



ACUMEN

**Report on the CY 2017 Update
of the Geographic Practice Cost Index for the
Medicare Physician Fee Schedule**

October 2016

Thomas MaCurdy
Kristy Piccinini
Matt Chou
Sonam Sherpa
Anna Kamen
Tanvir Bhuyain
Nathan Sponberg
Kerstin Baer
Kathryn Wong
Russel Haron-Feiertag
Laurie Feinberg
Joshua Rolnick

Acumen, LLC
500 Airport Blvd., Suite 365
Burlingame, CA 94010

[This page is intentionally left blank.]

EXECUTIVE SUMMARY

The Centers for Medicare and Medicaid Services (CMS) pays physicians for their services according to the Physician Fee Schedule (PFS), which specifies a set of allowable procedures and payments for each service. Each procedure is interpreted as being produced by a combination of three categories of inputs: physician/practitioner work (PW), practice expense (PE), and malpractice expense (MP). The particular blend of PW, PE, and MP inputs assessed to produce a service specifies its composition of relative value units (RVUs). A payment for a procedure depends on its assigned RVUs and the input prices assessed for each RVU component.

As mandated under Section 1848(e) of the Social Security Act, CMS must establish geographic indices as part of the Resource-Based Relative Value Scale (RBRVS) method for paying physicians. Whereas the Medicare hospital wage index adjusts hospital, home health agency, skilled nursing facility, and other provider payments for regional variation in the cost of labor, the geographic practice cost indices (GPCIs) account for geographic variation in the price of the PW, PE, and MP classes of inputs. CMS first implemented the GPCIs as part of the Medicare PFS in 1992 and requires the GPCIs to be updated at least every three years. To meet the requirement, this report outlines a number of proposed changes to the data sources used and methodology applied to calculate GPCIs for the CY 2017 Update (i.e., the Eighth Update).

After evaluating both the current data and methods CMS uses to calculate the GPCIs, Acumen recommends that CMS implement six modifications to the GPCI framework for the Eighth GPCI Update. These modifications include updating:

- (1) The Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) wage data used in the calculation of the PW GPCI and PE GPCI;
- (2) The American Community Survey (ACS) residential rent data used in the calculation of the PE GPCI;
- (3) The malpractice premium data and methodology used to account for missing data in the calculation of the MP GPCI;
- (4) The methodology used to calculate GPCIs in the U.S. Territories;
- (5) The methodology used to calculate California's GPCIs in response to Section 220(h) of the Protecting Access to Medicare Act (PAMA) mandated California locality structure update;
- (6) The RVUs used in the calculation of the PW GPCI, PE GPCI, and MP GPCI.

The remainder of the Executive Summary provides additional information about the GPCIs and highlights this report's findings for each of the six proposed modifications. The first section briefly reviews how Medicare uses GPCIs within the PFS. The second, third, and fourth sections discuss each of the modifications proposed above in more detail. Finally, the fifth

section concludes with key findings from the empirical analysis of the impact of the proposed changes.

How GPCIs Affect Physician Payments

GPCIs measure geographic differences in input prices. Paralleling the RVU structure, GPCIs are split into three parts: PW, PE, and MP. Each of these three GPCIs adjusts its corresponding RVU component. In essence, GPCIs increase the price associated with an RVU in high cost regions and decrease the price associated with an RVU in low-cost regions. GPCIs are budget neutral and do not affect aggregate payment levels; rather, they reallocate payment rates by locality to reflect regional variation in relative input prices. The three GPCIs are calculated at the Medicare locality level, which are defined by state boundaries (e.g., Wisconsin), metropolitan statistical areas (MSAs) (e.g., Metropolitan St. Louis, MO), portions of an MSA (e.g., Manhattan), or rest-of-state area which exclude metropolitan areas (e.g., Rest of Missouri).

Using the RVUs, GPCIs, and a conversion factor (CF), one can calculate the PFS payment for any service in any locality. The CF translates the sum of the GPCI-adjusted RVUs from RVUs into dollars. Equation (1) below demonstrates how the PW, PE, and MP GPCIs combine with the three RVUs and the CF to establish a Medicare physician payment for any service *K* in locality *L*:

$$(1) \text{ Payment}_{K,L} = \left\{ \left[GPCI_{PW,L} \times RVU_{PW,K} \right] + \left[GPCI_{PE,L} \times RVU_{PE,K} \right] + \left[GPCI_{MP,L} \times RVU_{MP,K} \right] \right\} \times CF$$

CMS currently calculates GPCIs using six component indices. Whereas the PW and MP GPCIs are based on a single component index, the PE GPCI is comprised of four component indices (i.e., the employee wage; purchased services; office rent; and equipment, supplies and other indices). The PE GPCI is calculated as a weighted average of the four PE GPCI component indices, where the weight assigned to each PE GPCI component index equals each input’s average share of physician practice expenses nationally. Table (i) below provides additional information on each component index.

Table (i): Breakdown of GPCIs into Current Component Indices

GPCI	Component Index	Measures Geographic Differences in:
Physician Work	Single Component	Physician wages
Practice Expense	<i>Employee Wage</i>	Wages of clinical and administrative office staff
	<i>Purchased Services</i>	Cost of contracted services (e.g., accounting, legal)
	<i>Office Rent</i>	Physician cost to rent office space
	<i>Equipment, Supplies, and Other</i>	Practice expenses for inputs such as chemicals and rubber, telephone use and postage
Malpractice Expense	Single Component	Cost of professional liability insurance

Although GPCIs affect payments for each procedure depending on the relative amounts of PW, PE, and MP RVUs, one can summarize the combined impact of the three GPCI components on a locality’s physician reimbursement levels using the Geographic Adjustment Factor (GAF). The GAF is a weighted sum of the three GPCIs for each locality, where the cost share weights are determined by the MEI base year weights. These weights determine the relative contribution of each GPCI. Using the MEI base year weights under current regulation, one can calculate the GAF for a given locality L as follows in equation (2):

$$(2) \text{ GAF}_L = (GPCI_{PW,L} \times 0.50866) + (GPCI_{PE,L} \times 0.44839) + (GPCI_{MP,L} \times 0.04295).$$

Calculating the GPCIs with More Updated Data

Modifications (1), (2), (3), and (6) proposed in this report update the data sources currently used to calculate the GPCIs with more recent data. These updates include: (i) replacing the 2009-2011 BLS OES wage data with the more recent 2011-2014 BLS OES wage data; (ii) replacing the 2008-2010 ACS residential rent data with the more recent 2009-2013 ACS data; (iii) replacing the 2011-2012 malpractice premiums with 2014-2015 malpractice premiums; and (iv) replacing the 2011 RVUs currently used as weights in the PW GPCI, PE GPCI, and MP GPCI calculations with more recent 2014 RVUs.

Incorporating these four modifications proposed above will update nearly all the data sources used to calculate the GPCIs, apart from the MEI cost share weights and CMS labor related classifications. Table (ii) below summarizes the proposed data sources for the CY 2017 update and compares them to the current GPCI data sources. With the exception of updating the malpractice premium data with 2014-2015 premiums, which has a relatively large, but not unprecedented impact on localities’ MP GPCIs, these data updates yield only minor impacts on the GPCIs and GAFs.

Table (ii): Overview of Updated Data Sources for the CY 2017 Update

GPCI Component Index	Current Regulation	CY 2017 Update
Physician Work GPCI	2009-2011 BLS Occupational Employment Statistics	2011-2014 BLS Occupational Employment Statistics
Practice Expense GPCI		
Employee Wage	2009-2011 BLS Occupational Employment Statistics	2011-2014 BLS Occupational Employment Statistics
Purchased Services	2009-2011 BLS Occupational Employment Statistics	2011-2014 BLS Occupational Employment Statistics
	CMS Labor-Related Classification	CMS Labor-Related Classification
Office Rent	2008-2010 American Community Survey	2009-2013 American Community Survey

Equipment, Supplies, and Other	1.00 for All Counties	1.00 for All Counties
Malpractice GPCI	2011-2012 Malpractice Premiums	2014-2015 Malpractice Premiums
Cost Share Weights	Reclassification of 2006 MEI Weights	Reclassification of 2006 MEI Weights
County RVU Weights	2011 RVUs	2014 RVUs

Modifying the GPCI Methodology for U.S. Territories

The fourth modification proposed in this report modifies the methodology used to calculate GPCIs in the U.S. territories. Specifically, the Puerto Rico locality GPCI methodology is modified to align its treatment with the calculation of the GPCIs for the nearby Virgin Islands. The current methodology for calculating locality-level PW GPCIs and PE GPCIs relies on the acquisition of county-level BLS OES and ACS data, which are not represented for any territory other than Puerto Rico. Consequently, Puerto Rico is the only territory that uses its own data to calculate its GPCIs, while the Virgin Islands are assigned the national average of 1.0 and the Pacific Islands are assigned Hawaii’s values. This current methodology greatly disadvantages Puerto Rico with relation to its neighbors, as Puerto Rico possesses the lowest GAF of any Medicare locality including territories. As requested by CMS, assigning Puerto Rico the average GPCI value of 1.0 for each index as is done for the Virgin Islands ensures greater consistency in the calculation of the territories’ GPCIs and increases Puerto Rico’s GPCIs to reflect the levels of other territories without any significant decreases to other localities.

Updating the California GPCI Methodology to Meet PAMA Requirements

The fifth modification proposed in this report is responsive to Section 220(h) of the Protecting Access to Medicare Act (PAMA), which modifies the Medicare localities in California to an MSA-based structure and institutes a number of additional legislative provisions in the calculation of California’s GPCIs, including hold harmless and blending provisions. The resulting modifications to California’s locality structure increases its number of localities from 9 to 27, and increases the overall number of Medicare localities from 89 to 107. To support CMS in meeting these new provisions, Acumen proposes a modified methodology for calculating California’s GPCIs that reconciles the locality update and legislative requirements with the current GPCI methodology. The impact of implementing the new locality definition and associated legislative provisions generally increases the GPCIs and GAFs in California and has no effect on localities outside of California.

Summary of Predicted Impacts of All GPCI Updates on Locality GAFs

The six modifications to the GPCI framework result in moderate changes in locality GAF values. To enable direct comparisons between geographic regions in light of the PAMA mandated changes to the definition of California’s localities, results are segmented by Medicare localities outside of California and counties within California. Table (iii) below shows that the

average locality outside of California experiences a change in its GAF value of 0.9 percentage points. Further, 76 percent of localities outside of California experience a change in their GAF value of less than one percentage point. Table (iv) illustrates that in California, changes to the GAFs are slightly larger, with the average county experiencing a change of 1.7 percentage points. Though only 10 percent of counties experience a change of less than one percentage point, 97 percent of counties experience a change of less than 5 percentage points. These impacts reflect budget neutralization and the legislative adjustment requiring the PW GPCI to represent one-quarter of the relative cost differences compared to the national average (Section 1848(e)(1)(A)(iii) of the Social Security Act). However, they do not reflect final adjustments to GPCIs for statutorily mandated floors.

Table (iii): Non-California Combined Impact Analysis, All GPCI Updates (GAF)

GAF Difference	# of Localities	% of Localities	Percentile	GAF
All	80	100.00	Abs. Mean	0.009
> 0.10	1	1.25	Mean	0.004
0.05 to 0.10	0	0.00	Min	-0.020
0.01 to 0.05	13	16.25	P10	-0.009
0.00 to 0.01	32	40.00	P25	-0.004
-0.01 to 0.00	29	36.25	P50 (Median)	0.001
-0.05 to -0.01	5	6.25	P75	0.006
-0.10 to -0.05	0	0.00	P90	0.014
< -0.10	0	0.00	Max	0.209

Table (iv): California County Combined Impact Analysis, All GPCI Updates (GAF)

GAF Difference	# of Counties	% of Counties	Percentile	GAF
All	58	100.00	Abs. Mean	0.017
> 0.10	1	1.72	Mean	0.000
0.05 to 0.10	1	1.72	Min	-0.032
0.01 to 0.05	11	18.97	P10	-0.012
0.00 to 0.01	3	5.17	P25	-0.011
-0.01 to 0.00	3	5.17	P50 (Median)	-0.011
-0.05 to -0.01	39	67.24	P75	0.005
-0.10 to -0.05	0	0.00	P90	0.035
< -0.10	0	0.00	Max	0.146

[This page is intentionally left blank.]

