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Review of Physician Practice Expense Geographic Adjustment Data

Report

Prepared for

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RTI INTERNATIONAL

REVIEW OF PHYSICIAN PRACTICE EXPENSE GEOGRAPHIC ADJUSTMENT DATA

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EXECUTIVE SUMMARY

Background

The Geographic Practice Cost Indexes adjust Medicare physician fees for area differences in the costs of practice. This report describes the demonstration-based review of the practice expense Geographic Practice Cost Index (PE GPCI) performed by RTI International and the Urban Institute under contract to the Centers for Medicare and Medicaid Services (CMS). The review of the PE GPCI was mandated by Section 605 of the Medicare Modernization and Improvement Act of 2003 (MMA). The report describes the organization and outcome of two meetings held in Iowa and Maine to review the PE GPCI with local physician organizations and representatives. The report also presents the evaluation of alternative data sources for each component of the PE GPCI, including the shares of various components in total physician practice expenses, the index of wages of non-physician occupations employed by physician practices, the index of relative office rental costs paid by physician practices, and other expenses.

Iowa and Maine Review Meetings

Iowa and the "rest of Maine" payment localities were chosen for a demonstration-based review of the PE GPCI as a statewide locality and a locality that includes rural areas, as required by the MMA. Both localities have PE GPCIs values that are low relative to the national average, have low physician-to-population ratios, and have high proportions of their populations living in rural areas and enrolled in Medicare. We organized meetings in each locality in conjunction with the state medical societies and other organizations representing physicians. Physicians, practice managers, representatives of physician associations, and expert consultants attended the meetings, along with project staff and a CMS representative.

Presentations and discussion at the Iowa and Maine meetings raised a number of issues related to rural medical practice. Many of the issues were related to additional expenses or challenges faced by rural practices rather than to data sources or technical aspects of the PE GPCI. We summarize the issues that were mentioned in this report, but our analysis focused on alternative data sources for the PE GPCI, as required by the MMA.

Practice Cost Shares

Following the suggestions of participants in the Iowa and Maine meetings, we examined Medical Group Management Association (MGMA) data on practice cost shares. We recognize that these data need to be used cautiously because they represent a small, non-random sample of physician practices. However, to the extent that these data are viewed favorably within the physician community – and they appear to be based on the input we received in Iowa and Maine – they support the view that there is no need to recognize differences in cost shares in non-metropolitan areas.

CMS has historically used American Medical Association (AMA) physician survey data to calculate practice cost shares for the GPCI. It is difficult to make a rigorous comparison between the AMA and MGMA data on cost shares. However, the data presented here suggest that PE GPCI weights derived from the MGMA data on the components of practice costs (e.g.,

office rents and non-physician employee wages) would be quite different that those used in the current index, despite the fact that overall practice expenses as a share of practice revenues in the MGMA data are only slightly higher than those in the AMA surveys. In all likelihood, sometime between now and the next update of the PE GPCI weights, consideration should be given to working collaboratively with MGMA to subject their data to more testing and to develop an approach for combining the MGMA data on different types of practices into a single set of national estimates.

Non-Physician Employee Wages

The Decennial Census long form data that have been used to measure wages of employees in physician offices will not be available in the future. We examined three data sources that could be used to replace the Decennial Census:

- The U.S. Census Bureau's American Community Survey (ACS);
- The U.S. Bureau of Labor Statistics' Occupational Employment Statistics (OES) series; and
- CMS' Hospital Wage Index data (HWI).

Each of these data sources, we believe, would constitute a reasonable choice for future updates of the PE GPCI's employee wage index. The ACS is very similar to, and the successor to, the Decennial Census long form data. The ACS can be used for the physician work GPCI as well as the PE GPCI. The ACS data accumulate to sample sizes comparable to the Decennial Census long form data in all geographic areas over 5 years. The full ACS sample will not be available until 2010. The OES data collect wages paid to actual employees of physician offices and thus can replace the "proxy" data currently used in the PE GPCI with actual employee wage data. The OES data include wages on more occupations and are more up-to-date than the other two sources. The HWI data have the advantage of measuring total compensation, not just wages, and provide an acceptably accurate measure, we believe, of relative costs by area of employees of physician offices.

We computed relative wages using each of these data sources and found that relative wages were quite similar for most areas across all three data sets. The choice of one data source versus another will not have a large impact on the PE GPCI or on Medicare physician payments to an area. All three data sources are sponsored by U.S. government agencies and are readily accessible at low cost.

Further assessments of the various datasets should be performed. While the OES data appear most promising, CMS would need to negotiate a special tabulation of OES data with BLS because BLS does not make the entire OES dataset publicly available. Additionally, some critical data for the GPCI--in particular, for non-metropolitan areas and for offices of physicians by area--are not routinely published by BLS. Once these data were obtained, analysis would be necessary to determine the most appropriate components of the OES data to use for the employee wage index.

Physician Office Rents

The Department of Housing and Urban Development Fair Market Rents (FMRs) for apartments have been used to measure variation in relative rents across areas. A long-standing concern about the FMRs is that, as a measure of residential rents, they lack face validity as a proxy for relative physician office rents. Comments offered in response to *Federal Register* notices have often suggested that a measure of commercial office rents would be more appropriate for the PE GPCI.

As recommended by the Government Accountability Office (GAO, 2005), we examined a source of commercial rents available nationwide--U.S. Postal Service leases for postal buildings. We engaged Professor Anthony Yezer of George Washington University as a consultant to this project. Dr. Yezer has been working with the USPS data and has produced "constant quality" rent indexes.

Dr. Yezer provided us with rental index values for 22 cities. Although not implausible (Dr. Yezer's index appears to be highly correlated with relative FMRs, the current basis of the GPCI office rental index), the data Dr. Yezer provided us are not sufficient to allow a full evaluation of his methods. In particular, Dr. Yezer has not yet supplied any data on rural areas.

Further, we have some concerns about the postal data. Our major concern is that small numbers of buildings in some areas may lead to a large amount of random error in rental estimates. Dr. Yezer's database and methods are essentially proprietary, and CMS would have to negotiate regular and timely access to his data and methods if they were to be used for the PE GPCI.

Given the interest in a commercial rental index, it may be reasonable for CMS to further study the postal rental data. This could involve a two-pronged approach. First, contract with Dr. Yezer to obtain rental estimates using his methods for a larger number of areas, including rural areas, and further document and evaluate his methods. Second, CMS could obtain the USPS data and develop and evaluate a fully documented and accessible postal rental index.

A final possibility is primary collection of data on actual physician office rents. We believe that the benefits in greater payment accuracy of collection of data on actual physician office rents may not justify its costs and burdens. But a feasibility study of this issue could provide more definitive information.

Supplies, Equipment, and Miscellaneous Expenses

At the time the PE GPCI was initially developed, no credible data to measure area variation in prices of supplies, equipment, and other expenses appeared to exist. Moreover, given the widespread availability of these practice inputs, and their mobility across areas, it is unlikely that major price differentials would persist and the inputs were assumed to be priced uniformly across localities. Subsequent interviews with representatives of medical equipment manufacturers and medical supply trade associations confirmed that data was not easily attainable but that the assumption of national uniformity was reasonable. Although participants in the Iowa and Maine meetings raised some issues about these inputs, in the end, they did not seem uncomfortable with continuing the existing policy of no geographic adjustment for these input prices.

SECTION 1
BACKGROUND

The Geographic Practice Cost Indexes (GPCIs) play an important role in determining Medicare physician fees. GPCIs are combined with service-specific relative value units (RVUs) to determine the physician payment for a service in an area. The three GPCIs–for work, practice expense, and malpractice–vary across payment localities, thereby causing the Medicare Fee Schedule payment for the same service to be different in different geographic areas.[1] As their name suggests, the GPCIs are intended to adjust physician payments for geographic variations in cost of practice. Despite the use of the GPCIs in the Medicare physician fee schedule, they have been criticized for a number of reasons (e.g., American Academy of Family Physicians, 2003; Kitchell, 2003). One of the more prominent concerns is that the data used to measures geographic variation in non-physician employee wages and office rents do not accurately reflect the actual input prices faced by physicians. In addition, rural physicians have claimed that their costs for equipment and supplies are higher than those in urban areas and that the GPCI's assumed uniformity in these costs is inequitable.

This report describes the demonstration-based review of the practice expense, GPCI (PE GPCI) performed by RTI International and the Urban Institute under contract to the Centers for Medicare and Medicaid Services (CMS). We do not examine the work or malpractice GPCIs. The review of the PE GPCI was mandated by a provision in the Medicare Modernization and Improvement Act of 2003 (MMA), which is included as Table 1-1. This report describes the organization and outcome of two meetings held in Iowa and Maine to review the PE GPCI with local physician organizations and representatives. The report also covers the evaluation of alternative data sources for each component of the PE GPCI including the shares of various components in total physician practice expenses, the index of wages of non-physician occupations employed by physician practices, the index of relative office rental costs paid by physician practices, and other expenses.[2]

Section 2 of this report provides a complete review of the site selection process, organization, and results of the PE GPCI meetings held in Iowa and Maine.[3] The remainder of the report reviews and discusses sources of alternative data for each of the practice expense components and the weights used to create the final PE GPCI. Section 3 investigates the cost shares used to weight the components of the PE GPCI. The current cost shares are based on American Medical Association (AMA) physician survey data. Medical Group Management Association (MGMA) cost survey data are examined as an alternative.

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[1] An overview of the Medicare physician payment system is included as Appendix A. Appendix C contains the 2005 Practice Expense Geographic Practice Cost Index by Payment Locality.

[2] A review of previous studies of alternative data sources for the PE GPCI is included as Appendix B.

[3] Appendix E includes presentations and discussion materials from the two meetings.

Table 1-1
Medicare Modernization Act Provision on the Practice Expense GPCI

SEC. 605. COLLABORATIVE DEMONSTRATION-BASED REVIEW OF PHYSICIAN PRACTICE EXPENSE GEOGRAPHIC ADJUSTMENT DATA.
(a) IN GENERAL.—Not later than January 1, 2005, the Secretary shall, in collaboration with State and other appropriate organizations representing physicians, and other appropriate persons, review and consider alternative data sources than those currently used in establishing the geographic index for the practice expense component under the Medicare physician fee schedule under section 1848(e)(1)(A)(i) of the Social Security Act (42 U.S.C. 1395w–4(e)(1)(A)(i)).
(b) SITES.—The Secretary shall select two physician payment localities in which to carry out subsection (a). One locality shall include rural areas and at least one locality shall be a statewide locality that includes both urban and rural areas.
(c) REPORT AND RECOMMENDATIONS.— (1) REPORT.—Not later than January 1, 2006, the Secretary shall submit to Congress a report on the review and consideration conducted under subsection (a). Such report shall include information on the alternative developed data sources considered by the Secretary under subsection (a), including the accuracy and validity of the data as measures of the elements of the geographic index for practice expenses under the Medicare physician fee schedule as well as the feasibility of using such alternative data nationwide in lieu of current proxy data used in such index, and the estimated impacts of using such alternative data. (2) RECOMMENDATIONS.—The report submitted under paragraph (1) shall contain recommendations on which data sources reviewed and considered under subsection (a) are appropriate for use in calculating the geographic index for practice expenses under the Medicare physician fee schedule.

The largest component of physician practice expenses is non-physician employee wages. Section 4 investigates three alternative data sources for the employee wage measure, which is currently based on the Decennial Census: the U.S. Census Bureau American Community Survey (ACS), the CMS Hospital Wage Index, and the U.S. Bureau of Labor Statistics Occupational Employment Statistics (BLE OES) data. Each data source is analyzed with respect to its face validity, geographic coverage, reliability, and availability.

Section 5 reviews data sources for office rental and other expenses. In this section we discuss the U.S. Department of Housing and Urban Development's Fair Market Rents currently used to prepare the PE GPCI office rental index, and compare it to U.S. Postal Service building lease data. Post office lease data were analyzed by Dr. Anthony Yezer for this report. A short paper on measuring geographic variation in office rents written by Dr. Yezer is included as Appendix E.

Section 6 of this report provides conclusions regarding alternative data sources we evaluated. In addition, this section discusses additional issues in rural practice raised during the Iowa and Maine review meetings as described in Section 2.

SECTION 2
PAYMENT LOCALITY PRACTICE EXPENSE MEETINGS

As required by Section 605 of the 2003 Medicare Modernization Act, two meetings were held with state and other appropriate organizations representing physicians and other appropriate persons to review and consider alternative data sources than those currently used in establishing the geographic index for the practice expense component for the Medicare physician fee schedule. According to Subsection (b) of Section 605, the meetings were to be held in two physician payment localities. One of the localities was to include rural areas, and the other locality was to be a statewide locality with both urban and rural areas.

This chapter reviews the two locality meetings that were held. Section 2.1 explains how the two locations for the meetings were selected. Section 2.2 describes the meeting participants and agendas for each of the two meetings. Section 2.3 provides a combined summary of the two locality meetings, and Section 2.4 describes the implications of the two locality meetings.

2.1 Selection of Localities

The Secretary was required, in Section 605(a) of the Medicare Drug, Improvement and Modernization Act of 2003, to "review and consider alternative data sources than those currently used in establishing the geographic index for the practice expense component." The legislation went on to say that "the Secretary shall select two physician payment localities in which to carry out subsection (a). One locality shall include rural areas and at least one locality shall be a statewide locality that includes both urban and rural areas."

Based on the wording of the provision in Section 605 and what we understood about the its origins, we concluded that both localities should include rural areas and have PE GPCI values that were low relative to the national average. For these purposes, we defined "low" as a 2005 PE GPCI value of below 0.90. The group includes 18 statewide localities (Alabama, Arkansas, Idaho, Iowa, Kansas, Kentucky, Mississippi, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Puerto Rico, South Carolina, South Dakota, Tennessee, West Virginia, and Wyoming) and 6 "rest of state" localities (Georgia, Illinois, Louisiana, Maine, Missouri, and Texas).

An additional consideration in selecting localities for this study relates to the role played by the Geographic Equity in Medicare (GEM) Coalition. This group of 25 state medical societies and the American Society of General Surgeons was spearheaded by the Iowa Medical Society in response to " substantial geographic disparity in patient services and physician reimbursement levels in the Medicare Part B program."[4] The states that are members of GEM are, on average, more rural that the rest of the country. One major goal of the GEM coalition was "eliminating the Geographic Practice Cost Indices … that result in this inappropriate and inequitable reimbursement (to physicians)." One incremental step that GEM achieved in the Medicare Drug, Improvement and Modernization Act of 2003 was the establishment of a floor on the Work GPCI of 1.0 for 2004 through 2006. Given GEM's activities and the fact that it was based at the Iowa Medical Society, it seemed clear that one of the two physician payment localities should be

4 Initially, the American Academy of Family Physicians was also a member of the GEM coalition.

Iowa. Iowa is a statewide locality that fits the first or second criterion of selecting localities and has a 2005 PE GPCI of 0.872.

For the purposes of selecting a second locality, we assumed that Iowa would serve as the statewide locality that includes both urban and rural areas and tried to identify another locality from the set of "rest of state" localities with low PE GPCIs. We were looking for a "rest of state" locality because those always include rural areas. The Maine Medical Association and its staff showed a great deal of interest in the study and agreed to coordinate a meeting. The staff offered to convene physicians from a wide range of communities within the Rest of Maine locality as well as from Southern Maine.

Table 2-1 shows selected characteristics for the Iowa and Maine payment localities (the Southern Maine locality is included for completeness). In addition to having low PE GPCIs, the Iowa and Rest of Maine localities also have below average physician-to-population ratios and an above average share of their populations covered by Medicare. Relative to the national average of 14 percent, 19 percent of the people in the Rest of Maine are covered by Medicare as are 17 percent in Iowa. Perhaps the most striking characteristic of these localities is the share of the population that lives in non-metropolitan counties. In Iowa, 55 percent of the people live in non-metropolitan counties; in the Rest of Maine, 65 percent of the people live in non-metropolitan counties. In comparison, only 19 percent of the U.S. population resides in a non-metropolitan county. Although the overall poverty rates in these two localities are at or below the national rate, per capita incomes are below average. The economic circumstances of the elderly differ between Iowa and the Rest of Maine. Poverty rates for the elderly are lower in Iowa (7.3 percent) and higher in the Rest of Maine (11.3 percent) than they are nationally (9.5 percent).

The two localities chosen–Iowa and the Rest of Maine–provide a strong foundation for the study mandated in the MMA. They fit within the criteria about the inclusion of rural areas and have low PE GPCI values. In fact, they are predominantly rural localities, as measured by the share of the population living in non-metropolitan counties. Moreover, the potential exists for Medicare beneficiaries to face access problems in both localities because of the low physician-to-population ratios and the large share of the population covered by Medicare.

2.2 Meeting Process

Figure 2-1 lists the meeting participants for the Iowa PE GPCI meeting, and Figure 2-2 lists the meeting participants for the Maine PE GPCI meeting.

2.2.1 Iowa

In addition to the Iowa Medical Society, the Iowa Academy of Family Physicians helped us organize the meeting. We planned to have a relatively small working meeting consisting of 15 to 25 attendees, not a large conference. Dr. David Carlyle, a family practitioner at McFarland Clinic in Ames, Iowa, agreed to chair the meeting. Presentations by Susan Kell, RN, BSN, Program Director for the Iowa Academy of Family Physicians; Michael Kitchell, MD, President of McFarland Clinic; and James Palazzo, Chief Executive Officer of the Iowa Heart Center in Des Moines, were arranged.

Table 2-1
Selected characteristics of Iowa and Maine localities

	United States	Iowa	Rest of Maine	Southern Maine
PE GPCI, 2005	1.0	0.872	0.898	1.006
Work GPCI, 2005	1.0	1.0	1.0	1.0
Malp. GPCI, 2005	1.0	0.589	0.637	0.637
Work GPCI, 2003 (pre-floor)	1.0	0.959	0.961	0.979
Physicians per 100,000 population (non-federal), 2000	252	174	206	306
Physicians per 100,000 Medicare beneficiaries (non-federal), 2000	1,768	1,042	1,114	1,923
Medicare beneficiaries, share of population, 2000	14%	17%	19%	16%
Distribution of Medicare beneficiaries by eligibility category, 2003				
Aged	87%	90%	82%	85%
Disabled	13%	10%	18%	15%
Percent population in rural area (non-MSA), 2003	19%	55%	65%	0%
Percent of elderly population below poverty, 1999	9.5%	7.3%	11.3%	8.0%
Percent of total population below poverty, percent, 1999	12%	9%	12%	8%
Per capita income, 1999	$29,412	$26,427	$23,333	$29,100

NOTES: Ranks are listed in parentheses and include the District of Columbia.
*****Excludes Cumberland and York counties.

SOURCE: Kaiser Family Foundation State Health Facts, 2003 Area Resource File, US Census Bureau**.**

We also contacted several national physicians' organizations. We invited representation from the largest multi-specialty physician organization, the American Medical Association. Sandra Marks, Assistant Director of Federal Affairs for the AMA, attended the meeting. We also felt it was important to have the viewpoint of surgeons so invited a representative from the American College of Surgeons. Dr. Frank Opelka, a Fellow of the American College of Surgeons, is based in Boston and could also provide the perspective of an urban physician.

In addition to physician organizations, MMA requires us to conduct the GPCI review in collaboration with "other appropriate persons." We contacted several experts in rural health policy in government and the private sector and reviewed available literature on the GPCIs and

Figure 2-1
Meeting participants – Iowa meeting

Michael Abrams
Executive Vice President
Iowa Medical Society
Des Moines, Iowa

Cynthia Brown
Director, Division of Advocacy and Health Policy
American College of Surgeons
Washington, D.C.

David Carlyle, M.D.
Family Medicine
McFarland Clinic
Ames, Iowa

Jennifer Davis
Member Advocacy Director
Iowa Academy of Family Physicians
Des Moines, Iowa

Susan Kell, R.N., B.S.N.
Program Director
Iowa Academy of Family Physicians
Des Moines, Iowa

Michael Kitchell, M.D.
Neurologist
McFarland Clinic
Ames, Iowa

Jesse Levy, Ph.D.
Office of Research, Development, and Information
Center for Medicare and Medicaid Services
Baltimore, Maryland

Sandra Marks
Assistant Director, Federal Affairs
American Medical Association
Washington, D.C.

Joshua McFeeters, M.P.P.
Research Associate
The Urban Institute
Washington, D.C.

Brent Miller
Director, Federal Government Relations
Marshfield Clinic
Marshfield, Wisconsin

Keith Mueller, Ph.D.
Director
RUPRI Center for Rural Health Policy Analysis
Omaha, Nebraska

Frank G. Opelka, M.D., FACS
Vice Chief of Surgery
Beth Israel Deaconess Medical Center
Boston, Massachusetts

Eric Olmsted, Ph.D.
Research Economist
RTI International
Waltham, Massachusetts

James Palazzo, M.B.A.
Chief Executive Officer
Iowa Heart Center
Des Moines, Iowa

Gregory C. Pope, M.S.
Co-Director Health, Economics, and
Finance Program
RTI International
Waltham, Massachusetts

Steven Richards, M.D.
Iowa Medical Society
Des Moines, Iowa

Janet Silversmith
Director, Department of Health Economics
and Policy Analysis
Minnesota Medical Association
Minneapolis, Minnesota

Stephen Zuckerman, Ph.D.
Principal Research Associate
The Urban Institute
Washington, D.C.

Figure 2-2
Meeting participants – Maine meeting

Glenn Beaulieu
Augusta Family Physicians
Augusta, Maine

Cindy Cormier
Practice Administrator
Waterville OB/GYN
Waterville, Maine

Kevin S. Flanigan, M.D.
President
Sebasticook Valley Primary Care
Pittsfield, Maine

Sandra Grant
Practice Administrator
Medical Rehabilitation Associates
Lewiston, Maine

Jane Ham
Director
Maine Recruitment Center
Augusta, Maine

James Harrison
Practice Administrator
PrimeCare Physician Associates
Biddeford, Maine

Mike Hendrix
Controller
Mayo Regional Hospital
Dover Foxcroft, Maine

Jesse Levy, Ph.D.
Office of Research, Development, and Information
Center for Medicare and Medicaid Services
Baltimore, Maryland

Joshua McFeeters, M.P.P.
Research Associate
The Urban Institute
Washington, D.C.

