation in physician earnings, those earnings vary, suggesting that the market for physician services is not uniform nationally.
- Medicare explicitly recognizes variation in the earnings of other health care workers by geographically adjusting the labor portion of payments to other provider types.

However, the current adjustment—the work GPCI—is flawed in concept and implementation. The Secretary should replace it. Conceptually, the GPCI is based on the earnings of professionals in the reference occupations, but the labor market for those professionals does not appear to resemble the labor market for physicians and other health

TABLE 8–8

Examples of variation in payment due to work GPCI, 2012

	Evaluation and management visit	Transthoracic echocardiography, complete	Total knee arthroplasty
National payment amount	$70.46	$213.08	$1,544.29
Effect of work GPCI			
10th percentile (West Virginia)	–$1.22	–$1.64	–$29.28
90th percentile (NYC suburbs)	+$1.62	+$2.16	+$38.77
Percentage difference between 90th and 10th percentile	4.0%	1.8%	4.4%

Note: GPCI (geographic practice cost index), NYC (New York City). Effects are only of the work GPCI and reflect no other geographic adjustments. The evaluation and management visit is Current Procedural Terminology (CPT) code 99213. The echocardiography service is CPT code 93306. The knee arthroplasty service is CPT code 27447. Percentages calculated with amounts in table may not equal results shown due to rounding.

Source: CMS physician fee schedule final rule for 2012.

professionals. Implementation of the work GPCI is flawed because no sources of data on the earnings of physicians and other health professionals appear to be of sufficient quality to validate the GPCI.

While there is evidence that the work GPCI is flawed, it is not sufficiently definitive to execute an immediate change in current law.

- The data are insufficient to establish a new index in the short run.
- We are unable to determine whether the work GPCI has an effect on quality of care.
- There is no evidence that the GPCI affects access. Moreover, access is better addressed through other targeted policies, such as the primary care bonus.
- Current law requires a one-quarter GPCI applied to all localities and expiration of the floor. Extension of the floor would increase Medicare spending. Other departures from current law would redistribute payments among localities without clear evidence of a known effect on access and without evidence of an improvement in equity.

RECOMMENDATION 8

Medicare payments for work under the fee schedule for physicians and other health professionals should be geographically adjusted. The adjustment should reflect geographic differences across labor markets for physicians and other health professionals. The Congress should allow the geographic practice cost index (GPCI) floor to expire per current law and, because of uncertainty in the data, should adjust payments for the work of physicians and other health professionals only by the current one-quarter GPCI and direct the Secretary to develop an adjuster to replace it.

RATIONALE 8

This recommendation responds to the flaws in concept and implementation of the current work GPCI and calls on the Secretary to replace the current GPCI with one that reflects the labor market for physicians and other health professionals. Three paths could be pursued in developing the data to support a new geographic adjustment for physician work.

The first approach would have the Medicare program directly collect data on the earnings and service volume of physicians and other health professionals. This approach would have the benefit of using directly observed physician earnings, and CMS could define the scope and breadth of the data collection. One drawback is that CMS has had difficulty in the past fielding physician surveys. Furthermore, directly observing physician earnings raises the concern that the earnings reflect geographic variation in return on investment (profitability of practices) and variation in the volume of services provided under FFS, as well as market concentration of insurers or providers. Another issue is the circular relationship between the GPCI and the data used to construct it that would result if data on the earnings of physicians and other health professionals were used to construct the work GPCI.

However, the method of data collection can overcome some of these factors to the extent they are observable. For example, the concern about representation of return on investment in the earnings data could be addressed by including only data for physicians and other health professionals who are not practice owners but instead are employees.[12] A strategy for overcoming the effect of service volume on earnings would be to collect the data as earnings per unit of work effort, such as earnings per RVU. Regardless of the data collection methods chosen, the use of CMS to collect these data would require significant administrative resources. Further, despite the best possible efforts to ensure that the data collected are as free as possible of the confounding factors discussed above, it is likely that such data will never be perfect, and thus any gains in precision stemming from such efforts would need to be seriously weighed against the cost of collecting these data.