TABLE OF CONTENTS

Executive Summary	i
1 Introduction.....	1
2 Brief Overview of the GPCI Methodology	4
2.1 How GPCIs Affect Physician Payments.....	4
2.2 GPCI Component Indices	5
2.3 Current Policy for Calculating GPCIs	7
2.3.1 PW GPCI Methodology.....	7
2.3.2 PE GPCI Methodology	9
2.3.3 MP GPCI Methodology	11
2.4 Legislative Adjustments to GPCI Calculations	13
3 Calculating the GPCI with Most Recent Data	14
3.1 BLS OES Wage Data.....	15
3.1.1 PW GPCI Impacts.....	16
3.1.2 PE GPCI Employee Wage Index Impacts	17
3.1.3 PE GPCI Purchased Services Index Impacts.....	19
3.2 ACS Residential Rent Data	20
3.3 Malpractice Premium Data	22
3.4 MEI Cost Share Weights	23
3.5 CMS Labor-Related Classification.....	23
4 Updating the MP GPCI.....	24
4.1 Malpractice Premium Data Collection	24
4.1.1 Step 1: Defining a Standard for Malpractice Policies.....	24
4.1.2 Step 2: Identifying the Primary Medical Malpractice Underwriters	25
4.1.3 Step 3: Collecting Malpractice Premium Data	27
4.1.4 Step 4: Collecting Patient Compensation Fund Surcharges	27
4.2 Constructing the Malpractice Premium Data Set	29
4.3 Adjustments for Missing Data	30
4.3.1 Case 1: Premium Data Missing in Base Year or Became Effective Mid-Year ..	31
4.3.2 Case 2: Missing Premium Data for a Specialty	31
4.3.3 Case 3: No Premium Data Available from Rate Filings.....	32
4.4 Impact of MP GPCI Update	32
5 Updating Methods for Calculating the Territories' GPCIs.....	34
5.1 Current Data and Methodology Used for Calculating GPCIs for the Territories	34
5.2 Proposed Approach for Applying a Consistent GPCI to the Virgin Islands and Puerto Rico Localities	36
6 California Locality Update.....	38
6.1 Requirements of the PAMA Relating to California Localities.....	38
6.2 Methodological Approach for Meeting the PAMA Requirements.....	40
6.2.1 Step 1: Calculate Raw GPCIs Under the New and Old Locality Structure.....	41
6.2.2 Step 2: Identify GPCI Counties Subject to Hold-Harmless and Blending	41
6.2.3 Step 3: Impose Hold-Harmless, Blending, and Budget Neutrality on Raw New GPCI Values	41
6.3 California Locality Update Impacts.....	42
7 Calculating the GPCIs with the Most Recent RVU Data.....	43
8 Summary of Findings: Impact of Incorporating all Updates	45

8.1	Overall PW GPCI Impacts.....	45
8.2	Overall PE GPCI Impacts.....	46
8.3	Overall MP GPCI Impacts.....	47
8.4	Overall GAF Impacts.....	48
8.5	CY 2017 (Eighth) Update GAF and GPCI Values by Locality.....	47
8.6	Transitional CY 2017-2019 GPCIs and GAFs, by Locality.....	51
	References.....	60
	Appendix A : PW GPCI Occupation List.....	51

LIST OF TABLES AND FIGURES

Table 1-1:	Breakdown of Proposed Modifications Integrated into Impact Analyses.....	2
Table 2-1:	Breakdown of GPCIs into Current Component Indices.....	6
Table 2-2:	2006-Based MEI Cost Share Weights for CY 2017 GPCIs.....	7
Table 2-3:	Eighth Update National Wage Bill Shares used for CY 2017.....	8
Table 2-4:	Legislative Adjustments to GPCI Calculations.....	13
Table 3-1:	Overview of Data Sources for the CY 2017 GPCI Update.....	14
Table 3-2:	Impact Analysis, Using Updated BLS OES Wage Data (PW GPCI).....	17
Table 3-3:	Impact Analysis, Using Updated BLS OES Wage Data (GAF).....	17
Table 3-4:	Impact Analysis, Using Updated BLS OES Wage Data (Employee Wage Index).....	18
Table 3-5:	Impact Analysis, Using Updated BLS OES Wage Data (PE GPCI).....	18
Table 3-6:	Impact Analysis, Using Updated BLS OES Wage Data (GAF).....	19
Table 3-7:	Impact Analysis, Updated BLS OES Wage Data (Purchased Services Index).....	19
Table 3-8:	Impact Analysis, Updated BLS OES Wage Data (PE GPCI).....	20
Table 3-9:	Impact Analysis, Updated BLS OES Wage Data (GAF).....	20
Table 3-10:	Impact Analysis, Using Updated ACS Residential Rent Data (Office Rent Index).....	21
Table 3-11:	Impact Analysis, Using Updated ACS Residential Rent Data (PE GPCI).....	22
Table 3-12:	Impact Analysis, Using Updated ACS Residential Rent Data (GAF).....	22
Table 4-1:	Market Share Data Collected by State.....	26
Table 4-2:	Patient Compensation Funds.....	29
Table 4-3:	Malpractice Insurance Specialties and Surgery Classifications.....	29
Table 4-4:	Treatment of U.S. Territories without Rate Filings.....	32
Table 4-5:	Impact Analysis, Using Updated Malpractice Data (MP GPCI).....	33
Table 4-6:	Impact Analysis, Using Updated Malpractice Data (GAF).....	33
Table 5-1:	Impact Analysis for Assigning 1.0 to Puerto Rico’s GPCIs.....	36
Table 5-2:	Distribution of Impacts for non-Puerto Rico Localities of Assigning 1.0 to Puerto Rico’s GPCIs.....	37
Table 6-1:	Previous GPCI Localities in California.....	39
Table 6-2:	New GPCI Localities in California.....	39
Table 6-3:	Transition Area.....	40
Table 6-4:	Impact Analysis, California Locality Updates on the GPCIs of California Counties.....	43
Table 6-5:	Distribution of Impacts of California Locality Updates on the GPCIs of California Counties.....	43
Table 7-1:	Non-California Locality Impact Analysis, Using Updated RVU Data (GAF).....	44
Table 7-2:	Impact Analysis of California Counties, Using Updated RVU Data (GAF).....	44

Table 8-1: Non-California Locality Impact Analysis, Using Updated BLS OES Wage Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico GPCIs (PW GPCI)	46
Table 8-2: California County Impact Analysis, Using Updated BLS OES Wage Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico GPCIs (PW GPCI)	46
Table 8-3: Non-California Locality Impact Analysis, Using Updated BLS OES Wage Data, Updated ACS Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (PE GPCI)	46
Table 8-4: California County Impact Analysis, Using Updated BLS OES Wage Data, Updated ACS Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (PE GPCI).....	46
Table 8-5: Non-California Locality Impact Analysis, Using Updated MP Premium Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (MP GPCI).....	47
Table 8-6: California County Impact Analysis, Using Updated MP Premium Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (MP GPCI).....	48
Table 8-7: Non-California Locality Combined Impact Analysis, All GPCI Updates (GAF)	48
Table 8-8: California County Combined Impact Analysis, All GPCI Updates (GAF)	47
Table 8-9: Non-California Eighth Update GAF and GPCI Values, by Locality	47
Table 8-10: California Eighth Update GAF and GPCI Values, by County	49
Table 8-11: Non-California CY 2017-2019 GPCI Values	51
Table 8-12: California CY 2017-2019 GPCI Values.....	55
Table 8-13: Non-California CY 2017-2019 GAF Values	57
Table 8-14: California CY 2017-2019 GAF Values.....	59

1 INTRODUCTION

The Centers for Medicare and Medicaid Services (CMS) pay physicians for their services according to the Physician Fee Schedule (PFS), which specifies a set of allowable procedures and payments for each service. Each procedure is interpreted as being produced by a combination of three categories of inputs: physician/practitioner work (PW), practice expense (PE), and malpractice expense (MP). The particular blend of PW, PE, and MP inputs assessed to produce a service specifies its composition of relative value units (RVUs). A payment for a procedure depends on its assigned RVUs and the input costs assessed for each RVU component.

As mandated under Section 1848(e) of the Social Security Act, CMS must establish geographic indices as part of the Resource-Based Relative Value Scale (RBRVS) method for paying physicians. Whereas the Medicare hospital wage index adjusts hospital, home health agency, skilled nursing facility, and other provider payments for regional variation in the cost of labor, the geographic practice cost indices (GPCIs) account for geographic variation in the price of the PW, PE, and MP classes of inputs. In 1992, CMS—then known as the Health Care Financing Administration (HCFA)—first implemented the GPCIs as part of the Medicare PFS. CMS requires the GPCIs to be updated at least every three years. To meet this requirement, this report outlines a number of proposed changes to the data sources used and methodology applied to calculate locality GPCIs for the CY 2017 Update (i.e., the Eighth Update).¹

Specifically, this report describes six changes to the GPCI framework for the Eighth Update. These changes include four proposals that update the GPCIs with more current data: (i) updating the Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) wage data used in the calculation of the PW GPCI and PE GPCI; (ii) updating the American Community Survey (ACS) residential rent data used in the calculation of the PE GPCI; (iii) updating the malpractice premium data used in the calculation of the MP GPCI, and (iv) updating the RVUs used in the calculation of the PW GPCI, PE GPCI, and MP GPCI. An additional proposal modifies the data and methodology used to calculate the GPCIs of Puerto Rico to treat it consistently with other territories. Finally, an additional proposal modifies the methodology used to calculate the GPCIs in California to meet the new requirements of PAMA pertaining to the updated MSA-based California locality structure, hold harmless and blending provisions.

The remainder of this report describes these changes in detail, and calculates the impact of the changes on GPCI and GAF values on each Medicare locality. However, there are several final adjustments that are required after completing the core GPCI calculations. These adjustments include: final budget neutralization, a permanent 1.5 floor for the PW GPCI in

¹ The latest GPCI update was the Seventh Update as part of the CY 2014 PFS.

Alaska; and a permanent 1.0 floor for the practice expense GPCI for frontier states.² CMS also transitions from the current GPCIs to the updated GPCIs over a two-year period. Sections 3 and Section 4 of this report detail how the proposed modifications affect the calculations of the GPCIs *before all final adjustments*. However, Sections 5-8 of this report detail the impacts of proposed modifications after budget neutralization but before the remaining final adjustments.

This report explains the proposed changes to the GPCI data sources, methodology, and values using a layering approach that incorporates the modifications proposed in previous sections in each subsequent section. The only exception is the sixth modification of incorporating the latest RVU statistics. To provide impacts based upon up-to-date Medicare utilization, the 2014 RVUs are incorporated into each section’s impact analyses apart from the RVU impact analysis itself presented in Section 7. The details of this approach are outlined in Table 1.1, which shows which of the proposed modifications are integrated in the subsequent analyses.

Table 1-1: Breakdown of Proposed Modifications Integrated into Impact Analyses

Proposed Modification	Relevant Tables	Integrated Eighth Update Modifications
(1) BLS OES wage data used in the calculation of the PW and PE GPCI	Table 3-2, Table 3-3, Table 3-4, Table 3-5, Table 3-6, Table 3-7, Table 3-8, Table 3-9,	<ul style="list-style-type: none"> • 2014 RVUs
(2) ACS residential rent data used in the calculation of the PE GPCI	Table 3-10, Table 3-11	<ul style="list-style-type: none"> • 2014 RVUs
(3) MP premium data and methodology to account for missing data used in the calculation of the MP GPCI	Table 4-5, Table 4-6	<ul style="list-style-type: none"> • 2014 RVUs
(4) Methodology used in the calculation of Puerto Rico’s GPCIs	Table 5-1, Table 5-2	<ul style="list-style-type: none"> • 2014 RVUs • 2011-2014 BLS Occupational Employment Statistics • 2009-2013 American Community Survey • 2014-2015 MP Premiums
(5) Methodology used to calculate California’s GPCIs responsive to PAMA provisions	Table 6-4, Table 6-5	<ul style="list-style-type: none"> • 2014 RVUs • 2011-2014 BLS Occupational Employment Statistics • 2009-2013 American Community Survey • 2014-2015 MP Premiums • Assign Puerto Rico 1.0 for all GPCIs

² As of 2015, the states which qualified as frontier states were: Montana, Nevada, North Dakota, South Dakota, and Wyoming.

(6) RVUs used in the calculation of the PW GPCI, PE GPCI, and MP GPCI	Table 7-1, Table 7-2	<ul style="list-style-type: none"> • 2014 RVUs • 2011-2014 BLS Occupational Employment Statistics • 2009-2013 American Community Survey • 2014-2015 MP Premiums • Assign Puerto Rico 1.0 for all GPCIs • Updated California locality structure
---	----------------------	--

The remainder of this report is structured as follows. Section 2 provides a brief overview of how CMS calculates the GPCIs and uses them to adjust provider payments. Section 3 describes updating the GPCIs with updated BLS OES, ACS, and MP premium data sources, and Section 4 provides additional details on updating the malpractice premium data and the methodology used to account for missing data to calculate the MP GPCI. Section 5 discusses modifying the methodology used to calculate the GPCIs for U.S. Territories. Section 6 discusses modifying the methodology used to calculate the GPCIs in California responsive to the PAMA mandated locality update and other legislative provisions. Section 7 presents the impacts of updating the 2011 RVU data with 2014 RVUs, integrating all of the previously proposed modifications. Finally, Section 8 presents the impacts of incorporating all GPCI updates and concludes with a summary of the findings of this report.