Buell A. Miller, M.D.
Maine Medical Association
Manchester, Maine

Eric Olmsted, Ph.D.
Research Economist
RTI International
Waltham, Massachusetts

Gregory C. Pope, M.S.
Co-Director Health, Economics, and Finance Program
RTI International
Waltham, Massachusetts

Gordon H. Smith, Esq.
Executive Vice President
Maine Medical Association
Manchester, Maine

David Winslow
Vice President of Financial Policy
Maine Hospital Association
Augusta, Maine

Stephen Zuckerman, Ph.D.
Principal Research Associate
The Urban Institute
Washington, D.C.

rural practice issues to identify other appropriate persons to invite. Based on this review, we invited Brent Miller, Director of Federal Government Relations for the Marshfield Clinic in Wisconsin, and Keith Mueller, Ph.D., Director of the Rural Policy Research Institute (RUPRI) Center for Rural Health Policy Analysis in Omaha, Nebraska. Mr. Miller is actively involved in rural health policy and GPCI issues from the perspective of a large physician group practice located in a rural area of a state adjacent to Iowa. Dr. Mueller is an expert in rural health policy and is co-author of a recent RUPRI Policy Brief on rural issues in the GPCI-PE.

Jesse Levy, Ph.D., represented CMS at the meeting. Gregory Pope, M.S. (by phone), Eric Olmsted, Ph.D., and Jill Snider of RTI International attended, as did Stephen Zuckerman, Ph.D., and Joshua McFeeters, M.P.P., of the Urban Institute.

2.2.2 Maine

The Maine Medical Association helped us organize the meeting. We planned to have a relatively small working meeting consisting of 15 to 25 attendees, not a large conference. Presentations by Glenn Beaulieau, Augusta (Maine) Family Physicians; Cindy Cormier, Waterville (Maine) OB-Gyn; Kevin Flanigan, MD, Sebasticook Valley (Maine) Primary Care; Sandy Grant, Medical Rehabilitation Associates (Lewiston, Maine); Jane Ham, Maine Recruitment Center (Augusta, Maine); James Harrison, PrimeCare Physician Associates (Biddeford, Maine); and Mike Hendrix, Mayo Regional Hospital (Dover-Foxcroft, Maine) were arranged.

We also contacted several national physicians' organizations. We invited representation from the largest multi-specialty physician organization, the American Medical Association. Sandra Marks, Assistant Director of Federal Affairs for the AMA, was invited to the meeting but could not attend due to bad weather.

Jesse Levy, Ph.D., represented CMS at the meeting. Gregory Pope, M.S. and Eric Olmsted, Ph.D. of RTI International attended, as did Stephen Zuckerman, Ph.D., and Joshua McFeeters, M.P.P., of the Urban Institute.

2.2.3 Meeting Organization

Our goal for both meetings was to review the PE GPCI with physicians from Iowa and Maine, their representatives, and other meeting attendees and to engage in a productive exchange of information about alternative data sources as well as a discussion of issues related to rural practices. Figures 2-3 and 2-4 present the agendas for the Iowa and Maine meetings, respectively. The first 30 minutes of each 1-day meeting were devoted to introductions, statement of purpose, and CMS perspective. Then RTI and Urban Institute staff spent roughly 1 hour reviewing background on the GPCI, including its history and previous studies of alternative data sources. The next several hours were devoted to presentations on the PE GPCI from physicians or their representatives. This was followed by a structured discussion of each component of the PE GPCI. The meeting concluded with a summary of the discussion, next steps, and closing remarks.

Figure 2-3
Iowa meeting agenda

Evaluation of the Practice Expense Geographic Practice Cost Index

Iowa Medical Society
1001 Grand Avenue West
Des Moines, IA 50265

December 1, 2004
9:00 a.m. – 4:30 p.m.

9:00 – 9:10	Welcome – Michael Abrams, Iowa Medical Society
9:10 - 9:15	Purpose of Meeting - David Carlyle, MD, Chair, McFarland Clinic
9:15 - 9:25	Introduction of Attendees - David Carlyle, MD, Chair, McFarland Clinic
9:25 - 9:30	CMS Perspective - Jesse Levy, Ph.D., CMS
SECTION I: BACKGROUND ON THE PRACTICE EXPENSE GPCI	
9:30 – 9:50	The Practice Expense GPCI: How Did We Get Here? Stephen Zuckerman, Ph.D., Urban Institute
9:50 – 10:10	Previous Studies of Data for the Practice Expense GPCI Gregory Pope, M.S., RTI
10:10 - 10:20	Discussion/Clarifications
SECTION II: PRESENTATIONS ON THE PRACTICE EXPENSE GPCI	
10:20 – 10:40	The Impact of the Medicare Inequity on Iowa Health Care Michael Kitchell, M.D. Iowa Medical Society
10:40 – 10:50	Discussion
10:50 - 11:00	Break
11:00 - 11:20	The Practice Expense GPCI James Palazzo, M.B.A., Iowa Heart Center
11:20-11:30	Discussion
11:30 - 11:50	The Impact of Geographical Adjustments to Medicare Physician Fees on Primary Care in Iowa Susan Kell, Iowa Academy of Family Physicians
11:50-12:00	Discussion
12:00 – 1:00	Lunch Break (lunch will be provided)
1:00 – 1:20	MMA Section 605: Rural Cost of Practice and Access Trends Justify Improvement of Medicare Geographic Adjustment of Practice Expense Brent Miller, Marshfield Clinic, Wisconsin
1:20 - 1:30	Discussion
1:30 - 1:50	The Medicare Fee Schedule: Is the Current Trend Sustainable? Frank Opelka, MD, FACS, Beth Israel Deaconess Hospital, Boston
1:50 - 2:00	Discussion
SECTION III: STRUCTURED DISCUSSION OF THE PRACTICE EXPENSE GPCI	
	David Carlyle, MD, McFarland Clinic Gregory Pope, RTI Stephen Zuckerman, Urban Institute Moderators
2:00 - 2:20	Nonphysician Employee Expenses
2:20 - 2:40	Office Rental
2:40 - 3:00	Equipment and Supplies
3:00 - 3:10	Break
3:10 - 3:30	Transportation
3:30 - 3:50	Other Expenses
SECTION IV: SUMMARY AND IMPLICATIONS OF THE DISCUSSION	
3:50 – 4:05	Summary of Discussion - David Carlyle, MD, Chair, McFarland Clinic; Stephen Zuckerman, Urban Institute; Gregory Pope, RTI
4:05 - 4:15	Next Steps in the Review of the Practice Expense GPCI - Gregory Pope, RTI; Stephen Zuckerman, Urban Institute
4:15 – 4:25	Closing Remarks – David Carlyle, MD, Chair, McFarland Clinic; Jesse Levy, CMS
4:30	Meeting Adjourned

Figure 2-4
Maine meeting agenda

Evaluation of the Practice Expense Geographic Practice Cost Index

Maine Medical Association
Frank O. Stred Building
Manchester, Maine 04351

March 9, 2005
9:00 a.m. – 4:00 p.m.

9:00 – 9:30	Welcome – Gordon Smith, Maine Medical Association Purpose of Meeting – Robert Berenson, MD, Chair, Urban Institute Introduction of Attendees – Robert Berenson, MD, Chair, Urban Institute CMS Perspective – Jesse Levy, Ph.D., CMS
SECTION I: BACKGROUND ON THE PRACTICE EXPENSE GPCI	
9:30 – 9:45	The Practice Expense GPCI: How Did We Get Here? Stephen Zuckerman, Ph.D., Urban Institute
9:45 – 10:00	Previous Studies of Data for the Practice Expense GPCI Gregory Pope, M.S., RTI
10:00 - 10:10	Discussion/Clarifications
SECTION II: PRESENTATIONS ON THE PRACTICE EXPENSE GPCI	
10:10 – 12:10	Presentations and Discussion
▪	David Savell, Practice Administrator, Sunbury Primary Care
▪	Cindy Cormier, Practice Administrator, Waterville OB-Gyn
▪	Sandy Grant, Practice Administrator Physical and Rehabilitation Medicine
▪	Mike Hendrix, Controller, Mayo Regional Hospital
▪	David Winslow, Vice President, Maine Hospital Association
12:10 – 1:00	Lunch Break (lunch will be provided)
SECTION III: STRUCTURED DISCUSSION OF THE PRACTICE EXPENSE GPCI	
	Robert Berenson, MD, Urban Institute Gregory Pope, RTI Stephen Zuckerman, Urban Institute Moderators
1:00 – 1:30	Nonphysician Employee Expenses
SECTION II: PRESENTATIONS ON THE PRACTICE EXPENSE GPCI (cont.)	
1:30 – 2:00	Kevin Flanigan, MD, President, Sebasticook Valley Primary Care
SECTION III: STRUCTURED DISCUSSION OF THE PRACTICE EXPENSE GPCI (cont.)	
2:00 – 2:20	Office Rental
2:20 – 2:40	Equipment and Supplies
2:40 – 2:50	Break
2:50 – 3:10	Transportation
3:10 – 3:30	Other Expenses
SECTION IV: SUMMARY AND IMPLICATIONS OF THE DISCUSSION	
3:30 – 4:00	Summary of Discussion – Robert Berenson, MD, Chair, Urban Institute; Stephen Zuckerman, Urban Institute; Gregory Pope, RTI Next Steps in the Review of the Practice Expense GPCI – Gregory Pope, RTI; Stephen Zuckerman, Urban Institute Closing Remarks – Robert Berenson, MD, Chair, Urban Institute; Jesse Levy, CMS
4:00	Meeting Adjourned

2.3 Meeting Summaries

The first PE GPCI meeting was held at the Iowa Medical Society offices in Des Moines, Iowa, on Wednesday, December 1, 2004. It began at 9:00 a.m. and ended at 4:15 p.m. The second PE GPCI meeting was held at the Maine Medical Association offices in Manchester, Maine, on March 9, 2005. It began at 9:15 a.m. and concluded at 3:20 p.m. After preliminaries, both meetings were divided into four sections: Background, Presentations, Structured Discussion, and Summary and Implications.

This summary combines proceedings from the Iowa and Maine meetings except where noted. Detailed, separate summaries of each meeting can be found in Appendix C.

2.3.1 Meeting Preliminaries

CMS and meeting participants stated that the purpose of both meetings was to determine if there are problems with how the PE GPCI measures relative input prices for practice expenses and, if there are problems, are there alternative data sources that can be used to improve the PE GPCI.

2.3.2 Background

Representatives from RTI and the Urban Institute made presentations on the background of the PE GPCI. The purpose of the GPCIs in the physician Medicare fee schedule, including the PE GPCI, is to avoid penalizing physicians for cost differences beyond their control. The GPCIs also are intended to equalize real fees across areas, including cost differences related to costs of living for physicians.

The GPCIs adjust Medicare fees to compensate for input price variability for the following categories of physician practice expenses:

- Physician time costs.
- Liability insurance.
- Non-physician employee wages.
- Office rents.
- Supplies and equipment.
- Other/miscellaneous.

The PE GPCI is used to adjust the practice component of Medicare physician fees. The PE GPCI covers non-physician employee wages, office rents, supplies and equipment, and other/miscellaneous expenses.

The PE GPCI is developed from a variety of data sources. Non-physician employee wages are calculated from Census wage data for RNs, LPNs, health technicians, and clerical

workers. Office rents are calculated using the Department of Housing and Urban Development's fair market apartment rent rate index as a proxy for the relative difference in rents between payment localities At the time the PE GPCI was initially developed, no credible data to measure area variation in prices of supplies, equipment, and other expenses appeared to exist. Moreover, interviews with representatives of medical equipment manufacturers and medical supply trade associations confirmed that data was not easily attainable and that the assumption of national uniformity was reasonable. For a data source to be used to construct a component of the PE GPCI, it must meet the following criteria:

- The data source accurately measures variation in a component of physician practice expense.
- Data are available for all areas.
- The data source is updated frequently.
- The data source has a sufficient sample size.
- The data source has a transparent data collection methodology that can be reviewed or audited.
- The cost of obtaining the data is affordable.

The background section of the meetings concluded by reviewing previous research into data sources considered but rejected for inclusion in the PE GPCI when the GPCIs were first created. For non-physician employee wages, Bureau of Labor Statistics ES-202 data and Internal Revenue Service (IRS) FICA data were considered for the PE GPCI but rejected because these data did not distinguish between physician and non-physician wages and did not adjust for occupation mix. The Hospital Wage Index was also considered; it is highly correlated with Census data although it tends to be lower in rural areas than the Census data.

For office rents, commercial rental data from the Building Owners and Managers Association was reviewed and rejected for the GPCI. These data were found to have several problems: (1) data were lacking for many areas of the country, (2) sample sizes were small, and (3) data were not representative of the commercial spaces physicians rent. Deductible business rental expenses from the IRS were reviewed and rejected because equipment lease costs were mixed with office rental costs, office sizes could not be standardized, and some of the data are confidential.

Original GPCI research comparing PE cost shares in rural and urban areas revealed that cost shares were similar in urban and rural areas.

2.3.3 Presentations and Structured Discussion

The presentations and structured discussion focused primarily on problems for rural physicians receiving Medicare reimbursement. Some of the topics were related to the PE GPCI; others involved issues beyond the scope of the PE GPCI.

General Views on the PE GPCI and Medicare Physician Reimbursement—Most of the physicians and physician representatives were from rural areas at both the Iowa and the Maine meetings. The position of attendees at the Iowa meeting was that the PE GPCI should be eliminated or a floor of 1.000 should be established as was done with the work GPCI. The attendees at the Maine meeting believed costs for rural practices were comparable to the national average, and it was implied they would support a floor of 1.000 for the PE GPCI.

The rural physicians made two assertions as to why the PE GPCI should be eliminated or modified. The first assertion made in Iowa was that the PE GPCI could not accurately measure all the variation in input prices between different payment localities. Because it is not possible to measure all the variations in input prices, practice costs should be considered equal for all practices in the country, and the PE GPCI should be eliminated. The second assertion stated in both Iowa and Maine was practice costs for rural areas were similar to the national average for practice costs. This argument did not question the current GPCI structure of generally adjusting fees higher in urban areas. The suggested remedy was that rural physicians could be compensated for their costs by implementing a floor of 1.000 for the PE GPCI.

A physician from Boston attending the Iowa meeting had a different view. He believed that the RBRVS system is the problem for physicians and not the GPCIs. Physicians should be more concerned with overall reductions in Medicare physician reimbursement instead of changing the GPCIs. He stated that the PE GPCI should not be changed, as modifying the PE GPCI will widen the gap between service cost and reimbursement in urban areas.

Determining Practice Cost Shares—Anecdotal evidence from several meeting participants at both meetings and some survey data indicate that the practice cost share of non-employee wages may have changed since the last AMA Socioeconomic Monitoring System (SMS) survey was done in 1998. Data from the AMA SMS survey are used to develop the practice cost shares for the GPCIs. The new practice cost shares information presented at the meetings indicated that cost shares for non-employee wages and equipment and supplies may need to be increased in the PE GPCI, and the cost share for office rent could be decreased.

The Medical Group Management Association survey was proposed as an alternative data source for practice cost shares that could be used to replace the discontinued AMA SMS survey at both meetings. The MGMA survey is an annual survey of physician practice managers on practice revenues and expenses. It is not designed to be nationally representative of all physician practices, or even of medical groups. MGMA sample sizes are too small to allow for area-level estimates of practice expenses and are not intended to be representative of any individual geographic areas. Moreover, MGMA surveys typically have low response rates (between 10 and 20 percent). Nevertheless, some meeting participants declared that the MGMA survey was the best currently available source of data on physician practice expenses. Others believed the sampling frame (largely, MGMA members) and the low response rate meant there was a high probability that the data could be questionable.

There were brief discussions about the feasibility of performing primary data collection to obtain new data on physician practice cost shares. Methods of data collection mentioned included performing a national survey of physicians or developing a survey that could be administered by each state medical society. The consensus among meeting participants was that

primary data collection was very expensive, and any survey would likely have a low response rate.

Non-Physician Employee Wages—Many of the meeting participants at the Iowa meeting agreed with the assertion that the PE GPCI proxy measure for non-physician employee wages does not accurately represent several categories of non-physician workers at physician practices including information technology professionals, regulatory compliance staff, billing staff, and accountants. Wage data from Wisconsin and anecdotal evidence presented by a representative of the Marshfield Clinic appeared to indicate that non-physician employees not covered by the PE GPCI may possibly be paid in a national market and not at lower compensation rates common in rural areas.

The validity of the claim that the variation in the PE GPCI should be smaller could not be addressed at the meetings, however, because sufficient data were not provided. It is noteworthy that the Work GPCI, which is supposed to measure locality differences in pay for physician work, shows locality differences. This index was constructed using locality differences in wages for college-educated professionals. The variation is contrary to the claim that non-medical personnel are recruited in a national market.

During the structured discussion in Iowa, it was suggested that the Hospital Wage Index could be used as an alternative data source to measure non-employee physician wages.

At the Maine meeting, physician practice managers provided financial statements to document the practice expense costs of their individual practices. The discussion did not center on cost shares for non-physician employees. Instead, the rural physicians and physician practice representatives provided their views about factors that influence the levels of non-physician employee wages. Their opinion was that medical practices compete against hospitals and local manufacturing industry depending on the location. In addition, practices compete against higher wages paid for non-physician employee jobs in population centers than in more rural areas. For example although wages for non-physician employee jobs in rural Maine should be lower than wages in Portland or Bangor, rural practices must pay their non-physician employees wages that are comparable to those in Portland or Bangor. Similar views on urban-rural wage competition were also expressed at the Iowa meeting; in this case, concerns were raised with respect to the Twin Cities area of Minnesota.

Office Rents—Rural physicians and their representatives believe there is less variation in physician office rents between urban and rural areas than that shown in the HUD fair market rent index. Rural physicians asserted that office rent variation between rural and urban areas is smaller because rural practices need to be located in high-value properties near hospitals, preventing them from taking advantage of lower rural rental costs. In addition, because there are fewer physicians in rural areas, physicians have fewer opportunities than urban physicians to share office space to reduce rental costs.

However, a physician from Boston who attended the Iowa meeting stated that the assertion that the differential between rural and urban physician office rents was smaller than the variation measured in the fair market rent index is disputable. Urban and suburban physician

practices can also cite reasons why medical office rents are higher than the regular residential or commercial rents in urban areas.

None of the meeting participants suggested data sources that meet the criteria for inclusion in the PE GPCI as an alternative data source to the fair market rent index to measure differentials in office rents. In consideration of the critiques about office rent and the HUD data, we analyzed United States Postal Service (USPS) post office rent data to determine whether it could be useful in determining the office rent component of the PE GPCI.

Equipment and Supplies—Most of the participants at both meetings agreed that supplies and equipment were purchased in a national market. However, some rural physicians and their representatives at the Maine meeting believed that they might have higher equipment maintenance costs because of travel surcharges for technicians to service equipment at their rural practices. They also believe they may face higher supply costs because of lack of volume discounts for small, rural practices. Additional details on examples of where the Maine meeting participants believe rural physicians face higher equipment and supplies costs can be found in Maine meeting summary (Appendix C) in Kevin Flanigan's presentation and in the Structured Discussion on Equipment and Supplies costs. However, no data source was suggested that could measure these perceived additional costs. Most meeting participants in both Iowa and Maine were satisfied with not having a PE GPCI adjustment for equipment and supplies.

Other Expenses—During the presentations, other/miscellaneous expenses were mentioned only briefly. Topics mentioned included information technology costs in rural areas, costs of converting paper records to electronic records, and educational and consultant travel expenses.

No detailed discussions occurred on other/miscellaneous expenses nor were any data sources mentioned to measure these expenses. It appeared from the meetings that the current system of no PE GPCI adjustment for other/miscellaneous expenses was working well.

Transportation—Rural physicians suggested that the PE GPCI be modified to compensate them for what they claim are systematically higher travel costs or "windshield time" needed to visit outreach clinics or perform home visits. It was mentioned by other participants in the meetings that urban physicians also have significant travel costs. Currently, Medicare does not reimburse physicians for the travel time required to perform services.

During meeting discussions, it was determined by the participants that the GPCIs, including the PE GPCI, would not be the appropriate method to compensate physicians for travel time. Ideas suggested for providing compensation to physicians for travel time included creating a new travel CPT (billing) code or having a modifier to indicate increased travel expense to perform a procedure.

"On-Call" Time—Rural physicians stated that they spend many hours "on-call," and they do not receive compensation for this time. Rural physicians believe they have a high on-call burden relative to urban physicians because there are fewer physicians in rural areas requiring them to cover more shifts. However, an urban physician believes that urban physicians as well have a high on-call burden because of physician specialization. The urban physician believes

there are relatively few specialists who can perform certain procedures, which could cause urban physicians to have high on-call burdens. No data sources were suggested that could measure on-call time for physicians.

Ancillary Income— One rural physician stated that volume drives up ancillary profits, which, in turn impacts physician income. Ancillary income is income derived from lab equipment, X-ray machines, and CT or MRI scanners, and more profit is generated from the equipment with higher utilization. This physician conjectured that oncologists derive 70 percent of their income from ancillary profits, but he did not provide evidences to substantiate this claim. Rural physicians believe they receive less income from ancillary services than urban physicians because rural physicians feel they have less patient volume than urban practices. A rural physician made a suggestion that a new payment adjuster should be created to distribute ancillary profits more fairly among all physicians. An urban physician countered that payments to physicians in areas with high utilization of ancillary services should not be lowered. He was concerned that ancillary income would be redistributed in a budget neutral way that would lead to decreased ancillary income in high utilization areas. For more information on the discussion of levels of utilization of ancillary services in urban and rural areas, please refer to Michael Kitchell and Frank Opelka's presentations in the Iowa Meeting Summary (Appendix C).