The second approach in studying physician earnings would use private market fees paid to physicians and other health professionals. On the one hand, a market fee for a specific service would circumvent the effect of volume on physician earnings. The data are also more likely to be readily available and would not require CMS to collect additional data. On the other hand, the use of market fees would include the influences on physicians' earnings of return on investment and market consolidation. Analyses of private market fees conducted by the Commission and others have shown wide variation even within markets for the same service (Medicare Payment Advisory Commission 2011a).

The third approach would base the work GPCI on an alternative, such as a cost-of-living index or the hospital wage index. Such alternatives have the advantage of availability: They exist for other purposes and would not require an investment of resources for data collection.

However, it would be necessary to establish whether any such alternative to the work GPCI is a valid measure of geographic variation in the work effort of physicians. The work GPCI is intended to account for geographic variation in cost of living but also in professional factors, such as access to quality colleagues, and personal factors, such as availability of good schools. It is unclear whether these factors are adequately represented by alternative indexes such as a cost-of-living index or the hospital wage index.

In developing a new geographic adjustment for physician work, the Secretary should adhere to certain deadlines. By law, the GPCIs have been updated at least every three years since the fee schedule was instituted in 1992, with the seventh in the series of such updates scheduled for 2014. Within the next year, the Secretary should have a plan for a new work GPCI. It should be implemented as part of the upcoming GPCI update.

IMPLICATIONS 8

Spending

- Because the recommendation follows current law, it will not directly affect program spending.

Access

- We do not expect the recommendation to affect beneficiaries' access to the services of physicians and other health professionals or the willingness of these providers to provide care to Medicare beneficiaries.

Quality

- We expect that the recommendation is neutral with respect to quality of care (has no implications).

Delivery system reform

- We expect that the recommendation is neutral with respect to advancing delivery system reform. ■

Endnotes

1 For further information, see the Commission's *Payment basics: Physician services payment system* (Medicare Payment Advisory Commission 2012a) .

2 These IOM simulations are based on continuation of the current work GPCI with its one-quarter limit on variation in input prices among geographic areas and no floor on the GPCI.

3 On the point about factors other than financial considerations influencing supply, research has shown that compensation is not the only factor influencing specialty choice and that other factors—such as the ability to master an area of clinical practice—may be more important (Borman et al. 2010).

4 Limitations of the American Community Survey (ACS) noted by the IOM committee were, first, that the data include the earnings of residents in addition to the earnings of other physicians. Second, the ACS data include data on both employed and self-employed physicians. Therefore, in the case of the self-employed physicians, the earnings data would include not just earnings from patient care but also the return on investment from owning and operating a practice. Third, representation of different specialties in the data could vary annually depending on the specialties of the physicians reporting data.

5 C2ER is a membership organization focused on community and economic research. Its members include research professionals from chambers of commerce, government agencies, utility companies, and universities. The C2ER website is http://www.c2er.org.

6 The composite index is an index of price levels in urban areas. The survey upon which the index is based is voluntary. The urban areas represented can vary over time.

7 For reference, the work GPCI—as limited to one-quarter of a locality's relative cost—ranges from 0.945 to 1.077 (excluding Puerto Rico's GPCI of 0.908 and Alaska's legislated GPCI of 1.500).

8 In 2007, the Commission recommended repealing the current hospital wage index statute and establishing in its place a hospital compensation index that uses wage data for all employers and industry-specific occupational weights, is adjusted for geographic differences in the ratio of benefits to wages, is adjusted at the county level, and smooths large differences between counties.

9 The data provided by MGMA were in the form of an index of physician compensation per work RVU. Index values were calculated by dividing mean compensation per work RVU for a given area by the mean value for all MGMA survey respondents. Data for rural physicians were from respondents who identified their practices as being in a nonmetropolitan area with a population of less than 50,000. Data for urban physicians were from respondents who identified their practices as being in a metropolitan area with a population of more than 50,000.

10 To limit any effect that return on investment may have on physician compensation, we had hoped to analyze data for employed physicians separately from data for self-employed physicians. However, data limitations prevented us from doing so. See the contractor's report, available at http://www.medpac.gov, for further details.

11 The American Taxpayer Relief Act of 2012 extended the GPCI floor by one year.

12 Nonetheless, any data collected on employed physicians may be affected by factors other than return on investment, such as the market factors discussed earlier.

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