2 BRIEF OVERVIEW OF THE GPCI METHODOLOGY

Where physicians locate their practices affects their cost of providing each service. For instance, the wages of physicians are higher in Manhattan than in Montana; the cost of operating a physician practice is higher in San Francisco, California than in Sandusky, Ohio; and purchasing malpractice insurance is more expensive for a physician in Miami, Florida than for one in Minneapolis, Minnesota. To account for such geographic differences in the inputs required to provide medical services, CMS uses GPICs to adjust Medicare physician payments based on geographic differences in physician wages, practice expenses, and the price of malpractice insurance.³ To implement these PFS adjustments in practice, CMS uses three GPICs—PW GPIC, PE GPIC, and MP GPIC—which correspond to these three broad classes of inputs physician practices use.

The remainder of this section provides additional background information regarding how CMS uses GPICs within the Medicare PFS. Specifically, the next three sections answer the following questions in turn:

- How do GPICs affect Medicare payments to physicians?
- What are the component indices that make up GPICs?
- What methodology does CMS currently use to calculate GPICs?

2.1 How GPICs Affect Physician Payments

Under the PFS, Medicare pays for physician services based on a list of services and their payment rates. Under the PFS, every physician service corresponds to a specific procedure code within the Healthcare Common Procedure Coding System (HCPCS). Since 1992, CMS has relied on the RBRVS system to determine the fee for each procedure. In the RBRVS system, payments for each service depend on the relative amounts of inputs required to perform the procedure. These inputs include the amount of physician work needed to provide a medical service, expenses related to maintaining a practice, and malpractice insurance costs. CMS estimates the quantity of inputs required to provide these services under the PFS using PW RVU, PE RVU, and MP RVU, respectively. Higher RVU levels indicate that the service requires more inputs.

Whereas the RVUs measure the level of inputs used for each service, GPICs measure regional variation in the price of each of the three input categories. In essence, GPICs increase the price associated with an RVU in high cost regions and decrease the price associated with an RVU in low-cost regions. GPICs are budget neutral and do not affect aggregate payment levels;

³ CMS posts updates concerning the Medicare physician fee schedule at the following website: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/index.html>

rather, they reallocate payment rates by locality to reflect regional variation in relative input prices. For instance, a PE GPCI of 1.2 indicates that practice expenses in that area are 20 percent above the national average, whereas a PE GPCI of 0.8 indicates that practice expenses in that area are 20 percent below the national average. The three GPCIs are calculated for 107 localities. The localities are defined alternatively by state boundaries (e.g., Wisconsin), metropolitan statistical areas (MSAs) (e.g., Metropolitan St. Louis, MO), portions of an MSA (e.g., Manhattan), or rest-of-state area which exclude metropolitan areas (e.g., Rest of Missouri).

Using the RVUs, GPCIs, and a conversion factor (CF), one can calculate the PFS payment for any service in any locality. The CF translates the sum of the GPCI-adjusted RVUs from RVUs into dollars. Equation (2.1) below demonstrates how the PW, PE, and MP GPCIs combine with the three RVUs and the CF to establish a Medicare physician payment for any service K in locality L ⁴:

$$(2.1) \text{Payment}_{K,L} = \{[GPCI_{PW,L} \times RVU_{PW,K}] + [GPCI_{PE,K} \times RVU_{PE,K}] + [GPCI_{MP,L} \times RVU_{MP,K}]\} \times CF$$

Although GPCIs affect payments for each procedure depending on the relative amounts of PW, PE, and MP RVUs, one can summarize the combined impact of the three GPCI components on a locality's physician reimbursement levels using the Geographic Adjustment Factor (GAF). The GAF is a weighted sum of the three GPCIs for each locality, where the cost share weights are determined by the Medicare Economic Index (MEI) base year weights. Using the current MEI base year weights⁵, one can calculate the GAF as follows in equation (2.2):

$$(2.2) \text{GAF}_L = (GPCI_{PW,L} \times 0.50866) + (GPCI_{PE,L} \times 0.44839) + (GPCI_{MP,L} \times 0.04295).$$

2.2 GPCI Component Indices

CMS currently uses six component indices to calculate the PW, PE, and MP GPCIs. Table 2-1 maps the corresponding component index to its relevant GPCI. Whereas the PW and MP GPCIs are comprised of a single index, the PE GPCI is comprised of four component indices (i.e., the employee wage; purchased services; office rent; and equipment, supplies and other indices). The first component of the PE GPCI, the employee wage index, measures regional variation in the cost of hiring skilled and unskilled labor directly employed by the practice. Practice expenses for employee wages account for the largest share of the PE GPCI. Although the employee wage index adjusts for regional variation in the cost of labor employed directly by

⁴ The Medicare physician payment calculated using equation (2.1) may also be adjusted upwards or downwards through payment modifiers. For example, physicians use a modifier to bill for a service when they assist in a surgery; payment for an assistant surgeon is only a percentage of the fee schedule amount for the primary surgeon.

⁵ For 2017, the MEI base year weights come from 2006 data. See <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareProgramRatesStats/MarketBasketResearch.html> (Accessed February 29, 2016).

physician practices, the employee wage index does not account for geographic variation of practices' costs for services that have been outsourced to other firms. Such cases occur when practices purchase services from law firms, accounting firms, information technology consultants, building service managers, or any other third-party vendor. The second component, the purchased services index, measures regional variation in the cost of these contracted services that physicians typically buy. The third component of the PE GPCI, the office rent index, measures regional variation in the cost of typical physician office rents. Finally, the "equipment, supplies and other" category measures practice expenses associated with a wide range of costs from chemicals and rubber, to telephone and postage. CMS assumes that these capital goods are purchased in a national market and does not adjust for regional variation in practice costs within the "equipment, supplies and other" category. Thus, each locality receives a value of 1.0 for the "equipment, supplies, and other" index.

Table 2-1: Breakdown of GPICs into Current Component Indices

GPCI	Component Index	Measures Geographic Differences in:
Physician Work	Single Component	Physician wages
Practice Expense	<i>Employee Wage</i>	Wages of clinical and administrative office staff
	<i>Purchased Services</i>	Cost of contracted services (e.g., accounting, legal)
	<i>Office Rent</i>	Physician cost to rent office space
	<i>Equipment, Supplies, and Other</i>	Practice expenses for inputs such as chemicals and rubber, telephone use and postage
Malpractice	Single Component	Cost of professional liability insurance

To determine the relative contribution of each type of expense category, the GPCI relies on MEI base year weights. The MEI weights estimate the share of expenses broken down into physician work, practice expense, and malpractice insurance categories for the average American self-employed physician. CMS uses these three MEI cost shares to calculate the GAF by assigning a weight to the PW, PE, and MP GPICs based on its corresponding MEI cost share. Because the PE GPCI is currently composed from four component indices (i.e., non-physician employee compensation; purchased services; office rent; and equipment, supplies, and other), to calculate the PE GPCI, each index is weighted by its PE cost share weight, which is derived from the MEI cost share weights. Table 2-2 below presents the cost share weights currently used to calculate the CY 2017 GPICs, which are based on the reclassified 2006 MEI cost share weights.

Table 2-2: 2006-Based MEI Cost Share Weights for CY 2017 GPCIs

Expense Category	CY 2017 Cost Share Weights (%)
Work	50.866
Practice Expense	44.839
<i>Employee Compensation</i>	16.554
<i>Purchased Services</i>	10.223
<i>Office Rent</i>	8.095
<i>Equipment, Supplies, and Other</i>	9.968
Malpractice Insurance	4.295
Total	100.000

2.3 Current Policy for Calculating GPCIs

Calculating GPCI values requires measuring the price of each input relative to its national average price. Although the general approach is similar across all geographically-adjusted component indices, the specific methodology used to calculate each index value varies. The remainder of this subsection describes the methodology for calculating the six GPCI component indices for the 50 U.S. states and Washington, D.C. However, because county-level data is largely unavailable for the U.S. territories, alternative methodologies, described in greater detail in Section 5, are used to calculate their indices. Sections 2.3.1, 2.3.2, and 2.3.3 present an overview of the methodology for calculating the non-territory component indices within the PW GPCI, PE GPCI, and MP GPCI, respectively. Earlier reports on the Sixth Update of the GPCIs and subsequent revisions describe these methods in greater detail.^{6,7}

2.3.1 PW GPCI Methodology

In the current methodology, CMS defines PW GPCI values based on regional variation in wages across a set of proxy occupation groups. Although one could measure regional variation in physician wages directly, CMS elects not to use this information in the PW GPCI calculation; computing the PW GPCI using direct measures of physician wages would produce a circular measure where the work adjustment would depend on past payments to physicians by Medicare. To mitigate this problem, CMS uses proxy occupation wages in its calculation of PW GPCI values. CMS uses the following four steps to calculate the PW GPCI:

- (1) Select proxy occupation groups;
- (2) Calculate an occupation group-specific wage index for each proxy;
- (3) Assign weights to each proxy-occupation group index to create an aggregate proxy-occupation group index at the locality level; and
- (4) Adjust the aggregate proxy-occupation group index by a physician inclusion factor.

⁶ O'Brien-Strain, et al. November 2010.

⁷ MaCurdy, et al. October 2011.

The proxy occupations Medicare currently selects in Step 1 represent highly educated, professional occupation categories, whose wages would be expected to reflect the overall geographic differences in living costs and amenities for other professional workers. Specifically, the current PW GPCI draws on the regional variation in the earnings of the following seven proxy occupation groups: (i) architecture and engineering; (ii) computer, mathematical, life and physical science; (iii) social science, community and social service, and legal; (iv) education, training, and library; (v) registered nurses; (vi) pharmacists; and (vii) art, design, entertainment, sports, and media.⁸

Step 2 calculates an occupation group-specific index for each of the proxy groups. The occupation group-specific index in a given county is the median hourly earnings for that occupation group relative to RVU-weighted national average median hourly wage for that occupation group.⁹ To create an aggregate proxy-occupation index at the locality level, Step 3 first weights the occupation group-specific indices from Step 2 by each occupational group’s share of the national wage bill. An occupation group’s share of the national wage bill equals the national hourly wage for that occupation multiplied by the number of non-zero wage earners in that occupation nationally and then divided by the wage bill summed across all proxy occupation groups. Table 2-3 below lists the wage bill shares between the occupation groups CMS used to calculate the PW GPCI for CY 2017.

Table 2-3: Eighth Update National Wage Bill Shares used for CY 2017

Occupation Group	Eighth Update
Architecture & Engineering	11%
Computer, Mathematical, Life, & Physical Science	23%
Social Science, Community, & Social Service	15%
Education, Training, & Library	30%
Registered Nurses	14%
Pharmacists	3%
Art Design, Entertainment, Sports, & Media	6%

Using the wage bill share, one can calculate the county-specific hourly index as the sum of the product of the county indices for each occupation group times the wage bill share for each occupation group. Using these median hourly wages, the county values are aggregated to the locality level. Specifically, a Medicare locality index is created by weighting the county values for all counties in the locality by the total PW RVUs in the county. If P_K represents the median

⁸ See Appendix A for a list of the individual occupations in the BLS OES data that compose the seven professional categories used for the Eighth Update of the GPCIs.

⁹ In cases where the BLS OES data does not publish median wages for areas with insufficient numbers of workers in a given occupation, the area is assigned the national median wage for that occupation.

wage across the seven occupations for county K , and $RVU_{w,K}$ represents the physician work RVUs in that county, then the raw physician work GPCI for locality L is:

$$(2.3) \quad X_L = \frac{\sum_K (RVU_{w,K} \times P_K)}{\sum_K RVU_{w,K}}$$

Finally, Step 4 reduces the variation of the work GPCI to 25% of the original. By law, the PW GPCI is adjusted to reduce the variation in the work index by locality to one-quarter (25 percent) of the full variation in X_L .

2.3.2 PE GPCI Methodology

As discussed in Section 2.2, the PE GPCI is currently comprised of four component indices: the employee wage index; the purchased services index; the office rent index; and the equipment, supplies, and other index. Because equipment and supplies are assumed to be purchased on a national market, CMS sets this component index to 1.0 for all localities. Therefore, calculating the PE GPCI for a locality L ($PE\ GPCI_L$) involves calculating the relative earnings of office staff (including earnings by occupation and employment shares by occupation), the relative cost of contracted services, and the relative cost of office space. These three components, along with the unit supply component are then weighted based on their shares within total practice expenses, according to the following formula:

$$(2.4) \quad PE\ GPCI_L = \frac{\sum_{ci \in \{PE\ GPCI\}} (Cost\ Share^{ci} \times X_L^{ci})}{\sum_{ci \in \{PE\ GPCI\}} (Cost\ Share^{ci})}$$

where X_L^{ci} is a PE GPCI component index ci for locality L , and $Cost\ Share^{ci}$ is the share within total practice expenses of component index ci . The remainder of Section 2.3.1 describes the current methodology for each of the four PE GPCI component indices.