Recruiting Physicians to Rural Areas—Rural physicians and their representatives claimed that low Medicare reimbursement for physicians and limited Health Professional Shortage Area (HPSA) payments make it difficult to recruit physicians to rural areas. A representative from an organization in Maine that recruits physicians stated that there are 168 open positions for physicians in Maine. A rural physician from Maine estimated it took 4 years to recruit a second physician to join his practice. In neither Iowa nor Maine did meeting participants provide specific evidence that higher salaries would reduce the problems with rural physician recruitment. A physician recruitment representative was asked if a 1.000 floor for the PE GPCI would improve rural physician recruitment. The representative said she did not know if changing the PE GPCI would have any effect on physician recruitment.

Payer Mix—Rural physicians claim they face financial stress because of the high concentration of Medicare and Medicaid patients they serve compared to urban physicians. Rural physicians claim they receive less reimbursement per total unit of service they provide compared to their urban counterparts. For specific examples of the issues rural physicians face with payer mix refer to Brent Miller's presentation and the Structured Discussion on Other Expenses in the Iowa Meeting Summary (Appendix C), and refer to the Payer Mix sections in the physician representatives presentations and the Structured Discussion in the Maine Meeting Summary (Appendix C).

Facility-Based Physician Practices—In rural areas of Maine it was claimed that many physicians are having their practices taken over by hospitals and are becoming hospital employees.[5] Other physicians are converting their practices into rural health clinics (RHCs) or

[5] In this case the physician is paid a salary. The service is performed as an outpatient procedure. As such, the hospital is paid under the Ambulatory Payment Classification system and the practice is paid by the PFS, albeit with a reduced Practice Expense Relative Value. Under this scenario, the physician's net payment may be greater than it would be under the PFS.

federal qualified health clinics (FQHCs). These practices are called facility-based physician practices. Physicians are converting their practices to receive higher reimbursement than under the physician PFS.[6] Physicians and physician practice managers had positive opinions on converting practices because these conversions maintained patient access to health care services. Potential drawbacks of facility-based practices, e.g., less continuity of care by a single physician, and the adverse effects this might have on quality of care were claimed to be small. For more detailed information on this topic refer to the Facility-Based Physician Practices section in the physician representatives presentations in the Maine Meeting Summary (Appendix C).

2.3.4 Meeting Conclusion

The representatives from CMS, RTI, and the Urban Institute reviewed the major findings from the meetings and explained the next steps in the PE GPCI review process. It was noted that rural physicians face a unique situation, and the GPCIs cannot fix the problem alone. Even if the GPCIs were eliminated entirely, it would still be a financial challenge to be a rural physician.

2.4 Meeting Implications

The primary objective of the meetings was to consider alternative data sources that could be used to construct the PE GPCI. Although several data sources were suggested during the meetings, only two data sources, the Medical Group Managers Association Survey and the Hospital Wage Index, met the criteria to be considered for further study. The criteria a data source needs to meet to be considered to be a possible alternative to the data in the PE GPCI are the following:

- The data source accurately measures variation in a component of physician practice expense.
- Data are available for all areas.
- Data source is updated frequently.
- The data source has a sufficient sample size
- The data source has a transparent data collection methodology.
- The cost of obtaining the data is affordable.

The MGMA Survey is a national survey of physician practice managers in mostly multi-specialty practices. This survey is being reviewed as an alternative data source to the AMA Socioeconomic Monitoring System Survey for overall physician practice cost shares including the cost shares used for the PE GPCI. The Hospital Wage Index measures wages of hospital

[6] RHCs and FQHCs are paid on a cost basis per visit (including services and procedures provided during the visit) up to a ceiling value. Presumably, physicians have found this to be more lucrative. In order to qualify as an RHC or a FQHC, stringent requirements must be met. Some physicians operate both and RHC and a private office from the same geographic location.

employees including non-physician employees, and it could be used as an alternative to Census wage data currently used in the GPCI to determine relative wages for non-physician employees.

Suggestions were made during the meetings to modify the structure of the PE GPCI. One possible change is to update the distribution of physician practice cost shares to reflect the perceived current distribution of physician practice expenses. The MGMA survey of physician practice expenses, a physician practice expense survey presented in *Medical Economics*, and anecdotal evidence from both meetings indicated that the share of total practice expenses for non-physician employee wages is too low and the share of total practice expenses for office rents is too high in the PE GPCI. In addition, some meeting participants asserted that there is less variation with non-physician employee wages than office rents between payment localities. Increasing the cost share of non-physician employee wages could help to reduce the variation in the GPCI between rural and urban areas.

The Marshfield Clinic presented data that suggested that employees in the non-physician categories of the PE GPCI in Wisconsin have wages near the national median. They used this information to argue that the value of the wage proxy applied to fees in rural Wisconsin was too low. The representative of the Marshfield clinics went on to suggest that changes in medical practice are leading to changes in the skills required to run a practice. Specifically, he claimed that almost half of the wages they pay are for employees not captured explicitly in the PE GPCI wage proxy. In discussing this, the presenter claimed that employees such as information technology staff, attorneys, accountants and compliance staff are much more likely to be employed by practices than when the PE GPCI was developed. Further, the presenter claimed that wages for these types of workers will tend to vary less, if at all, across localities. Marshfield believes that expanding the types of non-physician employees reflected in the PE GPCI would reduce the variation in the non-physician wage proxy. Interestingly, some of the occupations Marshfield suggested be included in the PE GPCI are included in the current Work GPCI. That index, based on Decennial Census data, indicates that wages for these occupations exhibit geographic variation across localities.

The objective of many of the meeting participants at the Iowa meeting was to eliminate the PE GPCI or to establish a floor of 1.000 for the PE GPCI. At the Maine meeting, most of the meeting participants from rural areas wanted rural physicians to receive increased compensation for practice expenses at a level that would establish a floor of 1.000 for the PE GPCI. These strategies would raise reimbursement for physicians in rural localities as well as many statewide localities. One assertion from the Iowa meeting was that the PE GPCI cannot accurately measure the differences in input costs between payment localities. For example, costs to rent office space cannot be compared unless actual data on physician office rents are available. Because input costs cannot be measured accurately, the PE GPCI should be eliminated. The second assertion stated at both the Iowa and Maine meetings was practice costs for rural areas were similar to the national average. Therefore, a floor of 1.000 should be placed on the PE GPCI to compensate physicians for input costs similar to the national average.

Significant portions of the meetings dealt with issues with rural physician practices that were not directly related to the PE GPCI. These topics will be examined in greater detail in Section 6.2 (Additional Issues in Rural Physician Practice). Topics discussed included:

- Lack of compensation for time spent "on-call."
- Transportation costs ("windshield time").
- The cost of outreach services for rural physicians.
- The limited effectiveness of HPSA payments.
- Disparities in ancillary income because of high service utilization in some areas.
- Problems recruiting new physicians to rural areas.
- The overall low reimbursement for services by Medicare caused by the level of Relative Value Units (RVUs) and the Sustainable Growth Rate (SGR) formula.
- The mix of patients with public insurance coverage (Medicare or Medicaid) vs. private coverage – having more patients with public coverage leads to less physician income.
- The establishment in rural Maine of facility-based physician practices where physicians are becoming hospital employees or converting practices to rural health clinics or federally qualified health clinics to increase their reimbursement.

The bottom line is that only two alternative data sources were identified in the meetings that could be used to revise the PE GPCI. However, the meetings suggested that further analyses of the physician practice cost shares and the proxies to measure non-physician employee wages and office rents should be considered. Finally, the meetings provided rural physicians and their representatives the opportunity to discuss other important issues related to rural practices.

SECTION 3
REVIEW OF ALTERNATIVE PRACTICE EXPENSE DATA SOURCES: COST SHARES

3.1 Practice Expenses in Urban and Rural Areas

Physicians in Iowa and Maine indicated that they felt that the PE GPCIs did not adequately reflect the types of costs they incurred in running their practices. Although the basic categories of costs in the PE GPCI—non-physician employee wages, office rents, medical equipment, supplies, and miscellaneous expenses—seemed reasonable, two specific issues were raised that could potentially require a reassessment of the cost shares used to weight the input price data. First, physicians indicated that they hire employees beyond the nurses, health technicians, and administrative staff reflected in the current PE GPCI wage adjustment. In particular, they suggested that the complexity of their practices required greater employment of information technology staff and lawyers hired from a national labor market and, as such, should not be subject to the same locality wage adjustment as other employees. Second, many of the physicians in both localities felt that they paid a lower share of their practice revenues to rent and operate their offices than is reflected in the current PE GPCI. Given that the price proxy used to adjust for office rents has greater dispersion than the other components of the PE GPCI, a lower cost share for office rents would reduce the extent of geographic differences in Medicare fees.

To examine either of these issues, it is necessary to reevaluate the data used to develop the costs shares in the current PE GPCI and the Medicare Economic Index (MEI) and to consider alternative data sources. The physicians in Iowa and Maine suggested that the cost surveys conducted by the Medical Group Management Association (MGMA) should get serious consideration as the source of data on cost shares instead of American Medical Association (AMA) physician survey data. The AMA data were used in the original PE GPCI and have been used in each of the updates. Therefore, we start with a review of the AMA data and discuss how they are currently being used. We then turn to the MGMA data as a potential alternative source of information on cost shares, discussing their strengths and weaknesses. In addition to exploring the specific issues raised in the physician meetings, we will also investigate, to the extent possible, metropolitan/non-metropolitan differences in the cost shares suggested by these data sources.

3.1.1 American Medical Association Physician Survey Data

From 1982 to 1999, the Socioeconomic Monitoring System was the AMA's major survey designed to collect data on the socioeconomic aspects of physicians' practices. The survey was conducted by telephone with a random sample of non-federal patient care physicians stratified by specialty and geographic region. The physician is the unit of observation, and sample sizes were near 4,000 for the major annual SMS survey (there were also smaller quarterly surveys, but these collected a more limited set of data). In the early years, the SMS was able to achieve response rates of slightly over 60 percent, but response rates gradually drifted down to the mid-50 percent range. For the PE GPCI, the key strength of the SMS was that it provided data on detailed practice costs and physician incomes. Together, these data elements allowed for the computation of the cost shares required in the PE GPCI (see Welch et al., 1989).

Specifically, the SMS data on practice costs covered non-physician payroll expenses, including fringe benefits, professional liability insurance premiums, medical equipment, office expenses (rent or mortgage, utilities, and telephone), medical materials and supplies, and other professional expenses (e.g., professional car, association memberships, and continuing medical education). Despite the value of these data, over time there were growing problems related to item non-response across these expense categories. As a result, complete data were often not available for many physicians who otherwise responded to the survey. This made the data somewhat difficult to analyze. These concerns, combined with the costs of the survey to the AMA, led to the termination of the SMS survey before it was fielded in 2000.

AMA tried to resume the collection of socioeconomic data on physicians in 2001 with the Patient Care Physician Survey. This was a mixed-mode survey (mail and telephone) that collected data from 3,592 physicians. It was also designed to yield a representative sample of all non-federal physicians who spend most of their time in patient care activities. Although this new survey collected many of the same data items as SMS, it attempted to collect significantly less detailed practice expense information. It was limited to questions on total practice expenses, employee (non-owner) physician expenses, and professional liability insurance premiums. There is no further breakdown of categories of practice expenses. This makes it impossible to use these data to compute costs shares for each of the expense categories in the current PE GPCI.

The AMA data from the SMS and its replacement do not provide enough detail to allow us to consider how the share of expenses going to wages for information technology (IT) workers differs between urban and rural practices. However, if IT workers are becoming more important to all practices and no other changes in staffing are occurring, the share of expenses associated with employee wages could be increasing. Based on the methods used by CMS to derive weights for the 2004 GPCI, non-physician employee wages do represent a somewhat larger share of practice expenses now than when the PE GPCIs were initially developed. Current estimates suggest that non-physician employee wages account for 42.8 percent of practice expenses in the 2004 PE GPCI as opposed to 39.1 percent in the 1992 PE GPCI (Table 3-1).

Table 3-1
Historical view of PE GPCI cost shares (%)

	1992	1995	2001	2004-2006
Practice costs as a share of practice revenues	40.2	41.0	42.3	43.7
Component share of Practice Cost:				
Non-physician employee wages	39.1	39.8	39.7	42.8
Rent	27.3	25.1	27.4	27.9
Miscellaneous (equipment supplies and other expenses)	33.3	35.1	32.9	29.2
Sum of shares	100.0	100.0	100.0	100.0

SOURCE: Derived from Table 5 in Medicare Program; Revisions to payment policies under the Physician Fee Schedule for Calendar Year 2005; *Federal Register*, Vol. 69, No. 150, August 5, 2004, Part 2. p. 47502.

3.1.2 Medical Group Management Association Cost Survey

The MGMA Cost Survey is an annual survey of medical groups sampled from the membership of MGMA, the American Urological Association, and the American Academy of Pediatrics. This sample frame indicates that the survey is not designed to collect nationally representative data for either sample physicians or medical practices. In fact, the sample is not necessarily representative of medical groups, given the membership lists that it is drawn from. In discussions with MGMA staff, it was made clear that this was not viewed as a limitation of the survey. The view is that the primary mission of the MGMA Cost Survey is to provide management decision support to practice administrators. For example, MGMA staff indicated that published reports allow practices to benchmark themselves against their peers with respect to staffing patterns.

Based on the input we received from physicians in Iowa and Maine, it seemed that one of the major strengths of the MGMA survey was the detail that it provided on medical groups. By definition, groups have three or more full-time equivalent (FTE) physicians. Data are collected on revenue, staffing, costs, outputs, charges, and basic practice characteristics. To facilitate comparisons across practices, MGMA publishes reports that present their data on, for example, costs and staffing for different types of groups. At the most aggregate split, data are shown separately for multi-specialty and single-specialty groups. Within multi-specialty groups, data are displayed by ownership type (owned by a hospital or integrated delivery system versus other), whether or not the group provides only primary care, geographic region, group size, and share of revenue from capitation. For single-specialty groups, the primary focus is on presenting data for major specialties, with additional focus on ownership as the data permit.

In reviewing MGMA publications (the latest one was released in 2004 and contained Cost data for 2003), it became clear that sample sizes are not large. This results from a combination of low survey response rates and the need to disaggregate the data to allow practice managers of specific types of groups to make meaningful comparisons. The response rate for the survey fielded in January 2004 to collect data from 2003 is fairly typical of MGMA surveys. MGMA mailed surveys to 12,419 medical groups (an additional 195 were mailed but were undeliverable). There were 1,608 respondents, yielding a 12.9 percent response rate as computed by MGMA. However, 366 of these were deemed ineligible or incomplete and were excluded from MGMA reporting. It is possible that the response rate may vary slightly from that reported by MGMA, depending on how many ineligible respondents there were and how they are treated in the response rate calculation. The bottom line is that there were only 1,242 respondents available for analysis. This included only 299 multi-specialty groups that provided some data on practice costs. The largest of the single-specialty categories was orthopedics (100 respondents).

The membership-based sampling frame, the low response rates, and the small sample sizes are prima facie reasons for concluding that the MGMA data are not appropriate alternative data for PE weights. In addition, the data are not available for analysis in public use files. All of the publicly available data are presented in the published reports or on CDs. This constrains outside analysts' ability to tabulate the data in ways that differ from what MGMA has presented. Discussions with MGMA staff indicated that they do work with outside analysts on special data requests and would be willing to undertake a project that could help CMS better understand the potential application of this survey to the PE GPCI.

Despite the questionable properties of the survey and the analytic constraints imposed by the lack of a public use file, we feel that the survey provides some information that could be used to assess the claims made by physicians in Iowa and Maine. First, the published MGMA data for 2003 can be compared to the 2001 AMA data (published in 2003) to determine if the overall share of practice revenues going to expenses is comparable. The 2001 AMA Survey does not allow for comparison of detailed practice costs for, say, non-physician employee wages or rents, because those data were not collected. Second, the MGMA data on the shares of expenses associated with various components of expenses can be compared to the recently released CMS estimates used to revise and re-weight the GPCI and the MEI. While results of analyses using MGMA data may indicate that shares have changed, it is not clear how much trust one can have in the precision of the estimates derived from this source.

Overall Cost Shares—In the 2003 AMA publication Physician Socioeconomic Statistics, the ratio of median expenses per self-employed physician to the sum of median expenses plus median net income after expenses but before taxes is approximately 48 percent across all types of physician practices. For solo practitioners, this ratio is also 48 percent. In two- and three-physician practices, the ratio is 51 percent and 57 percent, respectively. Since the MGMA data based on the largest sample of practices are for multi-specialty groups, we also computed the AMA expense ratio for groups with four to eight physicians – this ratio is 47 percent.[7]

These data from AMA are not directly comparable to those from MGMA. First, the AMA data are reported per self-employed physician as opposed to the practice level. Second, AMA's classification of groups includes both single-specialty and multi-specialty groups. Third, the AMA data do not have samples that are large enough to support tabulations that cross-classify by specialty and practice size. MGMA reports that costs represent 60 percent of medical revenues for the median multi-specialty group. It is not possible to estimate a directly comparable cost share from the AMA data. However, AMA cost shares for groups (from the preceding paragraph) appear to be in the range of 47 to 57 percent; slightly lower, but similar to the MGMA estimate.

Component Cost Shares—Despite the reasonable similarity in the overall cost shares between the AMA and the MGMA sources, there are noticeable differences between the recently updated PE GPCI cost shares (based on AMA and other data) and those derived from the published MGMA report. One major difference is that the updated PE GPCI cost share for office rent is about 28 percent, while the MGMA estimate based on multi-specialty groups is about 11 percent. Interestingly, the 11 percent estimate seems closer to the anecdotal information provided by physicians during our meetings. It appears that most of the lower share of revenues going for office rents translates into a higher share for non-physician employees. The current PE GPCI weight for non-physician employees is about 43 percent, while the MGMA estimate using multi-specialty groups is 69 percent. The remainder of the difference in the non-physician employee

[7] The AMA data on larger groups (eight or more physicians) do not appear to be credible. Median expenses per self-employed physician drop from $200,000 in groups with four to eight physicians to $80,000 in the larger group category. Given that physician net incomes do not drop by that much, the ratio of expenses to total revenues seems to be an extreme outlier and is, therefore, not reported.

share, by definition, results from a lower share of expenses being associated with equipment, supplies, and other expenses in the MGMA data than in the updated PE GPCI cost shares.

Metropolitan and Non-Metropolitan Cost Shares—During the development of the PE GPCI prior to its use in the Medicare Fee Schedule, analysts compared cost shares between urban and rural areas (Welch et al., 1989). These comparisons were based on data from the AMA surveys and showed small differences between metropolitan and non-metropolitan areas. Physicians in non-metropolitan areas spent 3.5 percentage points more on practice costs as a share of revenues than other physicians, largely because they spent more on employees, supplies and equipment. That earlier analysis concluded that the impact of this difference on Medicare fees in non-metropolitan areas would be small.

The MGMA data that were provided to us to assess differences between practices in metropolitan and non-metropolitan areas suggest that the differences are also quite small. Table 3-2 shows that the share of medical revenues going to overall practice costs among multi-specialty groups not owned by a hospital or integrated delivery system is almost identical across types of communities. In fact, even looking at the component cost shares, the differences are not large. The biggest differences related to non-metropolitan practices are in the area of equipment, supplies, and other costs. Based on what we were told at the Iowa and Maine meetings, we would have expected this cost share to be greater in rural areas. The results are mixed, suggesting that non-metropolitan practices spend more than practices in large metropolitan communities but less than practices in small and medium metropolitan communities.

Table 3-2
Analysis of MGMA median cost shares by community type

	Non-Metropolitan Area	Metropolitan 50k - 250k	Metropolitan 250K - 1 million	Metropolitan Over 1 million
Number of practices	66	69	44	14
Percent:				
Non-physician employee costs	53	47	49	55
Office rent	10	11	11	12
Equipment, supplies, and other expenses	37	42	40	33

SOURCE: Derived from special tabulations of 2003 MGMA cost survey.

Conclusion

As noted above, the participants in the Iowa and Maine meetings did think the MGMA data could be useful to calculate practice expense shares. However, the MGMA data do have serious limitations.

CMS routinely refines the MEI and by extension the practice expense shares for the PE GPCI. When CMS refines the MEI, it investigates existing data sources to determine the most useful and accurate data to be used in the MEI. CMS intends at that point to evaluate existing data sources. It is possible that the MGMA data will be one of the data sources considered during this process. At this time, there is no data source that CMS would recommend as a source for the next MEI refinement.

SECTION 4
REVIEW OF ALTERNATIVE PRACTICE EXPENSE DATA SOURCES: EMPLOYEE WAGE INDEX

The non-physician employee wage index is the largest component of the PE GPCI, and its share of the PE GPCI is increasing. The accuracy of the employee wage index is central to the validity of the overall PE GPCI. As discussed above, one concern that was raised by physicians participating in the Iowa meeting was that the current employee wage index measures only four occupations: clerical and administrative support personnel, registered nurses, licensed practical nurses, and medical technicians and aides. They provided evidence that at least some of their practices employ a wider range of occupations, especially higher-skilled occupations such as information technology workers, lawyers, and specialized medical personnel. For example, 35 percent of the Marshfield Clinic's employees and 49 percent of their wages are not represented by the occupational categories of the current PE GPCI. The average wage of the unrepresented employees is $48,399 versus $27,262 for the represented employees. Wisconsin wage data from an employee recruitment firm presented by a representative of Marshfield clinic was consistent with Wisconsin wages being similar to the national average for several employee occupations (see Marshfield Clinic slides in Appendix E). The practices claimed that the labor market for the professionals unrepresented in the PE GPCI is more national in character with less local wage variation. Since the current PE GPCI employee wage index omits these occupations, it might overstate the urban-rural difference in labor costs.