Employee Wage Index Methodology

To calculate the employee wage index component of the PE GPCI, one simply follows the steps described in Section 2.3.1 for the PW GPCI, with two modifications. First, Step 1 is modified such that the median hourly earnings are calculated for occupations representing 100% of total non-physician wages in the offices of physicians industry. Second, the wages of these occupations are combined into a single index by weighting these wages by the occupation's employment shares in the offices of physician industry.

Purchased Services Index Methodology

The methodology for computing the purchased services index follows the same broad approach as the employee wage index, but with three modifications. First, rather than including occupations that are employed in physician offices, the purchased services index includes occupations employed in industries from which physicians are likely to purchase services.¹⁰ Second, the weight each occupation receives in the composite index differs between the employee wage index and purchased services index. Whereas the employee wage index weights each occupation based on each share of the national wage bill in the offices of physician industry, the purchased services index weights occupations based on their national wage share within the industries from which physicians purchase services. Third, unlike the employee wage index, only a portion of the purchased services index is geographically adjusted. For the previous GPCI update, only 62% of the index is adjusted for regional variation in labor costs because capital expenses made up approximately 38% of purchased services inputs; the labor-related shares used to differentiate between capital expenses and labor costs came from the CMS Office of the Actuary (OACT).¹¹

Office Rent Index Methodology

Calculating the office rent index component using the ACS data requires the following three-step approach:

- (1) Calculate an RVU-weighted national average rent value using county rent data;
- (2) Create a county-specific index; and
- (3) Calculate a Medicare locality-level index.

The office rent index measures regional variation in the price of office rents using residential rent data from the ACS on median gross rents for two-bedroom apartments.¹² In Step 1, one calculates national average rents as follows:

$$(2.5) \quad R_N = \frac{\sum_K RVU_{PE,K} \times R_K}{\sum_K RVU_{PE,K}}$$

where R_N is the RVU-weighted national average, $RVU_{PE,K}$ is the number of PE RVUs in county K , and R_K is the median gross rent in county K . Using the national rent estimate, one can create

¹⁰ The occupations physicians from which physicians are likely to purchase are those that comprise the "All Other Service" and "Other Professional Expenses" MEI cost shares. This report uses data from the CMS Office of the Actuary (OACT) which decomposes these MEI cost shares into industries, identified by NAICs codes.

¹¹ The exact proportion of the occupation-specific index that is regionally adjusted depends on the labor-related share of expenses in the industries in which that occupation is most frequently employed.

¹² In cases where the ACS does not report 2-bedroom rents for a given county, the county is assigned the average rent value for all other counties in its MSA (or rest of state area).

a county-specific rent index in Step 2 as the ratio of the county gross rents and the national average rents as follows:

$$(2.6) \quad X_K = \frac{R_K}{R_N} .$$

In this case, X_K is the office rent index for county K . In Step 3, one aggregates the county-level office rent index to locality-level office rent index as shown in equation (2.3).

Equipment, Supplies, and Other Index

CMS assigns all localities a value of one for their equipment, supplies, and other component index, which measures practice expenses associated with a wide range of costs from chemicals and rubber, to telephone and postage. CMS assumes that these capital goods are purchased in a national market and does not adjust for regional variation in practice costs within the "equipment, supplies, and other" category.

2.3.3 MP GPCI Methodology

The calculation of the MP GPCI takes into account the premiums for each medical specialties, the specific firms with rate filings in each state, and the market shares of these firms. To measure regional variation in the cost of professional liability insurance, the MP GPCI methodology uses these data to examine the price of a homogenous unit of coverage taking into account specialty mix. Specifically, the MP GPCIs are created in eight steps as follows:

- (1) *Calculate specialty weights for each state.* Using the RVUs for each physician specialty S in each state T , the specialty weights (SW) are:

$$(2.7) \quad SW_{S,T} = \frac{RVU_{MP,S,T}}{\sum RVU_{MP,S,T}} .$$

- (2) *Adjust market share weights:* Market share data are used to identify and collect rate filings from the companies that capture at least 50% of the market share or the top four insurers in each state when the data were available. These "raw" market shares for each insurer in each state are adjusted to re-weight the market shares for the companies whose data have been collected as a share of the total market data collected. In other words, if data has been collected for three companies, each of which has 20 percent market share, the market share adjustment would inflate their market share to 33 percent each so that the sum of the market shares of all insurers for which data is available sum to one.

$$(2.8) \quad MS_{ITYS} = \frac{rawMS_{ITY} \times F_{IST}}{\sum_I (rawMS_{ITY} \times F_{IST})}$$

Where F is equal to 1 if the premium is available for specialty S in state T for insurer I , otherwise F is equal to 0.

- (3) *Summarize premiums by specialty.* A market share weighted average premium P is calculated for each physician specialty S within a county K in year Y :

$$(2.9) \quad P_{SKY} = \sum_I (MS_{ITS} \times P_{SIKY})$$

Where T is the state in which county K is located.

- (4) *Calculate average county premiums.* A specialty weighted average premium is developed for each county in each year from the premiums P_{SKY} reported for each specialty S in each county K in year Y :

$$(2.10) \quad P_{KY} = \sum_S (SW_{S,T} \times P_{SKY}).$$

Where T is the state in which county K is located.

- (5) *Calculate an average county-level MP insurance premium across years.* The current GPCI methodology calculates a 2-year average county-level MP insurance premium using the average county-level MP insurance premiums calculated in Step 4:

$$(2.11) \quad P_K = \frac{P_{K,t} + P_{K,t+1}}{2}$$

where P_K is the average annual premium in county K . As part the Seventh Update, premium data from 2011 and 2012 was used; the Eighth Update proposes using rate filings data from 2014 and 2015.

- (6) *Calculate a national average MP insurance premium.* The county-level MP RVUs are next used to create a national average MP insurance premium, P_N , that weights the county premiums by RVUs:

$$(2.12) \quad P_N = \frac{\sum_K (RVU_{MP,K} \times P_K)}{\sum_K RVU_{MP,K}} .$$

- (7) *Index the premium in each county to the national average:* With the calculation of the national average MP premium, the county premium can be converted to a premium index, X_K . This index is simply the county average premium divided by the national average premium:

$$(2.13) \quad X_K = \frac{P_K}{P_N} .$$

- (8) *Create Medicare locality measures that are RVU-weighted averages of the county index.* Finally, the MP GPCI is created by summing the county level index into Medicare locality measures:

$$(2.14) \quad GPCI_{MP,L} = \frac{\sum_K (RVU_{MP,K} \times X_K)}{\sum_K RVU_{MP,K}}$$

The methodology used to calculate the MP GPCI for the CY 2017 update differs slightly from previous GPCI updates. While the former methodology first calculated the average premiums by insurer, imputing missing specialties, before adjusting by market share weights, the updated method calculates average premiums for each specialty, using issuer market share for only companies with available data for that specialty. This improved method reduces potential bias from large amounts of imputation, a problem that is particularly prevalent for issuers that only write premiums for ancillary specialties, which tend to be low. Consequently, the new method reduces the variation of the MP GPCI.

2.4 Legislative Adjustments to GPCI Calculations

After completing the core GPCI calculations, CMS implements a number of required adjustments. Section 1848(e)(1)(A)(iii) of the Social Security Act requires that the work GPICs reflect only one-quarter of the relative cost differences compared to the national average. In addition, Section 1848(e)(1)(G) of the Social Security Act sets a permanent 1.5 PW GPCI floor for services furnished in Alaska beginning January 1, 2009. Further, section 1848(e)(1)(I) of the Social Security Act establishes a 1.0 PE GPCI floor for physicians' services furnished in frontier States effective January 1, 2011. Based on the legislation, Montana, North Dakota, Nevada, South Dakota, and Wyoming are considered to be "Frontier States" for CY 2017. Table 2-4 below summarizes these adjustments. The empirical analyses in this report detail the calculations of GPICs *before final adjustments* for the statutorily mandated floors. The analyses do reflect the one-quarter adjustment to the PW GPCI.

Table 2-4: Legislative Adjustments to GPCI Calculations

Legislative Adjustment	GPCI Component Affected	Adjustment Description
Section 1848(e)(1)(A)(iii) of the Social Security Act	Physician Work (PW)	PW GPCI should reflect only ¼ of the relative cost differences compared to the national average
Section 1848(e)(1)(G) of the Social Security Act	Physician Work (PW)	Sets a permanent PW GPCI 1.5 floor for services furnished in Alaska
Section 1848(e)(1)(I) of the Social Security Act	Practice Expense (PE)	Sets a permanent 1.0 floor for physicians' services furnished in frontier states

3 CALCULATING THE GPCI WITH MOST RECENT DATA

To update the GPCIs for the Eighth Update, Acumen calculated the GPCIs using more recent versions of data sources used for previous updates. Table 3-1 below shows that the GPCIs under current regulation rely primarily on six data sources and compares the current data sources to the data sources proposed for the CY 2017 Eighth Update. The first data source, the BLS OES wage data, is used for the calculation of the PW GPCI, PE GPCI employee wage index, and PE GPCI purchased services index. The second data source, the ACS, is used for the calculation of the PE GPCI office rent index. Sections 3.1 and Section 3.2, respectively, describe the impact of updating these data sources using the latest data available as of the publication of this report. Section 3.3 briefly discusses updating the 2011-2012 MP premiums with more recent 2014-2015 MP premiums, though Section 4 provides a more detailed account of these data.¹³ The fourth data source, the MEI weights used to update the cost share weights, is briefly discussed in Section 3.5. However, because they were not updated from the Seventh Update, no impact analysis is provided. The CMS labor-related classification, the fifth data source discussed in this section, is also used in the calculation of the PE GPCI purchased services index. Although the labor-related shares were also not updated for this report, Section 1.1 briefly discusses this data source used for the current update. Finally, the sixth data source, the RVUs, used as weights in the calculation of all GPCIs and GPCI components is discussed in Section 7, since the impact analysis of updating the 2011 RVUs with the more recent 2014 RVUs integrates the other methodological modifications proposed in this report.

Table 3-1: Overview of Data Sources for the CY 2017 GPCI Update

GPCI Component Index	Current Regulation	CY 2017 Update
Physician Work GPCI	2009-2011 BLS Occupational Employment Statistics	2011-2014 BLS Occupational Employment Statistics
Practice Expense GPCI		
Employee Wage	2009-2011 BLS Occupational Employment Statistics	2011-2014 BLS Occupational Employment Statistics
Purchased Services	2009-2011 BLS Occupational Employment Statistics	2011-2014 BLS Occupational Employment Statistics
	CMS Labor-Related Classification	CMS Labor-Related Classification
Office Rent	2008-2010 American Community Survey	2009-2013 American Community Survey
Equipment, Supplies, and Other	1.00 for All Counties	1.00 for All Counties
Malpractice GPCI	2011-2012 Malpractice Premiums	2014-2015 Malpractice Premiums
Cost Share Weights	Reclassification of 2006 MEI Weights	Reclassification of 2006 MEI Weights
County RVU Weights	2011 RVUs	2014 RVUs

¹³ Note that the analyses of the impacts on the PW GPCI, PE GPCI, and MP GPCI using updated data presented in Sections 3.1-3.3 hold all other modifications presented in this report constant from the Seventh GPCI update, with the exception of the updated RVUs. These analyses use the updated 2014 RVUs compared to the previously used 2011 RVUs.

3.1 BLS OES Wage Data

To calculate the PW GPCI, PE GPCI employee wage index, and PE GPCI purchased services index as part of this Eighth Update, Acumen replaced the previous data file, the 2009-2011 BLS OES wage data, with more recent 2011-2014 BLS OES wage data. The OES survey is a semi-annual mail survey of all salaried non-farm workers, excluding self-employed individuals, administered by the BLS. OES data from any given year are aggregated using six semi-annual panels of data collected over three years.¹⁴ May 2014 estimates, for example, are based on responses from May 2014, November 2013, May 2013, November 2012, May 2012, and November 2011. The establishments surveyed are selected from lists maintained by State Workforce Agencies for unemployment insurance purposes. Specifically, the BLS-OES collects data from approximately 200,000 establishments from every metropolitan area and state, across all surveyed industries, and from establishments of varying sizes. Using this sample of establishments, the BLS collects detailed wage data by industry and region. Wage data include various forms of compensation but omit nonproduction bonuses or employer costs for nonwage benefits.¹⁵ The OES program produces employment and wage estimates for over 800 occupations based on the Office of Management and Budget's standard Occupational Classification (SOC) system; these occupations make up 22 of the 23 SOC major occupational groups.¹⁶ Because of its reliability, public availability, level of detail, and national scope, BLS OES represents an attractive source for wage and employment data.

The Eighth Update uses BLS OES hourly wage and employment data to estimate both occupation-specific wage indices and occupation weights for the PW GPCI, PE GPCI employee wage index, and PE GPCI purchased services index. As discussed in Section 2, to calculate the PW GPCI, the current GPCI methodology draws wages and employment shares for each MSA from the BLS OES for seven professional categories: architecture and engineering; computer, mathematical, and natural sciences; social scientists, social workers, and lawyers; education, training, and library; registered nurses and pharmacists; and writers, editors, and artists.¹⁷ Next, to calculate the PE GPCI employee wage index, the current GPCI methodology relies on wage data from occupations representing 100 percent of total non-physician wages in the "offices of

¹⁴ The OES uses data over time to increase the sample size of the survey, thereby increasing the reliability of the survey and reducing sampling error. But labor costs change over time, as evidenced by the Employment Cost Index (ECI) time series data. To make the data from all survey respondents comparable, the OES program uses the ECI to translate the occupation-level wages from previous years into a wage number for the most recent year. For additional detail, see "Technical Notes for May 2011 OES Estimates" (http://www.bls.gov/oes/current/oes_tec.htm).

¹⁵ The BLS OES wage estimates include worker compensation regarding base pay, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay and tips, but exclude compensation for back pay, jury duty pay, overtime pay, severance pay, shift differentials, nonproduction bonuses, tuition reimbursement, and non-wage benefits (http://www.bls.gov/oes/oes_ques.htm#Ques16).

¹⁶ Major group 55, Military Specific Occupations, is not included.

¹⁷ See Appendix A for a list of the individual BLS occupations that compose the seven professional categories.

physicians" industry.^{18,19} This industry comprises establishments of health practitioners having the degree of M.D. (Doctor of Medicine) or D.O. (Doctor of Osteopathy) primarily engaged in the independent practice of general or specialized medicine (except psychiatry or psychoanalysis) or surgery. These practitioners operate private or group practices in their own offices (e.g., centers, clinics) or in the facilities of others, such as hospitals or HMO medical centers. The OES data break down wages into detailed occupational categories and also include national-level cost share estimates for the physicians industry. Finally, to calculate the PE GPCI purchased services index, the current GPCI methodology draws from occupations employed in industries from which physicians are likely to purchase services. BLS OES data is used to weight occupations within each industry but each industry's weight is determined by the MEI. For instance, the BLS OES would be used to calculate a wage index for each occupation within the Legal Services industry (NAICS 541100). To determine the weight labor-related legal services should receive within the purchased services index, the methodology uses the MEI cost shares.²⁰

Subsections 3.1.1, 3.1.2, and 3.1.3 present the impacts of updating the currently used 2009-2011 BLS OES wage data with the more recent 2011-2014 BLS OES wage data on the PW GPCI, PE GPCI employee wage index, and PE GPCI purchased services index, respectively.

3.1.1 PW GPCI Impacts

Comparing PW GPICs calculated using the more recent 2011-2014 BLS OES wage data against the indices calculated using the 2009-2011 Bureau BLS OES wage data, this report finds that localities' PW GPICs and GAFs experience little change. Table 3-2 shows how the data update affects PW GPCI figures for localities using the previous Medicare locality structure to enable a direct comparison between regions in the Seventh and Eighth Updates. The average locality experiences a change in its PW GPCI of 0.4 percentage points. Further, 97 percent of localities experience a change in their PW GPCI of less than 1 percentage point. Table 3-3 displays the changes in the GAF values that are affected by PW GPCI update. As expected, these changes are smaller than the changes to the PW GPCI values, with 100 percent of localities experiencing a change of less than one percentage point.²¹

¹⁸ Offices of Physician Industry: NAICS code 621100.

¹⁹ Physician occupations from the offices of physicians' industry excluded from the calculation of the PE GPCI employee wage index include the following occupations from the BLS Healthcare Practitioners and Technical Occupations (SOC 29-0000): 1011, 1021-1023, 1029, 1031, 1041, 1061-1069, 1071, 1081, 1122-1129, 1181.

²⁰ Also, the labor-related shares (LRS) from the Office of the Actuary (OACT) are needed to determine the share of the industry's cost that is labor-related and to be included in the purchased services index. They are discussed in Section 5.

²¹ Note that in Tables 3.2 and 3.3, the impact analyses do not incorporate any of the additional proposed modifications in this report with the exception of the updated 2014 RVUs.

Table 3-2: Impact Analysis, Using Updated BLS OES Wage Data (PW GPCI)

PW GPCIDifference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	3	3.37
0.00 to 0.01	43	48.31
-0.01 to 0.00	43	48.31
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PW GPCIDifference
Abs. Mean	0.004
Mean	0.001
Min	-0.009
P10	-0.005
P25	-0.002
P50 (Median)	0.001
P75	0.004
P90	0.006
Max	0.017

Table 3-3: Impact Analysis, Using Updated BLS OES Wage Data (GAF)

GAF Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	0	0.00
0.00 to 0.01	46	51.69
-0.01 to 0.00	43	48.31
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	GAF Difference
Abs. Mean	0.002
Mean	0.000
Min	-0.005
P10	-0.003
P25	-0.001
P50 (Median)	0.000
P75	0.002
P90	0.003
Max	0.008

3.1.2 PE GPCI Employee Wage Index Impacts

Comparing employee wage indices calculated using the more recent 2011-2014 BLS OES wage data against the indices calculated using the 2009-2011 Bureau BLS OES wage data, this report finds that localities' employee wage indices, PE GPCIs, and GAFs experience little change. Table 3-4 describes how the data update affects employee wage index figures for localities. The average locality experiences a change in its employee wage index of 1.6 percentage points. However, 44 percent of localities experience a change in their employee wage index of less than 1 percentage point. The changes at the PE GPCI and GAF levels are even smaller. 84 percent and 100 percent of localities' PE GPCI and GAF values, respectively,

experience changes of less than 1 percentage point. Table 3-5 and Table 3-6 display the changes in PE GPCI and GAF values respectively.²²

Table 3-4: Impact Analysis, Using Updated BLS OES Wage Data (Employee Wage Index)

Employee Wage Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	1	1.12
0.01 to 0.05	22	24.72
0.00 to 0.01	18	20.22
-0.01 to 0.00	21	23.60
-0.05 to -0.01	25	28.09
-0.10 to -0.05	2	2.25
< -0.10	0	0.00

Percentile	Employee Wage Difference
Abs. Mean	0.016
Mean	-0.002
Min	-0.057
P10	-0.027
P25	-0.015
P50 (Median)	-0.003
P75	0.010
P90	0.024
Max	0.054

Table 3-5: Impact Analysis, Using Updated BLS OES Wage Data (PE GPCI)

PE GPCIDifference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	6	6.74
0.00 to 0.01	35	39.33
-0.01 to 0.00	40	44.94
-0.05 to -0.01	8	8.99
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PE GPCI Difference
Abs. Mean	0.006
Mean	-0.001
Min	-0.021
P10	-0.010
P25	-0.005
P50 (Median)	-0.001
P75	0.004
P90	0.009
Max	0.020

²² Note that in Tables 3.4, 3.5 and 3.6, the impact analyses do not incorporate any of the additional proposed modifications in this report with the exception of the updated 2014 RVUs.

Table 3-6: Impact Analysis, Using Updated BLS OES Wage Data (GAF)

GAF Difference	# of Localities	% of Localities	Percentile	GAF Difference
All	89	100.00	Abs. Mean	0.003
> 0.10	0	0.00	Mean	0.000
0.05 to 0.10	0	0.00	Min	-0.009
0.01 to 0.05	0	0.00	P10	-0.004
0.00 to 0.01	41	46.07	P25	-0.002
-0.01 to 0.00	48	53.93	P50 (Median)	0.000
-0.05 to -0.01	0	0.00	P75	0.002
-0.10 to -0.05	0	0.00	P90	0.004
< -0.10	0	0.00	Max	0.009

3.1.3 PE GPCI Purchased Services Index Impacts

Replacing purchased services indices calculated using the 2009-2011 BLS OES wage data with indices calculated with the more recent 2011-2014 data yields little effect on the purchased services indices, PE GPCIs, and GAFs. Table 3-7 describes how the data update affects purchased services index figures for localities. The average locality experiences a change in its purchased services index of 0.7 percentage points. Further, 71 percent of localities experience a change in their purchased services index of less than 1 percentage point. The changes at the PE GPCI and GAF levels are evidently smaller with 100 percent of localities' PE GPCI and GAF values changing less than 1 percentage point; Table 3-8 and Table 3-9 display the changes in PE GPCI and GAF values respectively.²³

Table 3-7: Impact Analysis, Updated BLS OES Wage Data (Purchased Services Index)

Purchased Services Difference	# of Localities	% of Localities	Percentile	Purchased Services Difference
All	89	100.00	Abs. Mean	0.007
> 0.10	0	0.00	Mean	0.001
0.05 to 0.10	0	0.00	Min	-0.019
0.01 to 0.05	15	16.85	P10	-0.011
0.00 to 0.01	30	33.71	P25	-0.006
-0.01 to 0.00	33	37.08	P50 (Median)	0.000
-0.05 to -0.01	11	12.36	P75	0.007
-0.10 to -0.05	0	0.00	P90	0.014
< -0.10	0	0.00	Max	0.033

²³ Note that in Tables 3.7, 3.8, and 3.9, the impact analyses do not incorporate any of the additional proposed modifications in this report with the exception of the updated 2014 RVUs.

Table 3-8: Impact Analysis, Updated BLS OES Wage Data (PE GPCI)

PE GPCI Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	0	0.00
0.00 to 0.01	45	50.56
-0.01 to 0.00	44	49.44
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PE GPCI Difference
Abs. Mean	0.001
Mean	0.000
Min	-0.003
P10	-0.002
P25	-0.001
P50 (Median)	0.000
P75	0.001
P90	0.002
Max	0.006

Table 3-9: Impact Analysis, Updated BLS OES Wage Data (GAF)

GAF Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	0	0.00
0.00 to 0.01	45	50.56
-0.01 to 0.00	44	49.44
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	GAF Difference
Abs. Mean	0.001
Mean	0.000
Min	-0.002
P10	-0.001
P25	-0.001
P50 (Median)	0.000
P75	0.001
P90	0.001
Max	0.003

3.2 ACS Residential Rent Data

Acumen also examined the impact of updating the 2008-2010 ACS residential rent data used in the calculation of the PE GPCI office rent index with the more recent 2009-2013 ACS data. To estimate prevailing residential rental costs, the proposed office rent index update relies on 2-bedroom rental data from the 5-year 2009-2013 ACS.²⁴ The ACS is one of the largest nationally representative surveys of household rents in the United States. Conducted annually by the U.S. Census Bureau, the ACS samples approximately 3.5 million addresses per year and

²⁴ Acumen obtained a customized extract of the 2009-2013 ACS data from the U.S. Census Bureau on December 24, 2015.

recent response rates are around 97 percent.²⁵ The ACS reports rental information for residences with 0, 1, 2, 3, 4, or 5+ bedrooms at the county level; this rental information also includes utility costs.²⁶ For the 5-year residential rent data, the ACS provides data for all areas; however, the 5-year residential rent data omits data for 21 counties in the continental U.S. with extremely low RVU utilization. To impute rents for these counties, Acumen estimates office rent data based on the weighted average rents in the same MSA as the county with missing rents. ACS data was not used for any territories.

Comparing office rent indices calculated using 2008-2010 ACS data against the indices calculated using the 2009-2013 ACS residential rent data, this report finds that localities' office rent indices, PE GPCIs, and GAFs experience relatively little change. Table 3-10 describes how the data update affects office rent index figures for localities. The average locality experiences a change in its office rent index of 1.7 percentage points. Further, 48 percent of localities experience a change in their office rent index of less than 1 percentage point. The changes at the PE GPCI and GAF levels are also minimal. 92 percent and 100 percent of localities' PE GPCI and GAF values, respectively, experience changes of less than 1 percentage point; Table 3-11 and Table 3-12 display the changes in PE GPCI and GAF values respectively.