To address this concern, and in general validate the PE GPCI employee wage index, this section reviews alternative sources of data to measure area differences in compensation costs of physician practices for non-physician employees. Our baseline is the current PE GPCI employee wage index, which is based on a special tabulation of median hourly earnings from the 2000 Decennial Census. However, the Census “long form” data on which the PE GPCI wage index has been based will not be available in the future. The Census Bureau is discontinuing the Decennial Census long form and replacing it with the similar American Community Survey (ACS). The ACS data accumulate over 5 years. The full ACS sample size will not be available until 2010. We use the current PE GPCI wage index for empirical comparisons, but review the methodology of the ACS, which will be the source for similar data in the future.

Two other sources of wage data are evaluated. The CMS Hospital Wage Index was mentioned in the Iowa and Maine meetings as a source for relative wages by area. It is used in the Medicare program to adjust payments to hospitals and certain other providers for area wage differences. Although reflecting the occupational mix of hospitals, not physicians' offices, many more occupations are captured in the hospital wage index than in the current PE GPCI.

Another source for wage data that we identified is the U.S. Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES). The OES collects wage and employment data on over 700 occupations nationwide for all industries, including offices of physicians. The national employment and wage bill shares of occupations employed in offices of physicians can be computed. Moreover, a geographic index of wages of more than 150 occupations employed in physicians' offices can be constructed from the OES data.

In this section, we describe, compare, and contrast these three potential sources for the PE GPCI wage index: the Census ACS data, the CMS Hospital Wage Index, and the BLS OES data. We present empirical comparisons of the hospital wage index and a wage index derived from the BLS OES data to the current PE GPCI wage index based on the 2000 Census.

4.1 U.S. Census Bureau American Community Survey

This section describes the ACS data and assesses its appropriateness for the PE GPCI, based on information on the ACS website[8] and a conversation with a Census staff member.[9]

4.1.1 Background and Uses

The ACS is a new nationwide survey that replaces the long form of the Decennial Census. It will be used for similar purposes to the long form, providing demographic and socioeconomic data for a wide range of government, commercial, and research purposes. The ACS will be conducted annually, and data will be available on a more timely basis than from the Decennial Census long form, especially for more populous areas. Congress has fully funded the expansion to the full planned size of the survey, and the Census Bureau does not foresee any problems with future funding.

Because the ACS is the successor to the Census long form, it will be the most comparable and consistent data source for the PE GPCI employee wage index in the future. Because the Census long form data have also been used to calculate the physician work GPCI, the ACS may be a natural successor data source for the physician work GPCI. A major advantage of the ACS for the GPCI is that it represents the closest continuation of the current data source and can be used for both the PE and work GPCIs.

4.1.2 Sampling Frame, Sample, and Information Collected

Each month, the Census Bureau selects a systematic sample of addresses from its most current Master Address File (MAF) for the American Community Survey. The sample will represent the entire United States. No address will receive the ACS questionnaire more than once in any 5-year period. A larger proportion of addresses will be sampled for small government units (American Indian reservations, counties, and towns). The monthly sample size is designed to approximate the sampling ratio of Census 2000, including the oversampling of small government units.

The ACS sample size is 3 million addresses per year, or 15 million over 5 years. On average there are about 2.6 individuals per address. Therefore, the ACS sample size is approximately 7.8 million individuals per year or 39 million per 5 years. This sample includes people of all ages and individuals who are employed, self-employed, and not in the labor force. The Census Bureau ramped up to the full 3 million addresses per year sample size in January 2005. The single year 2005 data will be enough to provide estimates of selected characteristics for places with 65,000 or more individuals (including states and MSAs). With 3 years of data

[8] http://www.census.gov/acs

[9] We talked to Clive Richmond, Senior Program Analyst.

accumulation, selected estimates can be produced for places of 20,000 or more inhabitants. After 5 years, ACS estimates will achieve accuracy comparable (but not quite as good) to the long form of the Decennial Census. The long form was mailed to 19 million addresses, although not all responded. The ACS is mailed to 15 million addresses over 5 years (although not all respond). Data/estimates from the full 5-year ACS sample of 15 million addresses will not be available until 2010.

The ACS survey form is very similar to the long form of the Census, although the positions and wordings of a few questions have been changed. The information necessary to compute median hourly earnings by occupation will still be available. Data on fringe benefits or total compensation are not available from the ACS.

4.1.3 Occupational and Geographic Detail

The ACS web site includes a list of occupations coded in the ACS Public Use Microdata Sets (http://www.census.gov/acs/www/Products/PUMS/C2SS/CodeList/2004/Occupation.htm). The level of occupational detail is greater than has been used in the special tabulations of Decennial Census data for the PE GPCI, but not as great as the occupational detail available from the BLS OES data (see description of BLS OES data later in this Section). Earnings of registered nurses, licensed practical nurses, physician assistants, several varieties of medical therapists and technicians, and a variety of clerical and administrative support personnel are available from the ACS.

The ACS is a nationwide survey, and with 5 years of data accumulation, it will produce estimates of similar geographic detail and accuracy to the Decennial Census long form data. The ACS should be able to produce wage estimates for the Medicare physician payment localities that are of acceptable accuracy.

4.1.4 Method of Data Collection and Data Quality

The ACS is collected through an initial mailing, a follow-up mailing to initial nonrespondents, and telephone follow-up to mail nonrespondents. The cumulative response rate to mail and telephone solicitations is about 75 percent. Then a one-third sample of the remaining 25 percent is selected for in-person enumeration. This last sample is weighted to represent all of the 25 percent of nonrespondents to mail/telephone contacts. The overall “weighted” response rate is 97 percent.

All ACS information, including occupation, earnings, and hours worked, is self-reported by respondents. Respondents also report the name and address of their places of work, which the Census Bureau uses to assign “industry.” Census Bureau personnel edit the data obtained from the survey. Data self-reported by individuals are arguably of poorer quality than data reported by establishments.

4.1.5 Timeliness of the Data and Updating

The full sample size of the ACS is attained in a 5-year cycle, with the first cycle ending in 2010. Thus, ACS wage estimates can certainly be updated every 5 years, beginning in 2010. Data for more populous areas such as states and large metropolitan areas may be available at a

sufficient level of sample size and accuracy more frequently than every 5 years and earlier than 2010. In addition, after the ACS startup period, a rolling average can be calculated for any number of years, where one-fifth of the data are updated each year.

One complication that will arise with the ACS' cumulative sample that did not arise with the Decennial Census long form data is updating earnings data from older survey panels to be consistent with newer panels. For example, wage data from 2005 would need to be inflated to 2009 levels before they could be combined with 2009 data.

4.1.6 Special Tabulations

Although public use files of the ACS data will be available, they are not likely to be sufficiently detailed to allow computation of median hourly earnings for the relevant occupations for all of the Medicare physician payment localities. Requests by CMS to the Census Bureau for special tabulations of ACS data for the PE GPCI wage index will continue to be necessary. It may also be possible to request through special tabulation data for restricted industry designations, for example, offices of physicians or health care industries.

4.1.7 Appropriateness for the PE GPCI

ACS data are appropriate for the PE GPCI employee wage index. The ACS is a continuation of the Census long form data that have been used for the PE GPCI since its inception. In the ACS, the update cycle for the Census data has been improved from 10 years to 5 years or shorter. The ACS data have good occupational and geographic detail. They are expected to remain available indefinitely. They are routinely produced by a U.S. government agency, are documented well, and are available for relatively low cost. Another advantage of the ACS data is that the earnings measures necessary to construct the physician work GPCI are also available from the ACS. Thus, the work and practice expense GPCI earnings indexes can be produced from the same source.

The disadvantages of the ACS data are that they are self-reported by individuals and thus are arguably of lower quality than establishment-reported data; they comprise hourly earnings only, not total compensation; they are fully updated only every 5 years; and they are all-industry data, and may have insufficient sample size to be restricted to offices of physicians only. The first update of the PE GPCI with ACS data probably could not occur until after the full 5-year ACS sample size is available in 2010.

4.1.8 Empirical Analysis

Data from the ACS are not currently available in sufficient volume to simulate the PE GPCI employee wage index. In our empirical comparisons in Section 4.4, we used the actual 2006 PE GPCI employee wage index, which is based on 2000 Decennial Census data, as the benchmark for the Census data. Given the similarities between the ACS and the Census long form, the 2006 PE GPCI wage index should be a good representation of what will be available from the ACS starting in 2010.

4.2 Center for Medicare and Medicaid Services Hospital Wage Index

4.2.1 Description and Appropriateness

In this section, we assess whether the Medicare Hospital Wage Index (HWI) is appropriate for the PE GPCI. Our assessment is based on information from the CMS website[10] and the *Federal Register*.[11] First, we describe the characteristics of the HWI. Second, we discuss the advantages and disadvantages of using the hospital wage index as a proxy for physician office employee wages as well as the tradeoffs relative to the Census wage data. Third, we compare values of the HWI and Census wage data employment index across states and physician payment localities. Finally, we analyze the ultimate impact on the PE GPCI if the HWI were used in place of the Census wage data to proxy non-physician employee compensation.

Background and Uses—CMS began computing the HWI (also referred to as the Inpatient Prospective Payment System [IPPS] Area wage index) more than two decades ago,[12] and there are no plans to discontinue the HWI. The HWI is used to weight hospital payments in order to control for geographic variation in labor market costs as well as to calculate wage indexes applicable to other providers, such as skilled nursing facilities, home health agencies, and hospices. In addition, the IPPS wage index is currently used for prospective payments to rehabilitation, psychiatric, and long-term hospitals and for hospital outpatient services.[13]

All IPPS hospitals must complete the Medicare Hospital Cost Report (MCR) annually, and these data are used to compute the HWI. Hospitals also complete an occupational survey every 3 years that provides data used to partially adjust the HWI for occupation mix. CMS then constructs the HWI using wages, wage-related costs such as fringe benefits, and overhead for hospital employees (and some contractors) at non-federal, short-term acute care hospitals with data reported on worksheet S-3, Parts II and III of the MCR.

Occupational and Geographic Detail— The HWI is constructed at the hospital level using aggregated data of paid wages and hours for hospital staff. The average hourly wage for each hospital is calculated. These results for the various hospitals are aggregated by metropolitan area. For hospitals located outside of a metropolitan area, that is, in rural areas, the data is aggregated by state. Beginning in 2005, the areas were defined using the Census core-based statistical area definitions.

CMS recently proposed a new occupational mix survey for the 2006 data collection period (70 FR 60092, October 14, 2005). The new survey will provide for the collection of separate wage and hours data for only the nursing and medical assistant occupational categories, which account for nearly 40 percent of all hospital employees. Other labor types will be aggregated in the "all other occupations" category. While the revised occupational mix survey

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[10] http://www.cms.hhs.gov/providers/hipps/ippswage.asp

[11] *Federal Register*, Vol. 69, No. 154, Wednesday, August 11, 2004, Rules and Regulations.

[12] Historical wage index data are available from 1983 to the present.

[13] *Federal Register*, Vol. 69, No. 154, Wednesday, August 11, 2004, Rules and Regulations at p. 49049.

will account for the large categories of staff that are most used by hospitals, this collapsing of occupations may make the survey problematic as a source of data for creating a geographic wage index that would apply to physicians' offices, which rely on other types of staff.

Timeliness of the Data and Updating—CMS updates the HWI annually using the hospital MCRs and occupational data surveys as inputs. Hospitals complete a new MCR every year and the occupational data survey every 3 years.[14] However, the MCR data are used with a lag. For example, the FY2005 HWI uses data from the 2001 MCR. All hospitals' MCR data are not for identical reporting periods. To ensure that all hospital data are for the same time period, CMS updates the wage data using the BLS Employment Cost Index for private industry workers from the BLS Compensation and Working Conditions.

One criticism of the HWI might be that the HWI essentially uses data that are 3 to 4 years old. However, this is not as long of a lag as the Decennial Census data compilation. For example, wage data from the 2000 Census were not incorporated into the PE GPCI until 2005.[15]

Appropriateness for the PE GPCI—The HWI may be appropriate for the PE GPCI, having many of the same desirable attributes of the Census wage data. Specifically, the HWI has national coverage with data from virtually every Medicare participating acute care hospital and has a low marginal cost for use in the PE GPCI because the data are already collected, audited, cleaned, and compiled by CMS. However, there are tradeoffs that must be considered. Although the HWI has several advantages relative to the Census wage data, the HWI also has its disadvantages.

Advantages of Hospital Wage Index compared to Census wage data. One advantage is that the input data for the HWI are updated annually and should track changes in wages more closely over the decade than the Census wage data, which are collected only once a decade. Another advantage of the HWI is that it uses total compensation, which is employee salaries, fringe benefits, and other wage-related costs.[16] Fringe benefits and wage-related costs are an important omitted variable in the Census wage data. We analyzed the MCR data used in the 2005 HWI and compared wage-related costs and fringe benefits to employee salaries. We found that fringe benefits and wage-related costs accounted for approximately 15 percent of employee total compensation.

Another advantage of the HWI relative to Census and ACS data is its timeliness. While the HWI essentially uses data that are 3 to 4 years old (because of the lag in cost reports, which depend on varying hospital fiscal years), the lag is shorter than the Decennial Census data

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[14] Benefits Improvement and Patient Protection Act (BIPA) of 2000 (P.L 106-554).

[15] *Federal Register*, Vol. 69, No. 219, Monday, November 15, 2004, 66260-66261.

[16] For this calculation, we used salaries, hours, and wage-related costs for hospital employees. We excluded contract labor and home office. Our definition of fringe benefits is twofold. Fringe benefits are core-related costs from Exhibit 7 of form CMS 339 and/or fringe benefits as defined by the IRS. Based on our understanding, the wage-related costs and fringe benefits include retirement costs, Social Security tax (FICA), Medicare tax, unemployment insurance, deferred compensation, and daycare. While FICA, Medicare tax, and unemployment are not actual fringe benefits, we were unable to exclude them from the wage-related costs. While we do not think this should significantly affect the result, we wanted the reader to be aware that there may be an effect.

compilation. Wage data from the 2000 Census were not incorporated into the PE GPCI until 2005.[17] It is not clear what the lag time will be for use of the ACS.

Disadvantages of Hospital Wage Index compared to Census wage data. There are some potential disadvantages associated with the HWI. The HWI, as it is currently calculated, includes many occupations not typically found in a physician's office. Salaries for administrative services, nurses, and physical therapists should be similar for hospitals and physician practices because it is the same labor market. Fringe benefits should also be similar. However, there may be differences if either hospitals or physician practices employ a higher quality individual (e.g., hospitals have CFOs) within a category or if there is a premium for hospital salaries (e.g., nurses who work either second or third shift may receive a shift differential of 10 to15 percent in some instances). This could inflate hospital salaries. But, if this inflation is uniform across localities, then it is only a scaling factor and should not affect the non-physician employee wage index, which measures relative wages across areas. Hospital workers are also more likely to be unionized than physician office workers, and differentially across areas, which may raise the relative wage of hospital workers in highly unionized areas.

Another aspect of the HWI to consider is that many hospitals are "reclassified" into a metropolitan area other than their actual geographic location. Hospitals can be redesignated if they are near the labor market of the other metropolitan area and demonstrate similar characteristics or because of regional commuting patterns. Thus, the HWI for an area may include hospitals that are not located there. However, the effect of reclassification is or could be mitigated by a number of factors. First, the post-reclassified wage index for an area cannot decline as a result of hospitals being reclassified into the area. CMS creates a special wage index for hospitals reclassified to an area if including a reclassified hospital were to result in the wage index for the area declining. In general, hospitals that reclassify are geographically located in an area with a lower wage index than the area where they are seeking reclassification. Therefore, the pre- and post- reclassified wage indexes are generally the same. Second, the purpose of reclassification is to allow hospitals the opportunity to demonstrate that they compete for labor in a nearby labor market area rather than the one where they are located. Thus, to the extent that reclassified hospitals are included in the post-reclassified wage index (which will only occur when the effect of the reclassification is to increase an area's wage index), the hospitals have demonstrated similarity in proximity and wages to the area where they have been reclassified. Third, any concern about this factor could be mitigated by using pre-reclassified wage indexes or calculating this portion of the practice expense GPCI using hospital-specific data based on the physician locality where the hospital is located. [18]

Another complication is that the HWI is subject to an urban floor. Under the urban floor policy, no hospital in a metropolitan area of a state can have an HWI that is below the HWI for the non-metropolitan areas of the state. In FY 2005, the wage index urban floor applied to 208 hospitals in 57 urban areas. These hospitals were assigned the statewide rural floor. With a rural floor, the index is intentionally distorted. Given that redistribution caused by the GPCIs is

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17 *Federal Register*, Vol. 69, No. 219, Monday, November 15, 2004, p. 66260-66261.

18 The analyses for this report were done using the post-reclassification hospital wage indices and not the hospital data.

budget neutral, artificially inflating the index for the urban areas will redistribute payments from the rural areas. This factor could also be mitigated by using the HWI before the rural floor is applied and calculating this portion of the practice expense GPCI using hospital-specific data based on the physician locality where the hospital is located.

4.2.2 Alternatives to the HWI

There are several alternatives to using the HWI as it is currently constructed. One option would be to use the actual geographic location of the hospitals rather than their reclassified locations, and then calculate an index for geographic areas suitable for the PE GPCI. We discuss this option below.

Refine the Geographic Area. Because the HWI data are available at the provider level, CMS could construct an index using the geographic location of each IPPS hospital. One weakness to this approach is that, if the geographic unit is too small (e.g., county) there may be too few providers within the geographic area, thereby requiring wage data to be imputed. Another potential problem with a small geographic unit is that there may only be one hospital in the market. As a result, hospital wages may be correspondingly low because of monopsony power for occupations found in a hospital, but not for occupations that can be found in a physician's office. Occupations such as registered nurses that can also be employed in a physician's office would theoretically get a more competitive wage than those occupations that must be employed by the hospital.

Refining the geographic area, however, would not resolve the issue that some of the variables used to construct the hospital wage index, however, are not typically found in a physician's office. These include costs for non-teaching physician Part A services and some top management employees such as the hospital Chief Executive or Financial Officer (CEO or CFO).

This problem is not easily or inexpensively overcome. Only a few wage categories such as physician part A services (lines 4, 4.01 of worksheet S-3 Part II) are itemized on the MCR and can be deleted from the waged index. The vast majority of hospital employee wages including most nursing, physician assistant, and administrative staff salaries are aggregated into total salaries. In the MCR, costs are reported by cost centers, not occupational categories. As a result, it is not possible with our current wage index information to calculate HWI and eliminate all or even most of those occupations that are not found in physician offices. Any cost associated with the suggestion would require a major revision to how hospital's report wage data and would not be marginal.

However, despite all the problems with the HWI, there is precedent for using the HWI to set payment rates for other types of providers that may not use the same staff as the IPPS. The HWI already is used to set payment rates for hospital outpatient services and other types of providers including skilled nursing facilities, home health agencies, psychiatric hospitals, and rehabilitation hospitals. Further, including occupations in the HWI that are not employed in physician offices will only have an effect on the GPCI to the extent that it distorts the relative relationship among areas. If the geographic variation in average hourly wage among these

occupations is the same as others included in the HWI, there would be no effect on final index value.

4.3 U.S. Bureau of Labor Statistics Occupational Employment Statistics Data

This section describes the BLS OES data. We begin with a description of the OES data and an assessment of its appropriateness for the PE GPCI. Then we describe our methods of analyzing the data, including how we constructed a wage index for occupations employed in physicians' offices. In this subsection, we present data on the employment and wage bill shares of occupations employed in offices of physicians. In the next subsection, we present empirical comparisons for states and physician payment localities of the BLS OES wage index and the current PE GPCI employee wage index. In the final subsection, we briefly discuss potential applications of the OES data to the physician work GPCI.

4.3.1 Description and Appropriateness

The BLS collects data on wages by area. The most promising source of BLS wage data for the PE GPCI is the OES series. This subsection describes the OES data and assesses its appropriateness for the PE GPCI, based on information on the BLS website[19] and conversations with BLS staff.[20]

Background and Uses—BLS has been collecting employment data since the 1970s. In 1996, it began to collect wage data from each state. The OES series began in the mid-1990s with funding from the Employment Training Administration (ETA). The OES series is used in administration of the Foreign Labor Certification program. This is the process by which employers must show that they are offering foreign job applicants a commensurate wage to the local labor market. This is a statuary use. OES data also feeds into ETA America's Labor Market Information System and is used for projections in BLS Occupational Outlook Handbook.

The OES program is now funded directly by Congress, with an annual budget of approximately $30 million ($20 million of which is passed through to state workforce agencies to administer the survey). BLS believes funding for the OES program is secure, and does not plan any major changes or reductions in the survey. The OES data in their current form are expected to be readily available into the future.

Sampling Frame, Sample, and Information Collected—The sample frame for the OES survey is 6.5 million establishments with one or more non-farm wage and salary workers, drawn from state unemployment insurance files. The total workforce covered by the sampling frame is approximately 130 million full-time or part-time wage and salary workers in nonfarm industries. The self-employed, owners and partners in unincorporated firms, household workers, and unpaid family workers are not included in the OES.

The actual sample surveyed consists of 1.2 million establishments over 3 years, which covers 70 percent of the employment in the sample frame. The number of individuals

[19] http://www.bls.gov/oes/home.htm

[20] We talked to George Stamas, Chief, Division of Occupational Employment Statistics, and Ben Cover, Economist, Division of Occupational Employment Statistics.

represented in the survey responses is approximately 90 million individuals. According to BLS, the OES has the largest sample size of any extant wage survey.

The OES survey collects straight-time, gross pay, exclusive of premium pay. Overtime and shift differentials are excluded. Estimates of mean and median wages and employment, are reported. Fringe benefits are not collected, nor is total compensation.

Occupational and Geographic Detail—OES data are collected and reported for over 700 occupational categories, categorized according to the Office of Management and Budget's (OMB's) Standard Occupational Classification system. Occupational wage and employment estimates are produced by industry and area. Data for over 450 industry categories, including offices of physicians, are produced at the national level. Area wage and employment estimates are for all industries combined. BLS publishes area estimates for states and metropolitan areas (MSAs). As of May 2005, BLS was still using older 2002 metropolitan area definitions, not yet updated to the 2003 or after MSA definitions based on the 2000 Decennial Census. The BLS plans to move to the newer MSA definitions for their May 2006 estimates.

BLS does not publish separate estimates for the non-metropolitan parts of states. Wage estimates for state non-metropolitan areas are necessary to compute the PE GPCI for all payment localities. One possibility to obtain these estimates is through special tabulations of the OES data conducted by BLS staff. A second possibility is to "back out," or infer, estimates for state non-metropolitan areas using BLS published mean wage and employment estimates for states and for within-state metropolitan areas.

Method of Data Collection, and Data Quality—The OES data are collected through a semiannual mail survey of sampled establishments conducted by state workforce agencies with BLS providing funding and establishing procedures. Typically, human resource professionals at surveyed firms fill out the questionnaire. At very small firms, the survey is addressed to the owner. BLS uses industry-specific forms to collect information from about 100 industry groupings. Otherwise, an unstructured generic form is used. Employers are given descriptions of occupations and they decide how to classify their staff into occupations. There is an initial mailing, three follow-up mailings, and then telephone follow-up from state employees. State employees and the BLS work together to edit the data. BLS feels that the OES data are accurate, and they correlate well with independent BLS in-person wage survey data from the National Compensation Survey (NCS).

The response rate to the OES surveys is 79 percent of establishments and 73 percent of employment. Nonrespondents are imputed using a "nearest neighbor" hot decking algorithm. BLS publishes percentage standard error estimates for wages by occupation. These are typically 1 to 3 percent. This seems acceptably accurate for the PE GPCI, especially when wage estimates are averaged across multiple occupations, which further reduces random sampling error.

Timeliness of the Data and Updating—BLS reports the OES data every 6 months based on the previous 3-year rolling survey cycle. It takes about 1 year for BLS to process the data. The most recent OES data available in May 2005 were the May 2004 estimates, which reflect data collected in 2002, 2003, and 2004. The earlier years' data are "aged" (updated) to the most recent year using Employment Cost Index wage inflation measures to put all the data in the same

time frame. The OES data are completely updated every 3 years as BLS rotates through its entire sample of establishments.

Special Tabulations—BLS has the technical capability to report data specifically on wages of occupations employed in physician offices by area. But BLS does not routinely report, release, or even tabulate these data. (As noted above, BLS reports only all-industry wages by area.) In addition, BLS does not routinely tabulate and report data on a geographic basis--for example, MSAs and state non-metropolitan areas--that can be directly cross-walked to the current physician payment localities. (BLS reports data by state and MSA, but not for state non-metropolitan areas.)

However, in their conversations with us, BLS staff indicated a willingness to discuss with CMS the possibility of providing special tabulations of the OES data that would be appropriate for the PE GPCI. For example, wages of employees in physician offices by occupation, by payment locality, or by state, MSA, and state non-metropolitan area. The cost of these special tabulations has not been estimated, but is not likely to be large because no additional primary data collection is required.

If the sample is restricted to offices of physicians, sample sizes will be much smaller than are available in the all-industry data. This will lead to larger random sampling error, especially in less populous payment localities. The greater industry specificity of physician office data must be balanced against the larger random error of a smaller sample size. It is possible that on balance all-industry wage estimates may be preferable to those for employees of physician offices alone.

Appropriateness for the PE GPCI—We believe that the BLS OES data are quite appropriate for the PE GPCI. They have good occupational and geographic detail and, through special tabulations, can be restricted to offices of physicians (although it may be preferable to use all-industry occupational wage estimates to obtain sufficient sample sizes by area for stable estimates). They have the largest sample size of any wage survey. They appear to be good quality data, reported by establishments, and are edited for validity. They are totally updated every 3 years, and are expected to remain available indefinitely. They are routinely produced by a U.S. government agency, are well-documented, and are available for no cost (data routinely posted on the BLS website) or low cost (special tabulations). The national occupational wage bill shares (weights) needed to produce an inter-area wage index are easily constructed and updated from this same data source and can be developed specifically for employees in physician offices.

Alternatives to the OES—BLS also informed us about another major wage survey they conduct, the National Compensation Survey (NCS). The NCS has some advantages over the OES. It collects total compensation, not just wages. It also distinguishes level of work within an occupation, for example, supervisory versus nonsupervisory. This should allow a more accurate comparison of wages of similar workers across areas. NCS data are collected through personal interviewer visits, not mail/telephone. The disadvantages of NCS versus OES are that the NCS has less geographic and occupational detail and smaller sample sizes leading to greater random sampling error. OES produces estimates for more than 700 occupations across all states and 334 metropolitan areas, whereas NCS provides estimates for 450 occupations across 81 metropolitan areas and 73 non-metropolitan counties representing the United States and its nine Census

Divisions. State estimates are not available from the NCS. Although we did not conduct a detailed analysis of the NCS, we believe that the OES is superior for the purposes of the PE GPCI, especially in its geographic detail and larger sample size. However, the NCS may be useful to validate the OES and to compare estimates of area variation based on total compensation and level of work versus those based on wages and occupation.

BLS also mentioned the U.S. Census Bureau's American Community Survey (ACS) and Current Population Survey (CPS) as alternatives to its OES data. The ACS was discussed previously. The CPS has a much smaller sample size than the ACS, which is insufficient for the purposes of the PE GPCI.

4.3.2 Analysis Methods and Shares of Occupations in Offices of Physicians

We downloaded the November 2003 BLS OES data available on the BLS website (www.bls.gov) and created an example index of the wages of employees in physician offices. The index was created for states and metropolitan areas and for physician payment localities that are either statewide or contained within a single metropolitan area. We did not create index values for all payment localities because BLS does not routinely publish data for state non-metropolitan areas. However, such data could be obtained in the future through a special request to BLS or by "backing out" values for state non-metropolitan areas from the statewide and metropolitan area data that BLS does routinely release.

A wage index for physician offices involves two major components:

- National wage bill shares of occupations employed in physician offices.
- Relative wages of occupations by area.

For each area, the index is constructed as the sum of the products of each occupation's wage bill share and relative area wage.

$$\text{Index value for area } j = \sum_i [s_i] * [w_{ij}/w_i]$$

where s_i = national wage bill share of occupation i in offices of physicians, w_{ij} = all-industry wage of occupation i in area j, and w_i = national average all-industry wage of occupation i.

National Employment and Wage Bill Shares of Occupations Employed in Physicians' Offices—BLS publishes on its website national industry-specific employment and wage data. We accessed data for North American Industry Classification System code 621100 "Offices of Physicians." BLS publishes wage data both for broader, more aggregated occupational categories and for specific occupations within the broader categories.

It is instructive to first examine the employment shares of the broader categories in offices of physicians shown in Table 4-1.[21] Just three occupational categories–office and administrative support, healthcare practitioner and technical, and healthcare support–account for 93 percent of physician office employment. These categories are consistent with the four categories that are currently used in the PE GPCI: clerical and administrative support personnel, registered nurses (part of the BLS category "healthcare practitioner and technical"), licensed

Table 4-1
Employment shares of non-physician occupational categories in offices of physicians
In descending order of employment share

Occupational category	National employment	Employment share	Cumulative share
Total non-physician[1]	1,799,970	100.00%	--
Office and administrative support	762,840	42.38	42.38%
Healthcare practitioner and technical[1]	615,760	34.21	76.59
Healthcare support	288,260	16.01	92.60
Management	53,060	2.95	95.55
Business and financial operations	15,830	0.88	96.43
Building and grounds cleaning and maintenance	14,910	0.83	97.26
Community and social services	12,910	0.72	97.98
Life, physical, and social sciences	10,240	0.57	98.55
Computer and mathematical sciences	6,580	0.37	98.91
Production occupations	3,050	0.17	99.08
Installation, maintenance, and repair	2,980	0.17	99.25
Sales and related	2,650	0.15	99.39
Personal care and service	2,110	0.12	99.51
Education, training, and library	2,070	0.12	99.63
Art, design, entertainment, sport, and media	1,650	0.09	99.72
Transportation and material moving	1,650	0.09	99.81
Protective service	920	0.05	99.86
Food preparation and serving	630	0.04	99.90
Legal	280	0.02	99.91
Other	1,590	0.09	100.00

NOTES:

[1] Physician occupations are excluded from these categories insofar as possible. BLS did not report employment for the residual category "Physicians, all other," so it was not possible to exclude these physicians. For this reason, non-physician employment and employment share of this category are overstated.

SOURCE: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, November 2003. Accessed at www.bls.gov.

[21] The share of the category "healthcare practitioners and technical" in total non-physician employment is overstated because it is not possible to exclude all physicians from this category. BLS did not separately report data for the residual category "Physicians, all other", so it was not possible to subtract out this category. For the same reason, total non-physician employment in offices of physicians is overstated in Table 4-1.

practical nurses (part of the same BLS category), and medical technicians and aides (part of the same BLS category and the category "healthcare support"). "Management" is the only other BLS category with more than 1 percent of physician office employment. "Business and Financial Operations," which includes accountants and auditors, accounts for only 0.9 percent of employment. "Computer and Mathematical Sciences", which includes computer programmers, network administrators, and computer support specialists, constitutes only 0.4 percent of employment. "Legal," which includes lawyers, accounts for only 0.02 percent of employment.

Some physician practices, especially large group practices, may employ larger proportions of employees outside of the administrative support and healthcare technical and support occupations. But taken as a whole, offices of physicians still overwhelmingly employ the occupations they traditionally have. The BLS OES data do not support the argument that the current PE GPCI employee wage index seriously misrepresents the occupational mix employed by physician practices. Nevertheless, the BLS OES data include a broader and more detailed set of occupations than has been used in the PE GPCI wage index, and the comparisons presented below to the current PE GPCI wage index should reveal any effects of this difference.

Only specific occupations with larger employment contained in the broader categories are reported separately. Thus, in developing national wage bill shares for an area wage index, there is a tradeoff between using more comprehensive data on the broader categories or more specific data on a less comprehensive set of occupations. For example, the broader category "business and financial operations occupations" includes "accountants and auditors," "purchasing agents," "financial analysts," and other occupations not reported separately. The specific occupations reported by BLS covered 92 percent of total non-physician employment in offices of physicians and would allow us to better hold occupation mix constant across areas. Also, it is not possible to completely exclude physicians from the aggregated category data, but physicians can be completely excluded from the specific occupational data.[22] For these reasons, we used the specific occupational data to develop the national wage bill shares for the area wage index. We excluded physician occupations from all calculations.[23]

The national wage bill shares represent the relative importance of each occupation in the non-physician payroll of physicians' offices. Each occupation's estimated wage bill is the product of its employment estimate and its mean hourly wage estimate. Its wage bill share is its portion of the total wage bill (sum of all occupations' wage bills). An occupation's wage bill share is larger if its employment constitutes a greater share of total employment in the offices of physicians and if its wage rate is higher.

Table 4-2 shows the national wage bill shares for offices of physicians by 168 specific occupations. Registered nurses account for the largest share of payroll in offices of physicians (18 percent). The next most important occupations are medical assistants, medical secretaries, receptionists and information clerks, licensed practical and licensed vocational nurses, and billing and posting clerks and machine operators. Together these six occupations account for half of the total physician office wage bill. The top occupations are consistent with the four

[22] See footnote 21.

[23] Standard Occupation Codes 29-1061 through 29-1067 were excluded.

occupations that have been used in the employee wage index of the PE GPCI (registered nurses, licensed practical nurses, administrative support personnel, and medical technicians and aides) but the BLS OES data contain much greater occupational detail.

The Government Accountability Office (GAO, 2005) has recommended including physician assistants in the PE GPCI wage index. Table 4-2 shows that physician assistants account for 4 percent of the physician office wage bill, ranking eighth among all occupations. Physician assistants are included in the BLS OES index we construct.[24]

Relative Wages of Occupations by Area and Wage Index Calculation—The second step in constructing the BLS OES physician office wage index is determining relative wages for each occupation by area. BLS reports only all-industry wages by area, not wages specifically for offices of physicians (although the latter may be available from BLS by special request[25]). We used the BLS-reported all-industry wages for each occupation shown in Table 4-2. The all-industry wage was obtained for each area (state or MSA) and divided by the national all-industry wage.[26]

The next step was multiplying the relative wage of each occupation by its national wage bill share and summing across occupations. This created a relative wage index value for each area. In some areas, BLS did not report the wages of all occupations due to insufficient sample sizes. In these cases, we excluded that occupation from the wage index computation and renormalized the weights (wage bill shares) of the reported occupations so that they totaled 100 percent. In effect, this assumes that the relative wages of unreported occupations in an area equal the relative wages of reported occupations, probably a reasonable assumption since relative wages are highly correlated across areas.

As a final step, we normalized the state-level BLS OES wage index so that the national average weighted by practice expense relative value units was 1.00.[27] Puerto Rico, the Virgin Islands and Guam were excluded from the national average. The PE GPCI employee wage index was normalized to the same national average for comparison.

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[24] It may also be possible to add physician assistants to a wage index constructed from ACS or the Census long form data.

[25] OES area wage data specific to offices of physicians will have much smaller sample sizes than all-industry data. This will limit the number of occupations for which physician-office-specific relative area wages could be accurately measured. The options for measuring local relative wages with the OES data would be: (1) use all-industry wages for all occupations; (2) use physician-office-specific wages for a few occupations commonly employed in physician offices; or (3) use physician-office-specific wages for occupations commonly employed in physician offices and all-industry wages for other occupations.

[26] The national all-industry wages used in the relative wage ratios differ from the national physician office specific wages shown in Table 4-4.

[27] It was not possible to normalize the metropolitan area index values for the BLS OES index (used for payment locality comparisons) because we did not have data on non-metropolitan areas to create a national average.

Table 4-2
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
29-1111	Registered nurses	199,040	$24.71	17.98%	17.98%
31-9092	Medical assistants	219,790	12.17	9.78	27.76
43-6013	Medical secretaries	155,600	12.98	7.38	35.14
43-4171	Receptionists and information clerks	157,250	11.03	6.34	41.48
29-2061	Licensed practical and licensed vocational nurses	88,410	14.82	4.79	46.27
43-3021	Billing and posting clerks and machine operators	88,060	13.27	4.27	50.55
43-1011	First-line supervisors/managers of office and administrative support workers	59,190	19.72	4.27	54.81
29-1071	Physician assistants	34,730	32.07	4.07	58.89
29-2034	Radiologic technologists and technicians	41,420	20.64	3.13	62.01
43-9061	Office clerks, general	78,280	10.84	3.10	65.11
11-9111	Medical and health services managers	23,160	36.40	3.08	68.20
43-6014	Secretaries, except legal, medical, and executive	47,490	12.44	2.16	70.35
11-1021	General and operations managers	14,860	38.42	2.09	72.44
43-6011	Executive secretaries and administrative assistants	27,340	17.84	1.78	74.23
43-3031	Bookkeeping, accounting, and auditing clerks	32,660	14.20	1.70	75.92
29-2071	Medical records and health information technicians	40,700	10.99	1.64	77.56
31-9094	Medical transcriptionists	31,870	13.63	1.59	79.14
43-3011	Bill and account collectors	25,430	13.65	1.27	80.41
29-2012	Medical and clinical laboratory technicians	24,420	14.13	1.26	81.67
43-4071	File clerks	36,280	9.26	1.23	82.90
29-2011	Medical and clinical laboratory technologists	14,570	19.65	1.05	83.95
29-2032	Diagnostic medical sonographers	10,550	25.25	0.97	84.92

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
29-1041	Optometrists	4,140	59.19	0.90%	85.82%
29-1123	Physical therapists	6,190	30.62	0.69	86.51
31-1012	Nursing aides, orderlies, and attendants	14,810	11.02	0.60	87.11
19-3031	Clinical, counseling, and school psychologists	5,810	26.21	0.56	87.67
11-1011	Chief executives	2,010	69.21	0.51	88.17
43-2011	Switchboard operators, including answering service	12,920	10.64	0.50	88.68
13-2011	Accountants and auditors	5,340	25.42	0.50	89.17
43-4051	Customer service representatives	10,570	12.78	0.49	89.67
29-1051	Pharmacists	3,310	38.52	0.47	90.13
29-2081	Opticians, dispensing	8,370	15.14	0.46	90.60
29-2055	Surgical technologists	7,180	17.03	0.45	91.04
29-2033	Nuclear medicine technologists	3,150	36.55	0.42	91.46
11-3011	Administrative services managers	3,750	29.57	0.41	91.87
11-3031	Financial managers	3,160	34.70	0.40	92.27
29-2031	Cardiovascular technologists and technicians	5,410	18.98	0.38	92.65
29-1124	Radiation therapists	3,040	31.21	0.35	92.99
29-1020	Dentists	1,650	54.75	0.33	93.32
37-2011	Janitors and cleaners, except maids and housekeeping cleaners	8,970	9.45	0.31	93.63
43-4111	Interviewers, except eligibility and loan	6,270	11.98	0.27	93.91
43-9021	Data entry keyers	6,070	11.54	0.26	94.16
19-1042	Medical scientists, except epidemiologists	1,810	37.26	0.25	94.41
29-1121	Audiologists	2,470	24.18	0.22	94.63
21-1022	Medical and public health social workers	2,980	18.88	0.21	94.83

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
21-1023	Mental health and substance abuse social workers	2,900	18.78	0.20%	95.03%
29-1126	Respiratory therapists	2,290	23.25	0.19	95.23
29-2052	Pharmacy technicians	3,540	13.78	0.18	95.41
37-2012	Maids and housekeeping cleaners	4,920	9.67	0.17	95.58
31-2021	Physical therapist assistants	2,640	16.61	0.16	95.74
29-1122	Occupational therapists	1,600	27.27	0.16	95.90
11-3021	Computer and information systems managers	1,280	33.27	0.16	96.06
29-1031	Dietitians and nutritionists	2,010	21.11	0.16	96.21
15-1041	Computer support specialists	2,290	17.33	0.15	96.36
29-1127	Speech-language pathologists	770	48.12	0.14	96.49
43-9041	Insurance claims and policy processing clerks	2,590	13.12	0.12	96.62
51-9083	Ophthalmic laboratory technicians	2,070	16.11	0.12	96.74
11-3040	Human resources managers	1,040	30.62	0.12	96.85
31-9091	Dental assistants	2,510	12.20	0.11	96.97
49-9042	Maintenance and repair workers, general	2,210	13.54	0.11	97.08
31-9093	Medical equipment preparers	2,200	12.72	0.10	97.18
43-3051	Payroll and timekeeping clerks	1,940	13.99	0.10	97.28
21-1014	Mental health counselors	1,300	19.92	0.09	97.37
29-2041	Emergency medical technicians and paramedics	1,800	14.12	0.09	97.46
29-2021	Dental hygienists	900	25.61	0.08	97.55
15-1071	Network and computer systems administrators	940	24.29	0.08	97.63
21-1021	Child, family, and school social workers	1,160	19.48	0.08	97.71
21-1091	Health educators	1,210	18.66	0.08	97.80
31-2022	Physical therapist aides	1,950	11.24	0.08	97.88

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
43-5021	Couriers and messengers	2,220	9.87	0.08%	97.96%
43-4161	Human resources assistants, except payroll and timekeeping	1,400	14.92	0.08	98.03
13-1073	Training and development specialists	970	20.65	0.07	98.11
13-1111	Management analysts	620	31.07	0.07	98.18
21-1093	Social and human service assistants	1,450	13.25	0.07	98.25
43-9022	Word processors and typists	1,610	11.58	0.07	98.32
11-2021	Marketing managers	750	24.20	0.07	98.38
41-2011	Cashiers	1,680	10.67	0.07	98.45
15-1031	Computer software engineers, applications	540	31.39	0.06	98.51
15-1051	Computer systems analysts	560	26.11	0.05	98.56
31-9011	Massage therapists	870	16.73	0.05	98.62
13-1023	Purchasing agents, except wholesale, retail, and farm products	730	18.83	0.05	98.67
13-1071	Employment, recruitment, and placement specialists	680	20.14	0.05	98.72
31-1011	Home health aides	1,350	10.10	0.05	98.77
13-2051	Financial analysts	470	28.78	0.05	98.82
21-1011	Substance abuse and behavioral disorder counselors	680	18.73	0.05	98.86
29-1011	Chiropractors	290	40.83	0.04	98.91
43-5061	Production, planning, and expediting clerks	890	13.15	0.04	98.95
49-9062	Medical equipment repairers	460	22.83	0.04	98.99
33-9032	Security guards	820	12.55	0.04	99.02
43-5081	Stock clerks and order fillers	760	13.20	0.04	99.06
31-9095	Pharmacy aides	730	12.88	0.03	99.10
43-9011	Computer operators	670	13.42	0.03	99.13
13-1072	Compensation, benefits, and job analysis specialists	420	21.33	0.03	99.16

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
29-2054	Respiratory therapy technicians	510	16.50	0.03%	99.19%
39-5094	Skin care specialists	540	15.49	0.03	99.22
11-2031	Public relations managers	250	32.27	0.03	99.25
27-3031	Public relations specialists	390	20.34	0.03	99.28
53-3041	Taxi drivers and chauffeurs	860	9.18	0.03	99.31
37-1011	First-line supervisors/managers of housekeeping and janitorial workers	480	16.17	0.03	99.34
15-1061	Database administrators	320	23.31	0.03	99.37
19-3021	Market research analysts	320	22.46	0.03	99.39
27-4021	Photographers	340	20.88	0.03	99.42
27-3091	Interpreters and translators	470	14.77	0.03	99.44
29-2051	Dietetic technicians	490	14.04	0.03	99.47
15-1081	Network systems and data communications analysts	220	30.70	0.02	99.49
13-1041	Compliance officers, except agriculture, construction, health and safety, and transportation	250	25.08	0.02	99.52
13-1031	Claims adjusters, examiners, and investigators	300	17.19	0.02	99.53
29-9010	Occupational health and safety specialists and technicians	240	21.42	0.02	99.55
21-1013	Marriage and family therapists	210	23.77	0.02	99.57
13-2031	Budget analysts	200	23.28	0.02	99.59
11-9033	Education administrators, postsecondary	80	56.22	0.02	99.61
39-9031	Fitness trainers and aerobics instructors	320	14.04	0.02	99.62
43-5071	Shipping, receiving, and traffic clerks	340	11.80	0.01	99.64
25-4021	Librarians	180	22.28	0.01	99.65
39-9021	Personal and home care aides	400	9.23	0.01	99.66