Table 3-10: Impact Analysis, Using Updated ACS Residential Rent Data (Office Rent Index)

Office Rent Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	5	5.62
0.01 to 0.05	19	21.35
0.00 to 0.01	22	24.72
-0.01 to 0.00	21	23.60
-0.05 to -0.01	20	22.47
-0.10 to -0.05	2	2.25
< -0.10	0	0.00

Percentile	Office Rent Difference
Abs. Mean	0.017
Mean	0.001
Min	-0.077
P10	-0.028
P25	-0.010
P50 (Median)	0.000
P75	0.011
P90	0.024
Max	0.072

²⁵ ACS Response Rates are available here: <http://www.census.gov/acs/www/methodology/sample-size-and-data-quality/response-rates/>

²⁶ Utilities cannot be analyzed separately since some individuals' monthly rent covers the cost of utilities. Thus, the ACS data can only accurately measure gross (i.e., including utilities) rents rather than net rents. In the ACS survey, individuals report whether electricity, gas, water/sewer, and oil/coal/kerosene/wood costs (i.e., questions 11a, 11b, 11c, and 11d on the survey) charges were included in their rent and – if not – they report what their utility cost was during the past 12 months. See: <http://www.census.gov/programs-surveys/acs/methodology/questionnaire-archive.html#.html>

Table 3-11: Impact Analysis, Using Updated ACS Residential Rent Data (PE GPCI)

PE GPCIDifference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	5	5.62
0.00 to 0.01	41	46.07
-0.01 to 0.00	41	46.07
-0.05 to -0.01	2	2.25
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PE GPCIDifference
Abs. Mean	0.004
Mean	0.000
Min	-0.017
P10	-0.006
P25	-0.002
P50 (Median)	0.000
P75	0.003
P90	0.006
Max	0.016

Table 3-12: Impact Analysis, Using Updated ACS Residential Rent Data (GAF)

GAF Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	0	0.00
0.00 to 0.01	46	51.69
-0.01 to 0.00	43	48.31
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	GAF Difference
Abs. Mean	0.002
Mean	0.000
Min	-0.008
P10	-0.003
P25	-0.001
P50 (Median)	0.000
P75	0.001
P90	0.002
Max	0.007

3.3 Malpractice Premium Data

For the calculation of the MP GPCI, Acumen updated the 2011-2012 MP premiums with more recent 2014-2015 MP premiums. The calculation of the MP GPCI takes into account the premiums for 30 medical specialties, the specific firms with rate filings in each state, and the market shares of these firms. Because collecting malpractice premiums and insurer market shares involved a complex process of collecting data from multiple sources, Section 4 describes the process for updating the MP premium data in greater detail.

3.4 MEI Cost Share Weights

To determine the relative contribution of each type of physician practice expense, the GPCI methodology relies on MEI base year weights. The MEI weights estimate the share of physician expenses broken down into the PW, four PE components, and MP insurance categories for the average American self-employed physician. CMS calculates the MEI cost shares using data from the American Medical Association (AMA) Physician Practice Information Survey (PPIS). This data contains practice cost information collected from self-employed physicians and selected self-employed non-medical physician specialties.²⁷ For the CY 2014 GPCI update, Acumen updated the 2006-based MEI cost share weights with a reclassification of the 2006-based MEI cost share weights. Since there were no updates to the MEI cost share weights since the reclassification of the 2006-based MEI cost share weight, Acumen continued to use these weights for the Eighth Update.

3.5 CMS Labor-Related Classification

In addition to the BLS OES wage data, calculation of the PE GPCI purchased services index utilizes the CMS labor-related classification to identify whether an industry is classified as labor-related as determined by CMS. For the CY 2017 GPCI update, Acumen used the same labor-related shares received from OACT for the revisions to the Sixth Update of the GPICs (which were also used in the Seventh Update) to differentiate between capital expenses and labor costs, as these are the most recent classifications available. CMS generally does not use geographic adjustments for goods-related products because most tangible, non-labor related products can be sold on a nation-wide market. As a result, the current GPCI methodology only adjusts physicians' purchased service costs for regional variation in labor costs. The CMS labor-related classification system defines a cost category as labor-related if the cost category is defined as being both labor intensive and its costs vary with, or are influenced by, the local labor market. For example, the labor-related share (LRS) CMS calculates for legal services is 67 percent. By using these LRS assumptions from CMS, the GPCI methodology is consistent with CMS's labor-related classification methodology used in other provider settings.²⁸

²⁷ 75 FR 40,040.

²⁸ The LRS CMS uses for legal services is based on the results of a professional services survey for hospital facilities.

4 UPDATING THE MP GPCI

The MP GPCI is designed to adjust for geographic differences in professional liability or malpractice insurance premiums. For the Eighth Update, this section describes updating the 2011-2012 MP premiums currently used to calculate the MP GPCI with more recent 2014-2015 MP premiums. Determining a locality's typical malpractice insurance costs requires answering the following four questions:

- What are the features of standard malpractice coverage that physicians purchase?
- Which insurance companies have the largest market share in each state?
- What premiums do these insurers charge for the typical malpractice coverage?
- Do states mandate any supplementary coverage?

Section 4.1 describes how the Eighth Update answers each question as part of the malpractice premium data collection process. Section 4.2 details how the malpractice premiums dataset is constructed.

Once the malpractice premium data are collected and standardized, each locality's MP GPCI value can be calculated. The remainder of this section provides an overview of this process. In certain cases, malpractice premium data are not available or are only available for earlier time periods. Section 4.3 describes how the Eighth Update addresses these missing data issues. Finally, Section 4.4 presents the impact of this update on the MP GPCI.

4.1 Malpractice Premium Data Collection

As part of the Eighth Update, Acumen collected malpractice data from the System for Electronic Rate and Form Filing (SERFF), state departments of insurance, National Association of Insurance Commissioners (NAIC), the Medical Liability Monitor (MLM), and other sources. This section describes the major steps to collect data from these sources. These steps include: (i) defining a standard for malpractice policies, (ii) identifying the medical malpractice underwriters with the largest market shares, (iii) collecting the malpractice premium data, and (iv) collecting additional information on patient compensation fund (PCF) surcharges. Each of the following four subsections describes these steps in detail.

4.1.1 Step 1: Defining a Standard for Malpractice Policies

The first step of the data collection process identifies the specific characteristics of a malpractice insurance policy to determine the rate filings to be collected. Malpractice premiums vary across regions and companies due to a number of factors related to the type of policy that is purchased. Policy characteristics that affect premiums include: whether the policy is claims made or occurrence based, the liability limits, years of coverage, and other factors. By collecting malpractice data for one standardized malpractice coverage type that is widely used across

regions, regional variation in malpractice premiums can be attributed to geographic price differences of premiums rather than regional variation in the types of coverage physicians elect.

The data collection process required malpractice premium rate filings to meet the following criteria:

- **Claims-made:** Acumen chose claims-made, rather than occurrence based policies because they are the more commonly used malpractice insurance policies in the United States. A claims-made policy covers physicians for the policy amount in effect when the claim is made, regardless of the date of the event in question. Conversely, an occurrence policy covers a physician for the policy amount in effect at the time of the event in question, even if the policy is expired.
- **1 million/3 million liability (coverage) limits:** Acumen chose one million and three million liability limits because they are the most commonly used liability limits for medical malpractice insurance policies in the United States. A 1M/3M liability limit policy means that the most that would be paid on any one claim is \$1,000,000 and that the most that the policy would pay for several claims over the time frame of the policy is \$3,000,000.
- **Mature rates:** Acumen collected mature year rates. As claims made coverage continues to renew each year, the coverage period expands, and the insurance company's exposure to loss increases. For the first few years a claims-made policy is in force, the premiums increase proportional to the increased risk, a process known as a claims-made step factor. However, usually by around fifth coverage year, the risk of loss levels off and the step factor reaches an unchanging mature rate. At the mature year, premium adjustments are based only on annual rate changes.
- **Regional variations:** While many rates applied statewide, premiums were regionally adjusted in some states. For regionally adjusted states, insurance company report premium data based upon territories composed of one or more counties. The number of territories and territory definitions differed by insurance company and by year. Acumen's dataset reports company premium rates at the county-level.

4.1.2 Step 2: Identifying the Primary Medical Malpractice Underwriters

In the second step, Acumen identified the top medical malpractice underwriters in each state based on their 2014 market shares, or share of direct written premiums. To determine the top medical malpractice underwriters, Acumen used the most recently available data published in the 2014 Market Share Reports accessed from the NAIC website.²⁹

The NAIC Property/Casualty reports, in particular, include the top ten company groups by state and the top 125 groups countrywide for each property/casualty annual statement line of

²⁹ National Association of Insurance Commissioners, "2014 Market Share Reports for Property/ Casualty" http://www.naic.org/documents/prod_serv_statistical_msr_pb.pdf

business (medical MP is one of hundreds of lines of insurance). Compared to the previous method of collecting market share data from State Departments of Insurance, supplemented by the Perr and Knight database, using NAIC data exclusively simplifies and standardizes the process in anticipation of annualized updates by relying on a single data source reconciled at the same point in time for all market share calculations. Furthermore, using the NAIC data exclusively ensures that the market share data collection process is transparent and easily retraceable.

One difficulty of using exclusively NAIC data, is that the NAIC reports market share information at the group level, where a group can be comprised of several different insurance companies. To ensure that data are collected for all companies within a group, Acumen referred to the group to company crosswalk in the appendix of the NAIC report. However, because it was not possible to determine the market share of the individual companies within a group using the NAIC data, Acumen weighted each company within the group evenly for a given state. Table 4-1 below shows the percentage of the market share that was collected from each state/territory for the Eighth Update. All market share calculations in the table are based on 2014 data from the NAIC.

Table 4-1: Market Share Data Collected by State

State	Number of Companies	2014 Percent Market Share	State	Number of Companies	2014 Percent Market Share
AK	2	65.02	MT	3	41.27
AL	4	65.06	NC	4	57.24
AR	4	56.1	ND	2	39.26
AZ	2	56.57	NE	4	34.65
CA	5	52.94	NH	4	58.2
CO	2	58.14	NJ	4	70.99
CT	1	26.30	NM	2	37.56
DC	2	50.57	NV	5	50.62
DE	4	61.95	NY	1	28.81
FL	4	43.90	OH	5	64.23
GA	5	27.93	OK	1	30.11
HI	2	51.48	OR	2	50.12
IA	5	58.66	PA	4	19.03
ID	4	48.59	RI	3	50.37
IL	4	52.14	SC	2	18.21
IN	4	49.22	SD	2	73.47
KS	4	59.13	TN	3	55.48
KY	4	32.79	TX	5	51.77
LA	2	57.65	UT	4	67.45
MA	2	37.21	VA	2	58.54
MD	4	55.84	VT	2	72.98
ME	2	66.59	WA	3	54.22
MI	1	6.36	WI	5	71.9
MN	3	13.45	WV	4	58.1

MO	3	41.27	WY	2	54.28
MS	2	7.29			

4.1.3 Step 3: Collecting Malpractice Premium Data

In the third step, Acumen collected rate filings for malpractice insurance premiums through the SERFF Filing Access Interface and state departments of insurance. The SERFF Filing Access Interface, property of the NAIC, is a recently launched web-based tool that enables consumer access to all rate and form filings marked public by the state. Though not every state participates in SERFF, as of 2016, 31 states mandate SERFF in at least one business area, and Acumen was able to collect malpractice premium data from 32 states' SERFF portals. Using SERFF as the primary method of data collection for all participating states optimized the malpractice premium data collection process by obviating the need to contact each state's department of insurance and rely on them to send the correct filings. However, for states that do not participate in the SERFF Filing Access Interface for property and casualty filings, Acumen employed both email and telephone outreach to identify the appropriate contact person within each state's department of insurance to access and send medical malpractice rate filings. Acumen requested rate filings with effective dates in 2014 and 2015, or the most recent effective date if those were not available.

Virtually all state insurance departments have established mechanisms to release rate filings to the public and required our data collection to follow these established mechanisms. About eighty percent of the state insurance departments we contacted processed public records requests internally. For the others, the state insurance departments refer requests to third party vendors who pull rate filings in person. For these states, Acumen was required to hire third party vendors to pull rate filings, scan copies, and email the documents.

Using these methods, Acumen was able to collect rate filings in all 50 states, the District of Columbia and Puerto Rico.³⁰ Rate filings were collected from companies representing at least 50% of the medical malpractice market in 31 states and the District of Columbia. In the remaining states and Puerto Rico, Acumen collected rate filings representing a smaller percentage of the market because rate filings for the largest companies were unavailable.