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
23-1011	Lawyers	80	44.51	0.01%	99.68%
53-3033	Truck drivers, light or delivery services	360	9.83	0.01	99.69
49-1011	First-line supervisors/managers of mechanics, installers, and repairers	150	23.29	0.01	99.70
11-3061	Purchasing managers	130	26.73	0.01	99.72
37-3011	Landscaping and groundskeeping workers	320	10.54	0.01	99.73
43-4061	Eligibility interviewers, government programs	250	13.35	0.01	99.74
21-1015	Rehabilitation counselors	190	17.34	0.01	99.75
43-3061	Procurement clerks	250	13.08	0.01	99.76
31-2011	Occupational therapist assistants	180	17.67	0.01	99.78
15-2031	Operations research analysts	110	22.09	0.01	99.79
19-4021	Biological technicians	140	17.19	0.01	99.79
15-2041	Statisticians	100	23.94	0.01	99.80
51-1011	First-line supervisors/managers of production and operating workers	90	26.42	0.01	99.81
11-2022	Sales managers	50	44.78	0.01	99.82
29-2091	Orthotists and prosthetists	90	24.48	0.01	99.83
17-2031	Biomedical engineers	70	31.29	0.01	99.84
43-4021	Correspondence clerks	160	12.56	0.01	99.84
13-1121	Meeting and convention planners	100	19.60	0.01	99.85
43-9081	Proofreaders and copy markers	120	16.25	0.01	99.86
43-9051	Mail clerks and mail machine operators, except postal service	160	10.76	0.01	99.86
35-2012	Cooks, institution and cafeteria	160	10.49	0.01	99.87
15-1032	Computer software engineers, systems software	50	32.47	0.01	99.88

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
31-2012	Occupational therapist aides	120	13.22	0.01%	99.88%
35-2021	Food preparation workers	190	8.33	0.01	99.89
25-9031	Instructional coordinators	70	21.58	0.01	99.89
25-4031	Library technicians	100	15.06	0.01	99.90
43-4121	Library assistants, clerical	120	11.93	0.01	99.90
43-9071	Office machine operators, except computer	130	10.66	0.01	99.91
41-1011	First-line supervisors/managers of retail sales workers	80	16.96	0.005	99.91
17-2112	Industrial engineers	50	26.85	0.005	99.92
19-1021	Biochemists and biophysicists	30	44.51	0.005	99.92
43-5031	Police, fire, and ambulance dispatchers	90	14.66	0.005	99.93
47-2111	Electricians	60	21.43	0.005	99.93
41-2031	Retail salespersons	110	11.68	0.005	99.94
27-1024	Graphic designers	60	20.77	0.005	99.94
53-3011	Ambulance drivers and attendants, except emergency medical technicians	130	9.02	0.004	99.95
25-2011	Preschool teachers, except special education	90	12.78	0.004	99.95
51-6011	Laundry and dry-cleaning workers	130	8.74	0.004	99.95
21-2011	Clergy	50	22.69	0.004	99.96
53-7062	Laborers and freight, stock, and material movers, hand	90	12.33	0.004	99.96
27-3041	Editors	40	27.17	0.004	99.97
39-9011	Child care workers	90	10.51	0.003	99.97
13-2041	Credit analysts	40	22.36	0.003	99.97
43-9111	Statistical assistants	60	14.06	0.003	99.98
39-9032	Recreation workers	70	11.82	0.003	99.98

(continued)

Table 4-2 (continued)
National wage bill shares of non-physician occupations employed in offices of physicians[1]
Sorted in descending order of wage bill share[2]

Standard occupational code	Occupational title	Total employment	Hourly mean wage	Wage bill share	Cumulative share
49-2011	Computer, automated teller, and office machine repairers	40	20.13	0.003	99.98%
35-1012	First-line supervisors/managers of food preparation and serving workers	50	16.06	0.003	99.99
47-2031	Carpenters	40	19.82	0.003	99.99
47-2152	Plumbers, pipefitters, and steamfitters	30	26.33	0.003	99.99
37-1012	First-line supervisors/managers of landscaping, lawn service, and groundskeeping workers	40	17.90	0.003	99.99
43-2021	Telephone operators	50	12.42	0.002	100.00
53-6021	Parking lot attendants	50	9.29	0.002	100.00
17-3025	Environmental engineering technicians	30	10.88	0.001	100.00
35-3022	Counter attendants, cafeteria, food concession, and coffee shop	30	8.55	0.001	100.00
TOTAL		**1,663,540**	**16.44**	**100.00%**	**--**

NOTES:

[1] Excludes occupations not reported separately by BLS.

[2] Wage bill equals the product of employment and mean hourly wage.

SOURCE: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, November 2003. Accessed at www.bls.gov.

4.4 Comparison of Indices Based on Hospital Wage Data and BLS OES Wage Data to PE GPCI Employee Wage Data

For the purposes of this comparison, we created, at the physician locality and state levels, an illustrative wage index based on hospital-specific wage and hours data that are used in constructing the HWI. The hospital wage data used for this analysis includes neither the geographic reclassification nor the rural floor. In making this comparison, methodologically, we first aggregated total hospital wages and hours in each physician payment locality to compute a physician payment locality hourly wage. We then calculated the weighted hourly wage for each physician payment locality by the multiplying the hourly wage by total PE RVUs in the locality. Next, we summed the PE RVUs across all localities. The ratio of these two numbers is the weighted mean of hospital wages. Finally, we divided all the locality wages by this mean to get a wage index normalized to 1.00. We created the index such that the national average equaled one after excluding Guam, Puerto Rico, and the Virgin Islands.

In addition to the locality index, we constructed a state level hospital wage index. The methodology was very similar to that for physician payment localities, except the hourly hospital wage was calculated for each individual state and then the state hourly wages were weighted by the state total PE RVUs to create the index. In both cases, the hourly wages were weighted by PE RVUs.

We were unable to locate the PE GPCI employee wage index on the CMS website or obtain it directly from CMS. Therefore, we imputed this wage index using the overall PE GPCI index for 2006, the office rental index, and the GPCI cost shares reported in the August 5, 2004, Federal Register.[28] We obtained from CMS the physician PE relative value units (RVUs) by county that CMS uses to weight the PE GPCI and used these in calculating national averages and aggregating wage data (e.g., from payment localities to states).

In comparing the current PE GPCI with any alternative data sources or index construction methods, it important to note several important caveats. All results presented here are illustrative. Index construction methods presented here are not necessarily the methods that would be used by CMS if it were to use data from these alternative sources. The data used to construct the wage indices based on the Medicare HWI data and the BLS-OES data are not from the same year as the 2006 GPCI data. Wage data change over time. Any correct comparison would need to use data from the same year. Furthermore, in the construction of the HWI-based index, counts of PE RVUs are critical in order to correctly scale the resulting index. These counts can change over time. Consequently, any estimated changes for 2006 are not reflective of what results would be in a subsequent year and are clearly not reflective of any actual proposal that could result using alternative data sources.

We looked at the correlation between the three indices: an index based on the hospital specific wage data used to construct the HWI, an index based on the BLS-OES wage data, and

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[28] Table 5 in the August 5, 2004, *Federal Register* describes the structure of the PE GPCI: 0.437*(2006 practice expense GPCI) = 0.187*(employee wage index) + 0.122*(office rental index) + 0.128. Therefore, knowledge of the practice expense GPCI (from Addendum H) and the office rental index (from Addendum E), allows one to solve for the employee wage index for each physician payment locality.

the employee wage index component of the PE GPCI. A priori there should be a high correlation between the three indices because they all measure regional variation in healthcare employee wages. However, the correlation should not be perfect because the sources of data are different, the years of the data are different, the cost shares are different, and different levels of aggregation of the data and different labor categories are used. In fact, all three indices are highly correlated. The pair-wise unweighted correlation for all payment localities between the three indices is greater than 0.93; the weighted correlations are always greater than 0.94.

The most important issue is how a switch from the current data used in the PE GPCI wage component to hospital wage or BLS-OES data would affect total payment in different physician localities. The employee wage index is only one component of the PE GPCI. As noted above, it comprises approximately 43 percent of the PE GPCI. Therefore, the effect of using any alternative data sources in the construction of the PE GPCI would only be less than half the effect of the change in the employee wage index. Furthermore, the PE GPCI contributes only 44 percent of the geographic adjustment that is used in the fee schedule. Thus, employee wages represent 18.7 percent of the average physician's fee. Therefore, a 1 percent change in the employee wage index would result in a change in the average fee of approximately 0.187 percent.

Our illustrative impacts show that the impact of using alternatives to the current data would likely generally be minimal (Table 4-3). If the hospital-specific data used for the HWI were to be used, in lieu of data currently used, to proxy physician employee wages differences among areas, 44 localities (including statewide localities) would see an increase in aggregate Medicare physician payments, 9 of which would see increases of more than 1 percent. Forty-five localities would see decreases in aggregate Medicare physicians payments, 13 of which would see decreases of more than 1 percent. At the State level, 26 States would see an increase in aggregate Medicare physician payments, 9 of which would see increases of more than 1 percent. Twenty-five States (and the District of Columbia) would see decreases in aggregate Medicare physicians payments, three of which would see decreases of more than 1 percent. Payments in a number of rural areas would increase but payments would also decrease in a number of rural areas.

If the BLS-OES data were used, 33 States would see increases, but only 3 would see increases of more than 1 percent and 17 would see decreases. Only two States would see decrease of more than 1 percent. In addition, the direction of the simulated impact is often the same using either of the two data sources. The direction of the change is the same for 37 States. Because of the way that the BLS-OES data are collected, analysis could not be done at the locality level.

This analysis used hospital wage data used to construct the FY 2005 HWI. The hospital wage data for the FY 2005 HWI is 10 percent adjusted and 90 percent unadjusted for occupational mix based on information collected in 2003. Beginning with the FY 2007 wage index, CMS will apply a 100 percent occupational adjustment to hospital wage data using occupational mix survey data collected in 2006. As such, the analysis presented here is preliminary and illustrative and should not be taken to be representative of impacts using occupationally adjusted hospital wage data were such an option to be adopted in the future.

Table 4-3
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Alaska		1.184	1.078	1.143	1.83%	1.13%
Alabama		0.835	0.864	0.862	-0.63%	-0.04%
Arkansas		0.828	0.838	0.854	-0.22%	0.36%
Arizona		0.963	0.957	0.963	0.11%	0.12%
California		1.199	1.123	1.152	1.27%	0.49%
	Ventura, CA	1.104	1.083	1.097	0.36%	0.24%
	Santa Clara, CA	1.466	1.337	1.332	1.80%	-0.07%
	San Mateo, CA	1.456	1.368	--	1.20%	--
	San Francisco, CA	1.459	1.387	--	0.97%	--
	Rest of California	1.115	1.038	--	1.38%	--
	Oakland/Berkeley, CA	1.513	1.287	1.260	3.28%	-0.39%
	Marin/Napa/Solana, CA	1.391	1.217	--	2.67%	--
	Los Angeles, CA	1.170	1.130	1.144	0.66%	0.23%
	Anaheim/Santa Ana, CA	1.154	1.148	1.133	0.10%	-0.24%
Colorado		1.020	0.979	1.043	0.79%	1.22%
Connecticut		1.168	1.218	1.171	-0.77%	-0.72%
District of Columbia		1.132	1.184	1.152	-0.82%	-0.50%
	DC and MD/VA suburbs	1.113	1.184	1.131	-1.11%	-0.84%
Delaware		1.068	1.064	1.044	0.07%	-0.35%
Florida		0.945	0.928	0.945	0.35%	0.35%
	Rest of Florida	0.917	0.904	--	0.27%	--
	Miami, FL	0.998	0.978	--	0.39%	--
	Fort Lauderdale, FL	0.997	0.961	--	0.71%	--
Georgia		0.931	0.952	0.959	-0.41%	0.13%
	Rest of Georgia	0.892	0.895	--	-0.06%	--
	Atlanta, GA	0.994	1.048	--	-0.96%	--
Hawaii/Guam		1.084	1.122	--	-0.63%	--
Iowa		0.896	0.878	0.884	0.37%	0.13%
Idaho		0.913	0.873	0.893	0.85%	0.43%
Illinois		1.008	1.032	0.979	-0.43%	-0.95%
	Suburban Chicago, IL	1.043	1.102	1.038	-1.00%	-1.09%
	Rest of Illinois	0.891	0.887	--	0.07%	--
	East St. Louis, IL	0.820	0.933	--	-2.27%	--
	Chicago, IL	1.089	1.128	1.038	-0.65%	-1.49%

(continued)

Table 4-3 (continued)
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Indiana		0.930	0.933	0.924	-0.06%	-0.18%
Kansas		0.901	0.883	0.892	0.39%	0.19%
Kentucky		0.843	0.879	0.890	-0.76%	0.23%
Louisiana		0.838	0.884	0.853	-0.97%	-0.65%
	Rest of Louisiana	0.817	0.866	--	-1.05%	--
	New Orleans, LA	0.898	0.951	0.906	-1.04%	-0.88%
Massachusetts		1.116	1.144	1.140	-0.46%	-0.07%
	Rest of Massachusetts	1.063	1.078	--	-0.26%	--
	Metropolitan Boston	1.164	1.216	1.180	-0.80%	-0.55%
Maryland		0.992	1.070	1.082	-1.36%	0.21%
	Rest of Maryland	0.943	0.936	--	0.14%	--
	Baltimore, MD and suburbs	0.984	1.067	1.047	-1.45%	-0.35%
	DC and MD/VA suburbs	1.113	1.184	1.131	-1.11%	-0.84%
Maine		0.955	0.934	0.950	0.43%	0.33%
	Southern Maine	1.005	0.974	--	0.59%	--
	Rest of Maine	0.930	0.904	--	0.54%	--
Michigan		0.991	1.023	1.016	-0.59%	-0.13%
	Rest of Michigan	0.951	0.957	--	-0.13%	--
	Detroit, MI	1.035	1.084	--	-0.85%	--
Minnesota		1.070	1.020	1.057	0.92%	0.68%
Missouri		0.884	0.884	0.929	-0.01%	0.94%
	Rest of Missouri	0.821	0.802	--	0.44%	--
	Metropolitan St. Louis, MO	0.927	0.949	0.943	-0.42%	-0.12%
	Metropolitan Kansas City, MO	0.959	0.980	0.938	-0.40%	-0.80%
Mississippi		0.792	0.856	0.851	-1.39%	-0.11%
Montana		0.893	0.814	0.832	1.82%	0.41%
North Carolina		0.929	0.946	0.959	-0.34%	0.26%
North Dakota		0.811	0.846	0.845	-0.77%	-0.02%
Nebraska		0.960	0.887	0.897	1.54%	0.21%
New Hampshire		1.024	0.981	0.999	0.81%	0.34%
New Jersey		1.117	1.186	1.117	-1.08%	-1.08%
	Rest of New Jersey	1.064	1.114	--	-0.83%	--
	Northern NJ	1.157	1.236	--	-1.20%	--
New Mexico		0.967	0.887	0.912	1.69%	0.53%

(continued)

Table 4-3 (continued)
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Nevada		1.093	1.026	1.040	1.23%	0.26%
New York		1.186	1.181	1.111	0.09%	-1.11%
	Rest of New York	0.883	0.948	--	-1.29%	--
	Queens, NY	1.337	1.222	1.218	1.76%	-0.06%
	Poughkeepsie, Northern NYC suburbs	1.051	1.040	--	0.19%	--
	NYC Suburbs, Long Island, NY	1.313	1.265	--	0.71%	--
	Manhattan, NY	1.402	1.365	1.218	0.50%	-2.01%
Ohio		0.931	0.964	0.952	-0.64%	-0.23%
Oklahoma		0.846	0.858	0.846	-0.27%	-0.26%
Oregon		1.090	0.988	1.045	1.94%	1.09%
	Rest of Oregon	1.034	0.939	--	1.90%	--
	Portland, OR	1.146	1.097	1.100	0.83%	0.05%
Pennsylvania		0.935	0.981	0.961	-0.87%	-0.38%
	Rest of Pennsylvania	0.873	0.926	--	-1.08%	--
	Metropolitan Philadelphia, PA	1.080	1.125	1.062	-0.74%	-1.05%
Rhode Island		1.099	1.032	1.063	1.21%	0.56%
South Carolina		0.916	0.919	0.920	-0.07%	0.02%
South Dakota		0.891	0.853	0.868	0.82%	0.33%
Tennessee		0.897	0.899	0.913	-0.03%	0.29%
Texas		0.927	0.918	0.948	0.17%	0.61%
	Rest of Texas	0.883	0.855	--	0.62%	--
	Houston, TX	1.006	1.031	0.984	-0.45%	-0.85%
	Galveston, TX	0.934	0.968	0.905	-0.66%	-1.22%
	Fort Worth, TX	0.952	0.970	1.017	-0.34%	0.91%
	Dallas, TX	0.998	1.045	1.017	-0.83%	-0.50%
	Brazoria, TX	0.849	0.928	0.920	-1.59%	-0.16%
	Beaumont, TX	0.856	0.883	0.849	-0.58%	-0.72%
	Austin, TX	0.963	0.973	1.004	-0.19%	0.60%
Utah		0.934	0.897	0.920	0.78%	0.48%
Virginia		0.932	0.960	0.988	-0.55%	0.56%
	Virginia locality	0.906	0.919	--	-0.26%	--
	DC and MD/VA suburbs	1.113	1.184	1.131	-1.11%	-0.84%
Vermont		0.929	0.943	0.986	-0.28%	0.85%

(continued)

Table 4-3 (continued)
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Washington		1.089	1.055	1.109	0.60%	0.96%
	Seattle (King County), WA	1.141	1.161	1.174	-0.33%	0.21%
	Rest of Washington	1.064	1.012	--	0.95%	--
Wisconsin		0.969	0.951	0.983	0.35%	0.63%
West Virginia		0.837	0.828	0.822	0.21%	-0.14%
Wyoming		0.912	0.832	0.867	1.79%	0.79%

NOTES:

[1] Excluding Guam, Puerto Rico, and the U.S. Virgin Islands. Weighted by physician practice expense relative value units.

[2] Alaska's PE GPCI is mandated to be 1.67. Therefore comparisons are not meaningful.

[3] BLS reports OES data by state and metropolitan area only. Thus, the OES index could not be calculated for some payment localities.

SOURCE: PE GPCI: *Federal Register,* August 5, 2004.

Hospital Wage Index: *Federal Register*, August 11, 2004 as corrected on CMS website December 22, 2004.

BLS OES data: U.S. Bureau of Labor Statistics Occupational Employment Statistics data for November 2003. Accessed at www.bls.gov.

4.5 Conclusions

The three alternatives reviewed in this chapter for the PE GPCI's employee wage index are the U.S. Bureau of the Census American Community Survey, the CMS Hospital Wage Index, and the U.S. Bureau of Labor Statistics Occupational Employment Statistics data. Further assessments of the various datasets could be performed. While the OES data appear most promising, CMS would need to negotiate a special tabulation of OES data with BLS because BLS does not make the entire OES dataset publicly available. Additionally, some critical data for the GPCI--in particular, for non-metropolitan areas and for offices of physicians by area--are not routinely published by BLS. Once these data were obtained, analysis would be necessary to determine the most appropriate components of the OES data to use for the employee wage index.

SECTION 5
REVIEW OF ALTERNATIVE DATA SOURCES: OFFICE RENTS AND OTHER EXPENSES

In this chapter, we first review alternative sources of data to measure geographic variation in physician office rents, then in supplies, equipment, and other and miscellaneous expenses.

5.1 Office Rents

The physicians in Iowa and Maine were concerned about the accuracy of the PE GPCI's office rental proxy, the Department of Housing and Urban Development's (HUD's) Fair Market Apartment Rents (FMRs). As many observers have, they questioned the face validity of using relative apartment rents to proxy relative physician office rents. Nevertheless, some meeting participants noted that use of the apartment rental proxy may be valid and may benefit rural areas. Participants suggested a few sources of data on office rents or values, including local property tax rolls.

The Government Accountability Office (GAO) has also recently reviewed the GPCIs (GAO, 2005) and noted the greater face validity of an index of commercial rents. GAO recommended that CMS evaluate the index of standardized U.S. Postal Service rental costs constructed by Anthony M. Yezer, Professor of Economics at George Washington University. Postal Service rental data have previously been evaluated by CMS contractors (Dayhoff and Pope, 1994), but that report is over 10 years old and does not evaluate Professor Yezer's quality-adjusted rental index. Given that other sources of data on commercial office rents contain information on only a limited number of geographic areas (Dayhoff and Pope, 1994), we believe that the postal rental data are the best available source to measure geographic variation in commercial rents.

This section first provides a brief review of the HUD FMRs. Then we discuss the postal service rental data, including the previous analysis of Dayhoff and Pope (1994) and Professor Yezer's approach to adjusting the data. Professor Yezer was a consultant to this project. His analysis of measuring geographic variation in physician office rents, his description of the postal data, his adjustment methods, and his empirical results are contained in Appendix D.

5.1.1 U.S. Department of Housing and Urban Development Fair Market Rents

Description[29]— FMRs determine the eligibility of rental housing units for the Section 8 Housing Assistance Payments program. Section 8 Rental Certificate program participants cannot rent units whose rents exceed the FMRs. FMRs also serve as the payment standard used to calculate subsidies under the Rental Voucher program. The U.S. Department of Housing and Urban Development annually estimates FMRs for metropolitan areas and non-metropolitan county FMR areas.

[29] The description of the FMRs in this section draws heavily on HUD's description of the FMRs on its website "Fair Market Rents for the Section 8 Housing Assistance Payments Program" available at http://www.huduser.org/datasets/fmr/fmrover.doc.

FMRs are gross rent estimates. They include the shelter rent plus the cost of all utilities, except telephones. HUD sets FMRs to ensure that a sufficient supply of rental housing is available to program participants. To accomplish this objective, FMRs must be both high enough to permit a selection of units and neighborhoods and low enough to serve as many low-income families as possible. The level at which FMRs are set is expressed as a percentile within the rent distribution of standard-quality rental housing units. The current definition used is the 40th percentile rent for most areas and the 50^{th} percentile for some areas. The 40th percentile rent is drawn from the distribution of rents of all units occupied by recent movers (renter households who moved to their current residence within the past 15 months). Public housing units and units less than 2 years old are excluded.

HUD uses three sources of survey data to develop the FMR estimates:

- *The Decennial Census*, which provides statistically reliable rent data for use in establishing base year FMRs.

- *American Housing Surveys (AHS)*, which are conducted by the Bureau of Census for HUD and whose accuracy is comparable to that of the Decennial Census. AHSs enable HUD to develop revisions between Census years for the largest metropolitan areas that are surveyed on a revolving schedule.

- R*andom digit dialing (RDD) telephone surveys*, which are based on a sampling procedure that uses computers to select statistically random samples of telephone numbers, dial and keep track of them, and tabulate the responses to the calls. RDD surveys are conducted for HUD by a contractor to: (1) develop the annual HUD regional gross rent change factors and (2) develop 40th percentile FMR estimates of about 60 selected FMR areas per year. RDD regional rent change factors are developed annually for the metropolitan parts (exclusive of metropolitan areas with their own Consumer Price Index [CPI]) and non-metropolitan parts of each of the 10 HUD regions.

Base year FMR estimates are updated and trended forward using CPI data for rents and utilities or HUD regional updating factors developed from the RDD surveys. CPI data are available for approximately 100 metropolitan FMR areas. The RDD regional factors are used to update the base year estimates for all FMR areas that do not have their own CPI survey.

HUD defines FMR areas as metropolitan areas and non-metropolitan counties. With a few exceptions, the most current OMB definitions of metropolitan areas are used. HUD uses the OMB definitions because of the generally close correspondence between them and housing market areas. FMRs are intended to be housing market-wide rent estimates that provide housing opportunities throughout the geographic area in which rental units are in direct competition. Exceptions include a small number of metropolitan areas whose revised OMB definitions encompass areas that are larger than HUD's definitions of housing market areas.

Since the FY1996 FMRs, HUD has implemented a minimum FMR policy, in response to numerous public concerns that FMRs in rural areas were too low to operate the program successfully. The new policy establishes the FMRs at the higher of the local FMR or the

statewide 40th percentile rent for non-metropolitan counties, subject to a ceiling rent cap. The state minimum also affects a small number of metropolitan areas whose rents would otherwise fall below the state minimum.

HUD publishes FMRs in the *Federal Register*, first as proposed estimates for public comment and then for final effect. The proposed FMRs are usually published in mid-April, with a 60-day period allowed for comments. By law, the final FMRs for use in any fiscal year must be published and available for use at the start of that fiscal year on October 1.

The purpose of the public comments process is to identify areas where local government officials or residents believe the FMRs are too high or too low. Public housing agencies and other organizations responsible for operating the Section 8 programs submit most comments. To be considered for FMR revisions, the comments must include statistically valid rental housing survey data that justify the recommended changes.

Advantages and Disadvantages for the PE GPCI—The advantages of the HUD FMRs for the PE GPCI office rental index are that the FMRs are available with a consistent methodology for all physician payment localities, including both urban and rural areas. They are adjusted for apartment size and quality, albeit imperfectly. Moreover, they are produced and annually updated by a government agency using a publicly documented methodology and are available at no cost to CMS. Although the FMRs measure apartment rents, some physician offices are located in residential buildings and areas, and many of the same factors (e.g., population density) that affect residential rents should affect commercial rents. The HUD FMRs have been compared to several measures of commercial rents and were highly correlated across areas for which both rents were available (Dayhoff and Pope, 1994). In addition, Gillis et al. (1993) found that the FMRs explained a reasonable share of office expenses per square foot. The sample sizes of buildings on which the FMRs are based greatly exceed the number of buildings reflected in commercial rental measures. This means that the FMR's coverage and representation of rents in an entire area is much better than that of commercial rental sources, and that the FMRs are subject to much less random statistical error (Dayhoff and Pope, 1994).

The disadvantages of the FMRs are that they are a proxy measure that does not necessarily reflect the relative office rents paid by physicians' practices, or the type of buildings or areas in which physician offices are located. Moreover, their adjustments for apartment size and quality are limited.

5.1.2 U.S. Postal Service Rental Data

Description—The U.S. Postal Service (USPS) maintains a file containing cost and square footage data on buildings it leases nationwide. This file contains usable information on roughly 25,000 leased buildings. These buildings are primarily local post offices dealing with the public, although distribution centers and office buildings are included. Information available includes whether the building is leased or owned, the date the lease was effective or the building was purchased, interior square footage, annual rent or purchase price, and building location (zip code).

Geographic coverage of the USPS rental data is better than other sources of commercial rental data, which tend to focus on a limited number of large cities. In fact, because of the large

number of rural post offices, coverage of rural areas is especially good. Moreover, post offices are widely dispersed into small commercial and residential areas, which may have similarities to where physicians locate their offices.

Nevertheless, the post office buildings are not necessarily a nationally or locally representative sample of commercial office rents, nor are they a representative sample of the buildings where physicians locate their offices. Moreover, the number of postal buildings available to measure rents, although good in comparison to other sources of commercial rents, is nevertheless limited. Dayhoff and Pope (1994) found that virtually all counties had fewer than 100 leased postal buildings and most had 10 or fewer. Although most physician payment localities are comprised of multiple counties, some localities are likely to contain only a limited number of postal buildings. For instance, at the state level, the number of buildings contained in the postal dataset ranged from 30 in Delaware to 1,076 in Pennsylvania. Nine states had fewer than 100 buildings (Dayhoff and Pope, 1994). The number of apartment rents used to calculate the HUD FMRs are much larger. For example, in many urban counties, the FMRs are based on thousands of apartments, 97,934 in Cook county, Illinois, 55,705 in Orange county, California, and 3,787 in Staten Island, New York.

Previous Evaluation by CMS—In the early 1990s, CMS (then HCFA) contracted with Health Economics Research, Inc. to evaluate sources of commercial office rents versus the HUD FMRs for the PE GPCI (Dayhoff and Pope, 1994). One of the data sources analyzed was a file from the USPS obtained by CMS. We now briefly discuss the findings of that study concerning the USPS data.

One conclusion of Dayhoff and Pope (1994) was that rental indexes constructed from postal rents are subject to a significant amount of random error. For example, with a sample of 100 postal rents, greater than the number of postal buildings contained in virtually all counties and in 9 states, the 95 percent confidence interval[30] for a postal rent was plus or minus 13 percent. Even with a sample of 500 postal rents, more than in all but 9 states, the 95 percent confidence interval for rent is plus or minus 3 percent. Dayhoff and Pope (1994) concluded that a sample size of several hundred buildings per payment locality was necessary to measure a rental index with any precision. A rental index based on the HUD FMRs is also subject to random sampling error, but it is much smaller than with the postal rents. For example, the 95 percent confidence interval for the FMR in an area (county) with population of about 100,000 was plus or minus 2 percent (Dayhoff and Pope, 1994).

Dayhoff and Pope (1994) found that the differences between relative HUD FMRs and relative postal rents across five urban-rural population size categories were quite small. In particular, relative apartment and postal rents were quite similar in non-metropolitan areas. However, postal rents were 10 percent higher than HUD FMRs in the Northeast, but 13 percent lower in the Midwest. Post office and FMRs were highly correlated across states, but relative postal rents had a greater range. Dayhoff and Pope (1994) attributed this to greater random variation in the postal rents given that 9 states contained fewer than 100 post office buildings in the sample, and another 7 contained between 100 and 200 buildings. A similar situation existed

[30] There is a 5 percent chance that the true rent lies outside the 95 percent confidence interval.

for large metropolitan areas (population of 1 million or more), where the correlation was high, but the postal rents exhibited a greater range and index values could be quite different for particular areas. In particular, the postal rents were relatively much higher in New York City, as were other measures of commercial rents. Overall, Dayhoff and Pope (1994) concluded that the postal rental data were inferior to the HUD FMRs for the PE GPCI, largely because of the much smaller sample size of the postal rents.

Quality-Adjusted Postal Rental Index—Supported by the USPS, Dr. Anthony Yezer of George Washington University has been working with the USPS postal rental database. Dr. Yezer was engaged by the USPS to provide analysis for setting appropriate fees for the post office box service, i.e., P.O. boxes. The postal rental database was suggested as a possible alternative to FMRs in a recent GAO report (GAO, 2005). Because the USPS facility database contains variables measuring total rent, lease terms, location, and facility attributes, it has all the information necessary to construct a constant-quality office rental index of the type required by the PE GPCI rental index. One additional advantage of the facility database is that USPS standards for facilities tend to ensure a minimum level of quality for each observation, and the normal variation in rent based on tenant characteristics, both creditworthiness and effect on other building tenants, is held constant. Finally most lease terms are uniform because USPS lease criteria have been relatively standardized compared with the general population of commercial leases.

We engaged Dr. Yezer as a consultant to this project to evaluate his methodology and data. Dr. Yezer discussed two methodologies for creating a constant quality office price index based on post office rental data. The first approach to estimating a price index involves two steps. The first step is to estimate the statistical relation between rent and facility characteristics. The methodology involves estimation of separate rent regressions for large MSAs, for individual state non-MSA areas, and for small groups of MSAs aggregated based either on proximity or size. Using these data, Dr. Yezer estimates statistical models in which the dependent variable is rent per square foot and the independent variables include location, lease characteristics (particularly date endorsed and length), size, characteristics of the facility, and census tract attributes. The result is a system of equations that can be used to predict rent per square foot for any facility located within the United States. Once the full set of rent equations are estimated, the second step is to compute a constant quality rental index by estimating the rent of a standard office unit in each area. This requires specification of a standard office. Using the "standard office" as a basis, the rent equations can be used to estimate standardized rents in counties throughout the country. However, this approach is not appropriate for the GPCI, because it is facility-specific, while for the PE GPCI office rental index the goal is to produce a constant-quality index for an area.

The second method for constructing a constant–quality office price index involves a one-step approach in which a single statistical equation is estimated for the entire country and dummy variables are inserted to differentiate location by county or county group. The estimated coefficients of these dummy variables can then be transformed directly into a measure of the percentage difference between rental prices for a constant–quality office in different locations across the country. This approach has the advantage of simplicity and avoids the need to specify a standardized office facility across the country. Furthermore it is a routine and well-accepted

method for determining inter-area price indexes and indeed has often been applied to the determination of inter-area wage differentials in the academic literature[31].

The estimating equation related the natural logarithm of actual rent to the natural logarithm of interior space leased, variables indicating availability of parking, facility setting, lease length, date of lease endorsement and finally county or county group in which the facility is located. The estimates reported here are constructed using a parsimonious specification. The sample is restricted to leases for facilities with 500 to 6,000 square feet of interior space, because this size range includes most medical offices. The results of the regression equation is presented below as Table 5-1.

Table 5-1
Regression Estimates Used to Construct Constant Quality Office Rent Index
Dependent Variable: Natural Logarithm of Annualized Postal Building Rent

Number of observations	1,327	
R^2	0.6350	
Adjusted R^2	0.6260	
Square Root of Mean Square Error	0.5474	
Variable	**Coefficient**	**t-ratio**
Constant	2.9427	6.21
Size of Lease	0.8325	32.52
No Parking (Dummy)	-0.0508	-1.45
Limited Parking (Dummy)	-0.0889	-2.05
Lease Length (Years)	0.0396	5.84
Location in Enclosed Mall (Dummy)	0.6325	4.86
Location in a Store Front (Dummy)	0.1800	3.83
Location in a Shopping Center (Dummy)	0.3420	6.15
Located in a Business Park (Dummy)	0.1943	1.39
Located in General Retail Setting (Dummy)	0.4549	3.91
Located in Other Retail Setting (Dummy)	0.1408	3.01
Date of Lease Endorsement	-0.0108	-1.01
Dummy Variables for Individual MSAs		
Baltimore	0.5135	4.71
Atlanta	0.7354	2.25
Boston	0.8782	9.12

(continued)

31 See Olsen, Davis, and Carrillo (2005).

Table 5-1 (continued)
Regression Estimates Used to Construct Constant Quality Office Rent Index
Dependent Variable: Natural Logarithm of Annualized Postal Building Rent

Variable	Coefficient	t-ratio
New York City	1.0766	10.83
Syracuse	0.4722	4.5
Rochester	0.5094	5.52
Philly	0.6803	7.42
Pittsburgh	0.3045	3.45
DC	1.0593	9.97
Richmond	0.2589	1.83
Raleigh	0.1816	1.2
Charlotte	0.2351	1.9
Orlando	0.3055	2.21
Miami	0.6590	2.96
Chicago	0.4957	5.22
New Orleans	0.4217	3.47
Tulsa	0.0731	0.56
Dallas	0.3783	2.84
LA	1.0434	9.59
San Diego	0.5908	3.94
San Jose	1.0028	5.24

SOURCE: Analysis by Dr. Anthony Yezer, George Washington University. See Appendix E.

Dr. Yezer's paper describing his data, methods, and results are provided in Appendix E. His Table 5-2, reproduced below, contains empirical comparisons of alternative rental indexes for 22 large cities. He compares his postal rental index with a HUD FMR index and with a quality-adjusted apartment rental index based on the American Housing Survey (AHS). The postal and FMR indexes appear to be highly correlated, but nevertheless produce significantly different index values for several cities (e.g., Boston, San Diego), even in this small sample. Dr. Yezer did not yet provide us with any data on rural areas, so we were not able to evaluate the impact of his index on urban-rural differences. The postal index values appear reasonable, but it is not clear that they are a more accurate measure of relative physician office rents than the FMR index.

Table 5-2
Comparison of Quality-Adjusted Postal and Housing Rent Indexes Across Cities
Washington DC = 100

MSA	Postal Office Rent Index	Constant Quality American Housing Survey Rent Index	HUD Fair Market Rent
Atlanta	75	92	70
Baltimore	64	91	76
Boston	86	124	112
Chicago	64	97	76
Charlotte	55	77	57
Dallas	60	86	65
Kansas City	48	74	58
Los Angeles	99	104	95
Miami	71	95	81
New Orleans	61	71	60
New York City	102	124	91
Orlando	57	86	66
Philadelphia	72	94	80
Pittsburgh	57	77	61
Raleigh	53	79	69
Richmond	56	81	64
Rochester	64	88	58
San Diego	68	100	100
San Jose	94	143	110
Syracuse	63	82	52
Tulsa	51	75	55
Washington DC	100	100	100

SOURCE: Analysis by Dr. Anthony Yezer, George Washington University. See Appendix D.

Evaluation of the Postal Rental Data and Quality-Adjusted Index—The postal lease data have appeal as a source for the PE GPCI office rental index. As commercial rent data, they may have greater face validity to physicians than the FMR apartment rents.

Nevertheless, we have reservations about the postal data. As described above, the sample sizes of postal buildings are much smaller than the number of apartments on which the FMRs are based. Although a postal rental index is arguably subject to less systematic error in measuring physician office rents than a residential rent index based on the FMRs, it is subject to greater random error. The greater random error of a postal rental index may degrade its accuracy to the point where it is less accurate overall than the FMR residential rent index.

Professor Yezer's quality-adjusted rental index also has conceptual appeal. Index values he provided us for a sample of 22 cities are not implausible. However, we are not able to fully evaluate his approach because of the limited number of areas for which he has provided us with rental index values. For example, he did not yet provide us with any data on non-metropolitan areas, so we are unable to evaluate his index's measurement of urban-rural differences.

We have some concerns about Dr. Yezer's approach in a public policy context. His data and methods are essentially proprietary. It is not clear to what extent CMS would be able to fully document his methods or establish an ongoing relationship with him to obtain rental index values for the PE GPCI on a timely and consistent basis. An alternative approach is for CMS to obtain the postal data itself and construct and evaluate its own postal rental index.

5.2 Supplies, Equipment, and Miscellaneous Expenses

The component of the PE GPCI that reflects expenses for supplies, equipment, and miscellaneous inputs accounts for slightly less than one-third of the overall index. Based on conversations with medical equipment and supply firms, researchers concluded that no credible data existed that could measure variation in these input prices (Welch et al., 1989). Moreover, it appeared that the basic prices for these inputs did not vary across geographic areas. Miscellaneous inputs were so heterogeneous that there did not appear to be any price data that could measure geographic differences in this category of expenses. Therefore, the PE GPCI assumes that input processes related to supplies, equipment, and miscellaneous expenses do not vary across physician payment localities.

This assumption was discussed at both the Iowa and Maine meetings. Physicians from these rural areas asserted that certain goods and services that they need to purchase to run their practices were more expensive than in urban areas. One issue that was raised related to equipment repairs. Maine physicians believed that they had to pay a surcharge to get service technicians to travel from the Boston area to Maine. No documentation of this claim could be provided at the meeting and none has been provided subsequently. After extensive discussion in both of the localities that we visited, the physicians agreed that the assumption of uniformity across areas in the prices of these inputs seemed reasonable.

One possible explanation for the perception that equipment costs are higher in rural areas is that rural physicians may not have a high enough volume of patients to recover the essentially fixed costs of medical equipment. However, this issue is not directly related to the PE GPCI and how it is constructed. Instead, it is one of the additional issues raised by rural physicians that may create legitimate burdens on their practices but are not easily addressed within the context of the RBRVS-based fee schedule. Other issues of this type are discussed in Section 6.2.

5.3 Conclusion

The objection to “proxy” data in the GPCI has been raised most strongly with regard to the PE GPCI's measure of relative office rents. Unfortunately, little data measuring commercial rents by area, especially in rural areas, are available. RTI and UI enlisted the assistance of Dr. Anthony Yezer of George Washington University to re-evaluate post office rental data, the best available source of commercial rental data. Dr. Yezer has been working with the postal data for the United States Postal Service, and agreed to produce a "quality-adjusted" rental index from the postal building rental data. Preliminary results available from Dr. Yezer at the time this report was prepared showed that credible rental index values for a limited set of metropolitan areas could be produced using his data and methods. For many of these areas, postal rental index values are similar to index values derived from the HUD apartment FMRs, but postal and FMR relative rents differed substantially for a few of these areas. Given the interest in a commercial rental index, it may be reasonable for CMS to further study the postal rental data.

Although participants in the Iowa and Maine meetings raised some issues about supplies, equipment, and miscellaneous practice inputs, in the end, they did not seem uncomfortable with continuing the existing policy of no geographic adjustment for these input prices. No credible data appears to exist to measure geographic variation in these input prices. Given the transportability of supplies and equipment inputs, it is unlikely that significant geographic price differentials could be maintained.

SECTION 6
DISCUSSION

In Section 6.1 of this Chapter, we summarize our conclusions about the alternative data sources for the PE GPCI reviewed earlier and present our recommendations to CMS on potentially new data sources for the PE GPCI. These issues concern the accurate measurement by geographic area of relative practice expenses for a defined set of expense components, such as employee wages and office rents.

However, many of the comments we received at the Iowa and Maine meetings were not about the measurement of relative costs of similar practice expense components in rural and urban areas, but about different types of expenses or challenges incurred in rural areas. A full analysis of these issues is beyond the scope of this report. But in Section 6.2, we summarize the major comments of this type communicated at the meetings so that CMS may evaluate whether further analysis of any of these issues is warranted.

6.1 Conclusions on Alternative Data Sources

We briefly discuss conclusions from our analysis of MGMA data on practice expenses shares, then we present conclusions and recommendations on employee wages, office rents, and supplies, equipment, and miscellaneous.

6.1.1 Practice Expense Shares

We examined MGMA data on practice expense shares. We recognize that these data need to be used cautiously. The sample sizes are small, we are unable to control for specialty differences across communities and the MGMA data contain no information on small, non-group practices. However, to the extent that these data are viewed favorably within the physician community – and they appear to be based on the input we received in Iowa and Maine – the MGMA data are worthy of consideration as a potential source for practice cost shares.

CMS has historically used American Medical Association (AMA) physician survey data to calculate practice cost shares for the GPCI. It is difficult to make a rigorous comparison between the AMA and MGMA data on cost shares. However, the data presented here suggest that PE GPCI weights derived from the MGMA data on the components of practice costs would be quite different that those used in the current index, despite the fact that the MGMA overall cost shares are only slightly higher than the AMA shares. This is important given that the AMA data will not likely be available in the future. Perhaps the biggest hurdle to get over before the MGMA data could be used as a source of information on cost shares in the PE GPCI is that it has no information on practices with between one and three physicians.

6.1.2 Non-Physician Employee Wages

In Chapter 4, we discussed the advantages and disadvantages of using the Census-ACS, BLS-OES or CMS-HWI data for the non-physician employee wage component of the PE GPCI. Because the Decennial Census long form is being discontinued (replaced by the ACS), one of these sources will have to be used as the future data source for the PE GPCI wage index. The GAO has suggested that CMS prepare for a transition to the Census ACS for earnings and wage data (GAO, 2005).

Table 6-1 summarizes and compares the key characteristics of the Census ACS, the BLS-OES, and the Hospital Wage Index. The sample and sample sizes of the ACS, BLS and HWI differ substantially. The HWI collects data only for Medicare participating hospitals. The BLS-OES is also an employer survey, but collects data from employers of all sizes and industries, not just hospitals. As a result, the BLS-OES, which includes small employers, may be more representative of the typical physician practice that has only a few employees. It also provides a broader measurement of the healthcare labor market than just hospitals. The ACS is a household survey, and includes employees in all industries and in firms of all sizes; thus it is similarly more broadly based than the HWI.