4.1.4 Step 4: Collecting Patient Compensation Fund Surcharges

In the fourth step, Acumen collected PCF surcharges, which represent an additional cost to physicians and surgeons in some states. PCFs are state funds that operate like an excess-layer of insurance. If a judgment exceeds the physician's primary policy limit, the PCF pays the amount above the limit (or the amount between the limit and another statutorily-prescribed

³⁰ Acumen was unable to collect rate filings from American Samoa, Guam and Virgin Islands.

amount). PCFs are funded by surcharges (paid directly to the PCF) that physicians and hospitals pay in addition to their primary policy premiums. These arrangements give primary insurers, physicians, and hospitals an added level of coverage in the event of large judgments. Eight states have PCFs that charge physicians a surcharge on top of their primary malpractice policy premium. In some states participation is mandatory, in others participation is voluntary.

Acumen determined the states that operate a PCF using 2015 data from the Medical Liability Monitor (MLM.) The states that have PCFs are Indiana, Kansas, Louisiana, Nebraska, New Mexico, Pennsylvania, South Carolina, and Wisconsin, of which only Kansas, Pennsylvania, and Wisconsin are mandatory. The MLM data also contained background information on each state's PCF, the private coverage requirements associated with the PCF, and the liability limits for the PCF.

To collect comparable premium data in states operating PCFs and in other states, our team aimed to collect rates for claims-made coverage with total limits of liability (i.e., including private coverage and excess coverage provided by the PCF) equal to \$1,000,000/\$3,000,000. Our methodology differed depending on whether the PCF was mandatory or voluntary. For the five states with voluntary PCF participation our team did not add the PCF surcharges to the collected premiums; instead, our team utilized the premiums for private coverage with \$1,000,000/\$3,000,000 liability coverage limits to maintain consistency with non-PCF states.

For the states with mandatory PCF participation, our team added the PCF surcharge to the primary policy premium to calculate the full cost of obtaining malpractice insurance in these states. If the PCF provided multiple coverage options, our team used surcharges for coverage that would bring the total limit of liability (primary plus PCF) as close to \$1,000,000/\$3,000,000 as possible. For example, Kansas' PCF requires participants to hold primary coverage of \$200,000/\$600,000. PCF participants can choose from several PCF coverage options, including \$800,000/\$2,400,000 limits of liability. Our team requested surcharges for this option since it is associated with total coverage (primary plus PCF) of \$1,000,000/\$3,000,000. Table 4-2 summarizes the private coverage requirements and limits of liability for each mandatory PCF.

However, it was not always possible to choose surcharges associated with total coverage of \$1,000,000/\$3,000,000. Physicians in Wisconsin, for example, must purchase an insurance policy with \$1,000,000/\$3,000,000 limit of liabilities in the private market to participate in Wisconsin's mandatory PCF. Wisconsin's PCF provides unlimited excess coverage in addition to this private coverage. Therefore, Acumen did not add Wisconsin's PCF surcharge rates and instead used primary coverage rates for the \$1,000,000/ \$3,000,000 limit of liability.

Table 4-2: Patient Compensation Funds

State	PCF Name	Mandated	Private Coverage Required	PCF Liability Limit
KS	Health Care Stabilization Fund	Mandatory	\$200K/\$600K	\$100K/\$300K \$300K/\$900K \$800K/\$2.4M
PA	Mcare (Medical Care Availability and Reduction of Error)	Mandatory	\$0.5M/\$1.5M	\$0.5M/\$1.5M
WI	Patient Compensation Fund	Mandatory	\$1M/\$3M	No Limit

4.2 Constructing the Malpractice Premium Data Set

To structure the rate filing information into a dataset for use in developing the malpractice GPCIs, Acumen developed crosswalks to match rate filing information to CMS data sources. Two distinct crosswalks were required: specialty and territory. Acumen employed its on-staff clinicians to map the specialties listed in the rate filings to specialty codes used in the CMS carrier files. Rather than select a subset of specialties, Acumen entered premium information for all physician and surgeon and ancillary specialties available in the collected rate filings.

The specialty crosswalk preserved information regarding surgery classes and categorizations that impact premium rates. For example, many insurance companies classified general practice physicians as non-surgical, minor-surgical, or major-surgical, each with different malpractice premiums. Acumen recorded this information and standardized the data to CMS carrier codes.

Table 4-3 describes the 30 specialties used to calculate the MP GPCI. These specialties were selected because premium data were available for at least 49 of the 51 states, including the District of Columbia, from which data were collected. Specialty premiums are classified as major surgery, minor surgery, or no surgery. To select the preferred surgical classification, Acumen identified the most common classification for each specialty across states.

Table 4-3: Malpractice Insurance Specialties and Surgery Classifications

CMS Specialty Code	Specialty Name	Preferred Surgery Class
1	Physician/General Practice	Minor Surgery
2	Physician/General Surgery	Major Surgery
3	Physician/Allergy/ Immunology	No Surgery
4	Physician/Otolaryngology	Minor Surgery

5	Physician/Anesthesiology	No Surgery
6	Physician/Cardiovascular Disease (Cardiology)	No Surgery
7	Physician/Dermatology	Minor Surgery
8	Physician/Family Practice	No Surgery
10	Physician/Gastroenterology	Minor Surgery
11	Physician/Internal Medicine	No Surgery
13	Physician/Neurology	No Surgery
14	Physician/Neurosurgery	Major Surgery
16	Physician/Obstetrics & Gynecology	Major Surgery
18	Physician/Ophthalmology	Minor Surgery
20	Physician/Orthopedic Surgery	Major Surgery
22	Physician/Pathology	No Surgery
24	Physician/Plastic and Reconstructive Surgery	Major Surgery
25	Physician/Physical Medicine and Rehabilitation	No Surgery
26	Physician/Psychiatry	No Surgery
28	Physician/Colorectal Surgery (Proctology)	Major Surgery
30	Physician/Diagnostic Radiology	No Surgery
33	Physician/Thoracic Surgery	Major Surgery
37	Physician/Pediatric Medicine	Minor Surgery
42	Certified Nurse Midwife	Minor Surgery
77	Physician/Vascular Surgery	Major Surgery
78	Physician/Cardiac Surgery	Major Surgery
84	Physician/Preventive Medicine	No Surgery
92	Physician/Radiation Oncology	Minor Surgery
93	Physician/Emergency Medicine	Minor Surgery
C3	Interventional Cardiology	Minor Surgery

Because many companies have different rates within states, Acumen also developed a territory crosswalk. The crosswalk assigns each territory's malpractice rates to specific counties. Acumen also preserved the original territory code terminology specific to individual rate filings to allow easy crosschecking of collected rate filings.

4.3 Adjustments for Missing Data

The steps outlined in Section 2.3.3 describe the methodology for calculating the malpractice insurance GPCI when premium data are complete. Missing premium data require alternative strategies. Specifically, Acumen classified missing data into three types and developed an alternative methodology to address each: (i) premium data missing in the base year or that became effective mid-year, (ii) premium data missing rates for specific specialties, (iii) no premium data available (i.e., American Samoa, Guam, and Virgin Islands).

4.3.1 Case 1: Premium Data Missing in Base Year or Became Effective Mid-Year

Our team requested rate filings with effective dates in 2014 and 2015, and whenever possible, this update uses rates that were in effect in 2014 and 2015. However, in many instances only filings with earlier or later effective dates were available. For most states, rate filings do not have to be submitted on a regular schedule. Therefore, rate filings can become effective midyear and/or remain effective for more than one year. The methodology considers a rate to be in effect from its effective date until the effective date of a replacement rate from a more recent filing. For example, the 2014 and 2015 periods, respectively, could be represented by a filing from January 2013 replaced by one in September 2014.

When recent rate filings were unavailable, it was generally for one or more of the following reasons: (i) the company in question may not have changed its medical malpractice rates recently, (ii) the state in question may have flexible rate filings requirements, and/or (iii) the company in question may be a not-for-profit or risk retention group (RRG).³¹ These three cases have different implications for the accuracy of premium rates reported in older filings. The first case arises because underwriters are often not required to file if rates are unchanged from the previous rate filing. In this case, the most recent filing accurately represents current premium rates, even if the most recent filing has an effective date before 2014. The second and third cases arise because some underwriters are not required to file rates, even when rates have changed. In these two cases, the most recent filing does not necessarily accurately represent current premium rates.

If rates for 2014 or 2015 were not available for a specialty from any issuer, Acumen imputed rates for the missing year using historical data. If the issuer had at least two filings available for that specialty, Acumen used the two most recent filings to perform a linear extrapolation to impute 2014 or 2015 rates. If the issuer had only one filing available for that specialty, Acumen trended the data over time using the average rate for the relevant state from MLM data.

4.3.2 Case 2: Missing Premium Data for a Specialty

Although Acumen extracted premium information for all physician and surgeon and ancillary specialties reported in the rate filings, some filings reported rates for only a limited number of specialties. When none of the filings for a given state reported premium rates for certain specialties, failing to account for such omissions could produce an insurer price that reflects a specific mix of risk instead of geographic differences in price. The methodology imputed missing specialties using premiums for other rate filings within the state. Our team computed the national average premium for each specialty to rank specialties by insurance risk.

³¹ RRGs are a form of self-insurance. Whereas typical insurance companies are owned by outside investors, RRGs are owned by the policyholders.

Risk factors were computed by renormalizing the national average premiums so that the least expensive specialty had a risk factor equal to one. In each instance of missing premium data, Acumen computed the average of the imputed values obtained by scaling the premiums of the specialties with the lowest and highest risk factors in that state.

4.3.3 Case 3: No Premium Data Available from Rate Filings

Acumen’s outreach efforts included the four U.S. territories; however since we were not able to collect premium data from American Samoa, Northern Mariana Islands, Guam, or the Virgin Islands, Acumen used an alternative methodology to assign MP GPCI values to these territories. Acumen assigned Hawaii’s values to American Samoa and Guam since American Samoa and Guam are part of the same locality as Hawaii. Since there is no such overlap for the Virgin Islands and Puerto Rico, Acumen assigned them a value of 1.00, as in previous updates. Although malpractice premium data were available for Puerto Rico, at the request of CMS, Acumen applied the same method used for the Virgin Islands to Puerto Rico to ensure consistency among the territories. A more detailed explanation of this method is provided in Section 5. Table 4-4 summarizes the strategies for dealing with missing premium data for the territories.

Table 4-4: Treatment of U.S. Territories without Rate Filings

Territory	Treatment
Guam, American Samoa, and Northern Mariana Islands	No values calculated. Assigned Hawaii values.
Virgin Islands and Puerto Rico	No values calculated. Assigned value of 1.0

4.4 Impact of MP GPCI Update

Comparing the MP GPCI calculated using the updated malpractice premium data against the indices calculated using the malpractice premium data from the Seventh Update, this report finds that although localities’ MP GPCI values experience large, but not unprecedented impacts, localities’ GAF values experience little change. Table 4-5 shows how the data update affects MP GPCI figures for localities. The average locality experiences a change in its MP GPCI of 10.5 percentage points. Further, 60 percent of localities experience a change in their MP GPCI of greater than 5 percentage points.³² Table 4-6 displays the smaller changes in the GAF values.

³² Though large, these impacts are not unprecedented. In the Seventh update, over 65 percent of localities experienced a change in their MP GPCI of greater than 5 percentage points.

The average locality experiences a change in its GAF of 0.5 percentage points, and 89 percent of GAF values experience changes of less than 1 percentage point.³³

Table 4-5: Impact Analysis, Using Updated Malpractice Data (MP GPCI)

MP GPCIDifference	# of Localities	% of Localities
All	89	100.00
> 0.10	14	15.73
0.05 to 0.10	12	13.48
0.01 to 0.05	10	11.24
0.00 to 0.01	8	8.99
-0.01 to 0.00	1	1.12
-0.05 to -0.01	17	19.10
-0.10 to -0.05	9	10.11
< -0.10	18	20.22

Percentile	MP GPCIDifference
Abs. Mean	0.105
Mean	0.010
Min	-0.335
P10	-0.159
P25	-0.069
P50 (Median)	-0.009
P75	0.056
P90	0.176
Max	0.453

Table 4-6: Impact Analysis, Using Updated Malpractice Data (GAF)

GAF Difference	# of Localities	% of Localities
All	89	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	7	7.87
0.00 to 0.01	37	41.57
-0.01 to 0.00	42	47.19
-0.05 to -0.01	3	3.37
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	GAF Difference
Abs. Mean	0.005
Mean	0.000
Min	-0.014
P10	-0.007
P25	-0.003
P50 (Median)	0.000
P75	0.002
P90	0.008
Max	0.019

³³ Note that in Tables 4.5 and 4.6, the impact analyses do not incorporate any of the additional proposed modifications in this report with the exception of the updated 2014 RVUs.