Another difference between the three data sources is the wage information collected. The BLS-OES collects only straight time, gross pay wages. The BLS-OES does not collect information on premium pay, fringe benefits, overtime, or shift differentials. Similarly, the ACS collects only employment income and not fringe benefits. In contrast, the HWI includes other wage-related costs and fringe benefits. Thus, the HWI provides the best measure of total labor compensation.

The BLS and HWI also differ in the length of time between data collection and when data are used in the index[32]. There is a 3- to 4-year lag between the time data reported by hospitals in their Medicare Cost Reports and when data are used in the HWI to set hospital payment rates. For example, the FY2005 HWI uses data from the 2001 Cost Report. The BLS-OES, however, incorporates data that are approximately 1 year old. In addition, the BLS-OES wage estimates are fully updated every 3 years, compared to 5 years for full updates of the ACS and 1 year for a full update of the HWI. Currently, Congress mandates that the GPCIs be updated every 3 years and that changes are phased in over a 2-year period.

For illustrative purposes, we compared the non-physician employee component of the PE GPCI to indices constructed from data used in computing the Medicare HWI, and indices constructed from BLS-OES data. The hospital wage data used for this analysis excluded the application of geographic reclassification and the rural floor. The illustrative analysis suggests that the differences among the three indices are small for most payment localities. The important issue, however, is the impact of any changes of overall payment. When the localities are aggregated up to the State level, the estimated effect on payments is usually less than 1 percent. At the locality level, the majority of changes are also less than 1 percent (Table 6-2). Overall, there are not large differences in index values whichever data source is used for calculation of the employee wage index. These results are not qualitatively different from those derived from the Decennial Census data. Rural physicians are concerned about the levels of payment in their payment localities. Use of these alternative data sources would result in increases in payments for some rural areas, but also decreases in payments in other rural areas.

[32] The ACS is too new to know what the data lag will be.

Table 6-1
Comparison of census-ACS, BLS-OES, and CMS-hospital wage data

Characteristic	Census-ACS	BLS-OES	CMS-HWI
Sponsor	Census Bureau	Bureau of Labor Statistics	CMS
Source of data	Survey of households	Survey of employers	Medicare (Hospital) Cost Reports (MCR); CMS Occupation Data Survey of Hospitals
Frequency of data updates	Data collected annually. Annual updates for areas with more than 65,000 people. 3-year rolling average for areas between 20,000 and 65,000 people. 5-year rolling average for areas less than 20,000 people.	1/3 updated every year. Survey uses a 3 year moving average. Completely updated every 3 years	MCR - annually Occupation Data Survey - once every 3 years
Data lag	Uncertain. Probably at least one year.	Approximately 1 year	3-4 years. 2005 HWI uses 2001 MCR data
Sampling Frame	U.S. households	6.5 million establishments employing 130 million full-time or part-time wage and salary workers in nonfarm industries	IPPS-eligible hospitals excluding critical access hospitals
Sample Size	Over 5 years, 15 million households with 39 million individuals.	Over 3 years, 1.2 million establishments employing approximately 90 million workers.	Each year, 3,955 hospitals employing approximately 5 million workers[1]
Wage Information Available	Median hourly earnings: employment related income divided by estimated annual hours worked	Mean hourly wages: Straight time, gross pay, exclusive of premium pay, fringe benefits, overtime and shift differentials.	Mean hourly compensation: Wages, fringe benefits, and other wage related costs
Geographic Coverage	National	National, but only state and MSA estimates published on website	National (although some counties within regions have no hospitals)

(continued)

Table 6-1 (continued)
Comparison of census-ACS, BLS-OES, and CMS-hospital wage data

Characteristic	Census-ACS	BLS-OES	CMS-HWI
Sponsor	Census Bureau	Bureau of Labor Statistics	CMS
Occupational Detail	Respondents self-report occupation. Census codes a large number of occupational categories.	Over 700 occupational categories. Workers are categorized by their employers based on descriptions provided by BLS.	MCR uses aggregated data with some revenue centers broken out. Occupation survey has 19 occupations such as RNs, LPN, and medical technicians.
Industry	All, with industry coded by Census based on respondent report of place of work.	All, with physician offices available nationally and for areas by special tabulation.	Hospitals
Method of data collection	Initial mailing, follow-up mailing, telephone follow-up and some in person enumeration. "Weighted" response rate is 97%.	Semi-annual mail survey to sample establishments . Three mailings with telephone follow-up. Response rate is 79 percent of establishments and 73 percent of employment.	MCR and occupation survey - both filled out by Medicare participating IPPS hospitals.
Data quality	Self-reported and edited by Census	Reported by establishments, edited by BLS and states, 1 to 3 percent standard error on the estimates	MCR - reported by hospitals, audited and edited by CMS Occupation survey - may contain inaccuracies because it's a new data source, but is also edited.
Cost to CMS	Low cost for special tabulation.	Free off the BLS website Low cost for special tabulations	Free off the CMS website

NOTES:
ACS is American Community Survey.
BLS is Bureau of Labor Statistics.
OES is Occupational Employment Statistics.
CMS is Centers for Medicare and Medicaid Services.
HWI is Hospital Wage Index.
MCR is Medicare (Hospital) Cost Report.
IPPS is Inpatient Prospective Payment System.
MSA is Metropolitan Statistical Area.
RN is registered nurse.
LPN is licensed practical nurse.
[1]Based on number of hospital employees estimated by the BLS-OES survey. Actual number may differ because of excluded hospitals and employee categories.

SOURCE: Census-ACS, BLS-OES, and CMS websites and conversations with Census and BLS staff.

Table 6-2
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Alaska		1.184	1.078	1.143	1.83%	1.13%
Alabama		0.835	0.864	0.862	-0.63%	-0.04%
Arkansas		0.828	0.838	0.854	-0.22%	0.36%
Arizona		0.963	0.957	0.963	0.11%	0.12%
California		1.199	1.123	1.152	1.27%	0.49%
	Ventura, CA	1.104	1.083	1.097	0.36%	0.24%
	Santa Clara, CA	1.466	1.337	1.332	1.80%	-0.07%
	San Mateo, CA	1.456	1.368	--	1.20%	--
	San Francisco, CA	1.459	1.387	--	0.97%	--
	Rest of California	1.115	1.038	--	1.38%	--
	Oakland/Berkeley, CA	1.513	1.287	1.260	3.28%	-0.39%
	Marin/Napa/Solana, CA	1.391	1.217	--	2.67%	--
	Los Angeles, CA	1.170	1.130	1.144	0.66%	0.23%
	Anaheim/Santa Ana, CA	1.154	1.148	1.133	0.10%	-0.24%
Colorado		1.020	0.979	1.043	0.79%	1.22%
Connecticut		1.168	1.218	1.171	-0.77%	-0.72%
District of Columbia		1.132	1.184	1.152	-0.82%	-0.50%
	DC and MD/VA suburbs	1.113	1.184	1.131	-1.11%	-0.84%
Delaware		1.068	1.064	1.044	0.07%	-0.35%
Florida		0.945	0.928	0.945	0.35%	0.35%
	Rest of Florida	0.917	0.904	--	0.27%	--
	Miami, FL	0.998	0.978	--	0.39%	--
	Fort Lauderdale, FL	0.997	0.961	--	0.71%	--
Georgia		0.931	0.952	0.959	-0.41%	0.13%
	Rest of Georgia	0.892	0.895	--	-0.06%	--
	Atlanta, GA	0.994	1.048	--	-0.96%	--
Hawaii/Guam		1.084	1.122	--	-0.63%	--
Iowa		0.896	0.878	0.884	0.37%	0.13%
Idaho		0.913	0.873	0.893	0.85%	0.43%
Illinois		1.008	1.032	0.979	-0.43%	-0.95%
	Suburban Chicago, IL	1.043	1.102	1.038	-1.00%	-1.09%
	Rest of Illinois	0.891	0.887	--	0.07%	--
	East St. Louis, IL	0.820	0.933	--	-2.27%	--
	Chicago, IL	1.089	1.128	1.038	-0.65%	-1.49%

(continued)

Table 6-2 (continued)
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Indiana		0.930	0.933	0.924	-0.06%	-0.18%
Kansas		0.901	0.883	0.892	0.39%	0.19%
Kentucky		0.843	0.879	0.890	-0.76%	0.23%
Louisiana		0.838	0.884	0.853	-0.97%	-0.65%
	Rest of Louisiana	0.817	0.866	--	-1.05%	--
	New Orleans, LA	0.898	0.951	0.906	-1.04%	-0.88%
Massachusetts		1.116	1.144	1.140	-0.46%	-0.07%
	Rest of Massachusetts	1.063	1.078	--	-0.26%	--
	Metropolitan Boston	1.164	1.216	1.180	-0.80%	-0.55%
Maryland		0.992	1.070	1.082	-1.36%	0.21%
	Rest of Maryland	0.943	0.936	--	0.14%	--
	Baltimore, MD and suburbs	0.984	1.067	1.047	-1.45%	-0.35%
	DC and MD/VA suburbs	1.113	1.184	1.131	-1.11%	-0.84%
Maine		0.955	0.934	0.950	0.43%	0.33%
	Southern Maine	1.005	0.974	--	0.59%	--
	Rest of Maine	0.930	0.904	--	0.54%	--
Michigan		0.991	1.023	1.016	-0.59%	-0.13%
	Rest of Michigan	0.951	0.957	--	-0.13%	--
	Detroit, MI	1.035	1.084	--	-0.85%	--
Minnesota		1.070	1.020	1.057	0.92%	0.68%
Missouri		0.884	0.884	0.929	-0.01%	0.94%
	Rest of Missouri	0.821	0.802	--	0.44%	--
	Metropolitan St. Louis, MO	0.927	0.949	0.943	-0.42%	-0.12%
	Metropolitan Kansas City, MO	0.959	0.980	0.938	-0.40%	-0.80%
Mississippi		0.792	0.856	0.851	-1.39%	-0.11%
Montana		0.893	0.814	0.832	1.82%	0.41%
North Carolina		0.929	0.946	0.959	-0.34%	0.26%
North Dakota		0.811	0.846	0.845	-0.77%	-0.02%
Nebraska		0.960	0.887	0.897	1.54%	0.21%
New Hampshire		1.024	0.981	0.999	0.81%	0.34%
New Jersey		1.117	1.186	1.117	-1.08%	-1.08%
	Rest of New Jersey	1.064	1.114	--	-0.83%	--
	Northern NJ	1.157	1.236	--	-1.20%	--
New Mexico		0.967	0.887	0.912	1.69%	0.53%

(continued)

Table 6-2 (continued)
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Nevada		1.093	1.026	1.040	1.23%	0.26%
New York		1.186	1.181	1.111	0.09%	-1.11%
	Rest of New York	0.883	0.948	--	-1.29%	--
	Queens, NY	1.337	1.222	1.218	1.76%	-0.06%
	Poughkeepsie, Northern NYC suburbs	1.051	1.040	--	0.19%	--
	NYC Suburbs, Long Island, NY	1.313	1.265	--	0.71%	--
	Manhattan, NY	1.402	1.365	1.218	0.50%	-2.01%
Ohio		0.931	0.964	0.952	-0.64%	-0.23%
Oklahoma		0.846	0.858	0.846	-0.27%	-0.26%
Oregon		1.090	0.988	1.045	1.94%	1.09%
	Rest of Oregon	1.034	0.939	--	1.90%	--
	Portland, OR	1.146	1.097	1.100	0.83%	0.05%
Pennsylvania		0.935	0.981	0.961	-0.87%	-0.38%
	Rest of Pennsylvania	0.873	0.926	--	-1.08%	--
	Metropolitan Philadelphia, PA	1.080	1.125	1.062	-0.74%	-1.05%
Rhode Island		1.099	1.032	1.063	1.21%	0.56%
South Carolina		0.916	0.919	0.920	-0.07%	0.02%
South Dakota		0.891	0.853	0.868	0.82%	0.33%
Tennessee		0.897	0.899	0.913	-0.03%	0.29%
Texas		0.927	0.918	0.948	0.17%	0.61%
	Rest of Texas	0.883	0.855	--	0.62%	--
	Houston, TX	1.006	1.031	0.984	-0.45%	-0.85%
	Galveston, TX	0.934	0.968	0.905	-0.66%	-1.22%
	Fort Worth, TX	0.952	0.970	1.017	-0.34%	0.91%
	Dallas, TX	0.998	1.045	1.017	-0.83%	-0.50%
	Brazoria, TX	0.849	0.928	0.920	-1.59%	-0.16%
	Beaumont, TX	0.856	0.883	0.849	-0.58%	-0.72%
	Austin, TX	0.963	0.973	1.004	-0.19%	0.60%
Utah		0.934	0.897	0.920	0.78%	0.48%
Virginia		0.932	0.960	0.988	-0.55%	0.56%
	Virginia locality	0.906	0.919	--	-0.26%	--
	DC and MD/VA suburbs	1.113	1.184	1.131	-1.11%	-0.84%
Vermont		0.929	0.943	0.986	-0.28%	0.85%

(continued)

Table 6-2 (continued)
Illustrative impact on payment of using alternative data sources

State	Physician Payment Locality	2005 Individual Hospital HWI data	Imputed 2006 GPCI Employee Wage Index	2003 BLS OES Wage Index	Percent Payment Impact Using Hospital Data	Percent Payment Impact Using BLS-OES Data
Washington		1.089	1.055	1.109	0.60%	0.96%
	Seattle (King County), WA	1.141	1.161	1.174	-0.33%	0.21%
	Rest of Washington	1.064	1.012	--	0.95%	--
Wisconsin		0.969	0.951	0.983	0.35%	0.63%
West Virginia		0.837	0.828	0.822	0.21%	-0.14%
Wyoming		0.912	0.832	0.867	1.79%	0.79%

NOTES:

[1] Excluding Guam, Puerto Rico, and the U.S. Virgin Islands. Weighted by physician practice expense relative value units.

[2] Alaska's PE GPCI is mandated to be 1.67. Therefore comparisons are not meaningful.

[3] BLS reports OES data by state and metropolitan area only. Thus, the OES index could not be calculated for some payment localities.

SOURCE: PE GPCI: *Federal Register,* August 5, 2004.

Hospital Wage Index: *Federal Register*, August 11, 2004 as corrected on CMS website December 22, 2004.

BLS OES data: U.S. Bureau of Labor Statistics Occupational Employment Statistics data for November 2003. Accessed at www.bls.gov.

6.1.3 Physician Office Rents

The objection to "proxy" data in the GPCI has been raised most strongly with regard to the PE GPCI's measure of relative office rents. Many physicians and other observers may not find the current PE GPCI's measure of relative residential apartment rents to have good face validity. A measure of relative commercial rents is thought to be a more appropriate measure of relative physician office rents.

Unfortunately, little data measuring commercial rents by area, especially in rural areas, are available. The database of lease costs of postal buildings maintained by the US Postal Service appears to be the best source of commercial rents available. Compared to other sources of commercial rents, the USPS data have relatively good geographic coverage, including in rural areas.

CMS evaluated the USPS data over a decade ago. The conclusion then was that the postal data should not replace the HUD FMRs in the PE GPCI, largely because small sample sizes of postal building leases created unacceptable levels of random error in index values. Also, it was noted that average urban/rural differences in the USPS and FMR data were the same. However, given the continuing concern about using residential rents in the GPCI, it may be time to reevaluate the postal data.

We began that reassessment in this report. In particular, we engaged Dr. Anthony Yezer of George Washington University to compile a rental index based on the postal data and using his methods of holding building quality constant across areas. Dr. Yezer's methods have conceptual appeal and he produced rental index values for 22 cities that are not implausible (and are highly correlated with relative FMRs, the current basis of the GPCI office rental index).

However, Dr. Yezer's preliminary results available at the time this report was prepared did not supply us with enough information to allow a full evaluation of his methods. For example, he has not yet supplied us with data on rural areas. Further, we have some concerns about the postal data. Our major concern, as noted above, is that small numbers of buildings in some areas may lead to a large amount of random error in rental estimates. Dr. Yezer's database and methods are essentially proprietary, and CMS would have to negotiate regular and timely access to his data and methods if they were to be used for the PE GPCI. In addition, these data would not resolve the concerns with using proxy data. In this case, we would be exchanging one set of proxy data for another set of proxy data.

6.1.4 Supplies, Equipment, and Miscellaneous Expenses

No credible data to measure area variation in prices of supplies, equipment, and other expenses appear to exist. Moreover, given the widespread availability of these practice inputs, and their mobility across areas, it is unlikely that major price differentials would persist. Although participants in the Iowa and Maine meetings raised some issues about these inputs, in the end, they did not seem uncomfortable with continuing the existing policy of no geographic adjustment for these input prices.

6.2 Additional Issues in Rural Physician Practice

The concern in rural areas is that the low supply of physicians relative to urban areas could result in health care access problems for rural residents. Moreover, if there were evidence that Medicare payment systems (i.e., the PE GPCI) exacerbated these problems and contributed to physician incomes being lower in rural areas, then arguments for altering the PE GPCI or other parts of the payment system could be strengthened. However, the Medicare Payment Advisory Commission examined data on access for Medicare beneficiaries in urban and rural areas and found no differences with respect to having a usual source of care or doctor, getting care, delays in care, or needing a doctor but being unable to see one (MedPAC, March 2003). In addition, a recent study by the Center for Studying Health System Change showed that median nominal physician incomes were quite comparable in urban and rural areas (Reschovsky and Staiti, 2005). Nevertheless, practicing in a rural community may be quite different than practicing in an urban community, and physicians devoted significant portions of the meeting time to issues faced by rural physician practices that were not directly related to the PE GPCI.

One issue raised by physicians is the lack of compensation for the time they are "on-call." Both rural physicians, because of the lack of other available physicians, and urban physicians, because of skills specialization, claim that they spend many hours of their time being available to provide medical services. Although physicians are technically not working, they are limited in the non-work activities they can do because they must be immediately available to work. Currently, Medicare and private health insurers do not compensate physicians for their time on-call.

Another issue mentioned by the meeting participants is the cost of travel, or "windshield time," for rural physicians. To generate enough revenue in their practices, rural physicians claim they must travel long distances to visit patients at outreach clinics or home visits. Medicare does not compensate physicians for the time that they take to travel to outreach locations to provide services. Rural physicians believe their travel time costs are consistently higher than those of urban physicians and that they should be compensated for these higher costs.

A related issue for rural physicians is their cost to provide outreach services. Rural physicians claim that their practices need to maintain outreach offices in multiple locations to generate the patient volume they need for their practices. These offices are staffed by physician assistants and other non-physician employees. Rural physicians assert that their practice expenses are higher because they are required to hire more staff and rent more office space to service the same number of patients as urban physicians whose practices are centralized in one office.

The meeting participants expressed concerns about the effectiveness of Health Professional Shortage Area payments. The purpose of HPSA payments is to encourage physicians to practice in rural areas with few physicians by increasing the Medicare reimbursement a physician receives. Rural physicians claim they cannot receive HPSA payments even though their patients live in medically underserved areas, because they claim that most rural physician practices cluster in a few areas. These areas then have too high of a concentration of physicians, and rural physicians do not qualify for HPSA payments.

Rural physicians wanted to have a more even distribution of ancillary income. Ancillary income is income derived from lab equipment, X-ray machines, and CT or MRI scanners, and more profit is generated from the equipment with higher utilization. Rural physicians contend that they have less ancillary income because they cannot generate the service volumes of high-utilization regions primarily in urban areas. One rural physician suggested that Medicare enact an adjustment to physician reimbursement based on service volume to improve the distribution of ancillary income. In addition, rural physicians believe they are also penalized by the Sustainable Growth Rate Formula for the high utilization of ancillary services in urban areas because physician reimbursement rates are reduced if Medicare physician spending exceeds set spending limits and the high utilization of ancillary services contributes to excess Medicare spending on physician reimbursement.

Rural physicians and their representatives described the difficulties they have had recruiting physicians to rural areas. A representative from an organization in Maine that recruits physicians stated that there were 168 open jobs for physicians in Maine. A physician at the meeting said it took 4 years to find a second physician to join him at his practice.

Rural meeting participants cited low Medicare physician reimbursement and the higher percentage of patients covered by Medicare and Medicaid compared to urban areas for the physician recruitment problems. Physicians receive less reimbursement from Medicare and Medicaid than they do from private insurers. With more patients having public health insurance in rural areas, physicians generate less income per patient in rural areas than in urban areas and have less incentive to establish practices in rural areas.

The impact of payment differences between urban and rural physicians on physician incomes and beneficiary access are still being debated. A recent study by the Center for Studying Health System Change found that, after accounting for the local cost of living, rural physician incomes on average provide more purchasing power than urban physician incomes (Reschovsky and Staiti, 2005). Further research found that while payment differences between Medicare and private payment are large they could not find evidence of access to care differences across urban and rural regions (Trude and Ginsburg, 2005). A recent GAO report (GAO, 2005) concluded that the GPCI does not have a large enough impact on physician payments to significantly influence physician recruitment and retention in rural areas.

Meeting participants from Maine mentioned a recent development in the structuring of rural physician practices in order to increase physician reimbursement. The participants claim that many physician practices have been converted to facility-based practices. There are two types of facility-based practices. One type of practice is where physicians sell their practice to a hospital and become hospital employees. The physicians are then eligible for facility fee payments and professional component reimbursement from both Medicare and Medicaid. These payments are higher than regular Medicare and Medicaid physician reimbursement payments. The second type of facility-based practice is a physician practice that converts to a rural health clinic (RHC) or a federally qualified health clinic (FQHC). The physician practice as a health clinic can receive cost-based reimbursement for services rendered.

Since these topics were beyond the scope of the mandate in Section 605 of the 2003 Medicare Modernization Act, they were not studied further for this report. However, CMS may consider studying these issues in more detail in the future.

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