5 UPDATING METHODS FOR CALCULATING THE TERRITORIES' GPCIS

As discussed in Section 2, calculating the GPCIs requires county-level wage data from the BLS OES and county-level rent data from the ACS, which is only available for one of the United States' territories, Puerto Rico.³⁴ Because of this discrepancy in data availability among the territories, county-level wage and rent data has been used to calculate Puerto Rico's GPCIs for recent updates, while the Pacific territories have been assigned Hawaii's values. The Virgin Islands, however, are a separate locality from the Hawaii, and have historically been assigned the national average of 1.0 for all indices. This inconsistency in how territories' GPCIs are calculated substantially disadvantages Puerto Rico, which currently has the lowest GAF of any locality. At the request of CMS, Acumen has examined an alternative methodology for calculating the GPCIs of Puerto Rico that assigns each of the locality's indexes the national average of 1.0, as is currently done for the Virgin Islands. The remainder of this section explores the impact of this alternative methodology. Specifically, Section 5.1 expands on the current data and methodology that is used to calculate the GPCIs of the territories and why this approach is problematic. Section 5.2 presents an alternative methodology and explores the impacts of assigning Puerto Rico a value of 1.0 for all of its GPCIs.

5.1 Current Data and Methodology Used for Calculating GPCIs for the Territories

In the current methodology, CMS defines PW GPCI values based on regional variation in wages across a set of proxy occupations. In particular, the method requires county-level median hourly earnings for a set of proxy occupations and relies on wage data from the Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES). Puerto Rico is the only territory with available BLS OES wage data at the county-level, and this data is currently used to calculate its PW GPCI. The Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands, however, do not have county-level data represented in the BLS OES wage data. Because the Pacific island territories are part of the Hawaii/Guam locality, these territories are assigned the Hawaii locality value. The Virgin Islands, however, are a separate locality, so the same solution does not work. Given the absence of data, the Virgin Islands locality is assigned a value of 1.0.

In the current methodology, CMS similarly defines PE GPCI values based on regional variation in the earnings of office staff, the cost of contracted services, and the cost of office

³⁴ Although county-level BLS OES wage data does not exist for any territory other than Puerto Rico, aggregate territory-level BLS OES wage data is available for some territories. However, these data are not used in the current methodology.

space. Specifically, the PE GPCI is comprised of four component indices (i.e., the employee wage; purchased services; office rent; and equipment, supplies, and other indices). To calculate the employee wage and purchased services indices, the current methodology requires county-level median hourly earnings of office staff and contracted services. To calculate the office rent index, the current methodology relies on county-level median rents. CMS assumes that the capital good expenses measured by the equipment, supplies, and other index are purchased in a national market and does not adjust for regional variation, assigning every locality an equipment, supplies, and other index value of 1.0. CMS relies on wage data from the BLS OES for the county-level median hourly earnings and rent data from the American Community Survey (ACS) for the county-level median rents. Similar to the BLS OES wage data, county-level data are represented in the ACS rental data for Puerto Rico but are not represented for the Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands. As with the PW GPCI, Puerto Rico's own data is used to calculate its office rent index. The Pacific island territories are ultimately assigned the Hawaii locality value given the absence of county-level data. The Virgin Islands are assigned a value of 1.0.

MP GPCI values are similarly defined by CMS based on regional variation in the cost of professional liability insurance. Specifically, the current methodology requires malpractice insurance premium data for common physician specialties in each state and territory. Similar to the other data sources, malpractice premium data could only be obtained for Puerto Rico. Thus for the Pacific Island territories, Hawaii's malpractice premium rates and MP GPCI values are used. Again, the Virgin Islands are assigned a value of 1.0 because the Virgin Islands are a separate locality.

The current methodology for calculating the territories' GPCIs is based primarily on the amount of available data and/or which locality adjustments are applied rather than uniform inclusion of data from consistent sources. Puerto Rico in particular has expressed dissatisfaction with the current methodology and inconsistency between territories because Puerto Rico has very low GPCIs, and it is the only territory with GPCI adjustments made relative to its data compared to data from the U.S. states. As requested by CMS, assigning Puerto Rico the average GPCI value of 1.0 for each index as is done for the Virgin Islands ensures greater consistency in the calculation of the territories' GPCIs and increases Puerto Rico's GPCIs to reflect the levels of other territories without any significant decreases to other localities.

5.2 Proposed Approach for Applying a Consistent GPCI to the Virgin Islands and Puerto Rico Localities

To address the methodological challenges that the current approach presents, at the request of CMS, Acumen has calculated Puerto Rico’s GPCIs assigning the national average of 1.0 to each GPCI index, as is currently done for the Virgin Islands.

This modified approach produces greater consistency in the calculation of the territories’ GPCIs by grouping all of the Caribbean Islands and all of the Pacific Islands and assigning a single method to each group. Similarly, assigning 1.0 to the PW GPCI, PE CPGI, MP GPCI, and GAF of the Puerto Rico locality not only produces consistency in the methods used to calculate the territories’ GPCIs, but also in the payment adjustment outcomes. The proposed method diminishes the gap between Puerto Rico and the other territories’ GPCI values.

Another advantage of the proposed modification to calculating Puerto Rico’s GPCIs is that the resulting impacts on all other Medicare localities’ GPCIs are minor, even after adjusting for budget neutrality. Table 5-1 and Table 5-2 summarize the budget neutralized impacts of assigning Puerto Rico a value of 1.0 to each of its GPCIs.³⁵ The tables show that after adjusting for budget neutralization, assigning Puerto Rico a value of 1.0 to each of its GPCIs results in changes of less than 1 percentage point to the GPCIs and GAFs of all localities aside from Puerto Rico. Likewise, excluding Puerto Rico, the average locality experiences a change of 0.0 percentage points to its PW GPCI and GAF and 0.1 percentage points to its PE GPCI and MP GPCI as a result of this modification.

Table 5-1: Impact Analysis for Assigning 1.0 to Puerto Rico’s GPCIs

Difference	# of Localities			
	PW GPCI	PE GPCI	MP GPCI	GAF
All	89	89	89	89
> 0.10	0	1	1	1
0.05 to 0.10	1	0	0	0
0.01 to 0.05	0	0	0	0
0.00 to 0.01	76	41	18	56
-0.01 to 0.00	12	47	70	32
-0.05 to -0.01	0	0	0	0
-0.10 to -0.05	0	0	0	0
< -0.10	0	0	0	0

³⁵ Note that the impact analyses in Tables 5.2 and 5.3 incorporate updated 2011-2014 BLS OES data, 2009-2013 ACS data, 2014-2015 MP premium data, and 2014 RVUs.

Table 5-2: Distribution of Impacts for non-Puerto Rico Localities of Assigning 1.0 to Puerto Rico's GPCIs

Percentile	PW GPCI Difference	PE GPCI Difference	MP GPCI Difference	GAF
Abs. Mean	0.000	0.001	0.001	0.000
Mean	0.000	-0.001	-0.001	0.000
Min	-0.001	-0.001	-0.002	-0.001
P10	-0.001	-0.001	-0.002	-0.001
P25	0.000	-0.001	-0.001	-0.001
P50 (Median)	0.000	-0.001	-0.001	0.000
P75	0.000	0.000	-0.001	0.000
P90	0.000	0.000	0.000	0.000
Max	0.000	0.000	0.000	0.000

6 CALIFORNIA LOCALITY UPDATE

In accordance with the legislative requirement of the Protecting Access to Medicare Act (PAMA), CMS must implement required changes to prior methods pertaining to the calculation of geographic cost adjustments in California. Specifically, PAMA requires CMS to change the localities used for calculating geographical adjustments under the PFS in California beginning with reimbursements on January 1, 2017. In addition, PAMA requires, for some of these new localities, that their payment levels adjust gradually from their levels under the old locality system to the new and that their payment levels will not decrease from what they would have been under the old system.

The remainder of this section summarizes Acumen's approach for supporting CMS in implementing the required changes of PAMA. Section 6.1 summarizes the requirements of PAMA relating to California localities. Section 6.2 describes Acumen's methodological approach for meeting the requirements of PAMA. Finally, section 6.3 provides a summary of the impacts of the California locality update both within and outside of California.

6.1 Requirements of the PAMA Relating to California Localities

Section 220(h) of PAMA imposes a number of requirements pertaining to the calculation of geographic cost adjustments in California. This section of PAMA adds paragraph (6) to Section 1848(e) of the Social Security Act. PAMA changes both the definitions of the GPCI localities for California and the method used to calculate the GPICs for these new localities. These requirements, along with their sub-paragraph designation in Section 1848(e) of SSA, are:

- (1) That new GPCI localities be created for California based on Metropolitan Statistical Areas (MSAs). Specifically, that each California MSA be a locality and that all non-MSA counties in California be grouped together into a remainder locality. Paragraph (6)(A).
- (2) That a transition area be defined. The transition area is to consist of the old rest-of-state locality together with old locality 3. Paragraph (6)(D).
- (3) That, "in an MSA in a transition area," the new payment will be phased in linearly over a period of six years. That is, that both the payment under the new locality structure and the payment under the old locality structure be calculated and that the actual payment be a blend of the payments under these two structures. In the first year, 2017, the actual payment is to be a blend of 1/6 the new payment and 5/6 the old payment. In the second year, 2018, the actual payment is to be a blend of 1/3 the new payment and 2/3 the old payment. By 2021, the payment would be 1/6 the old payment and 5/6 the new payment, and, in 2022 and subsequent years, the payment would be entirely the new payment. Paragraph (6)(B).
- (4) That, for services furnished in the transition area, the GPCI values may not be less under the new locality structure than they are under the old locality structure. This is the "hold-harmless" provision. Paragraph (6)(C).

(5) That, beginning January 1, 2017, GPCIs are to be calculated using the new locality structure in California. Paragraph (6)(E).

The hold-harmless provision and the blending provision of PAMA apply to each GPCI separately. Thus, each constituent county in the transition area must have a PW GPCI, a PE GPCI, and a MP GPCI at least as high as they would be under the old locality system.

Both current GPCI localities and MSAs are defined as aggregations of counties. The next three tables present the grouping of California counties into GPCI localities under the old system, into GPCI localities under the new system, and into the transition area.

Table 6-1: Previous GPCI Localities in California

Locality Number	Name	Counties
3	Marin/Napa/Solano	Marin, Napa, Solano
5	San Francisco	San Francisco
6	San Mateo	San Mateo
7	Oakland/Berkley	Alameda, Contra Costa
9	Santa Clara	Santa Clara
17	Ventura	Ventura
18	Los Angeles	Los Angeles
26	Anaheim/Santa Ana	Orange
99	Old Rest of State	All other counties

Table 6-2: New GPCI Localities in California

MSA Number	Name	Counties
12540	Bakersfield	Kern
17020	Chico	Butte
20940	El Centro	El Centro, Hardin, Larue, Meade
23420	Fresno	Fresno
25260	Hanford-Corcoran	Kings
31080	Los Angeles-Long Beach-Anaheim	Los Angeles, Orange
31460	Madera	Madera
32900	Merced	Merced
33700	Modesto	Modesto
34900	Napa	Napa
37100	Oxnard-Thousand Oaks-Ventura	Ventura
39820	Redding	Shasta
40140	Riverside-San Bernardino-Ontario	Riverside, San Bernardino
40900	Sacramento--Roseville—Arden-Arcade	El Dorado, Placer, Sacramento, Yolo
41500	Salinas	Monterey
41470	San Diego-Carlsbad	San Diego
41860	San Francisco-Oakland-Hayward	Alameda, Contra Costa, Marin, San Francisco, San Mateo
41940	San Jose-Sunnyvale	San Benito, Santa Clara
42020	San Luis Obispo-Paso Robles-Arroyo Grande	San Luis Obispo
42100	Santa Cruz-Watsonville	Santa Cruz

42200	Santa Maria-Santa Barbara	Santa Barbara
42220	Santa Rosa	Santa Rosa
44700	Stockton-Lodi	San Joaquin
46700	Vallejo-Fairfield	Solano
47300	Visalia-Porterfield	Tulare
49700	Yuba City	Sutter, Yuba
	New Rest of State	All other counties

Table 6-3: Transition Area

MSA Number	Name	Counties
12540	Bakersfield	Kern
17020	Chico	Butte
20940	El Centro	El Centro, Hardin, Larue, Meade
23420	Fresno	Fresno
25260	Hanford-Corcoran	Kings
31460	Madera	Madera
32900	Merced	Merced
33700	Modesto	Modesto
34900	Napa	Napa
39820	Redding	Shasta
40140	Riverside-San Bernardino-Ontario	Riverside, San Bernardino
40900	Sacramento--Roseville—Arden-Arcade	El Dorado, Placer, Sacramento, Yolo
41500	Salinas	Monterey
41470	San Diego-Carlsbad	San Diego
41860	San Francisco-Oakland-Hayward	Marin (other counties in this MSA not transition)
41940	San Jose-Sunnyvale-Santa Clara	San Benito
42020	San Luis Obispo-Paso Robles-Arroyo Grande	San Luis Obispo
42100	Santa Cruz-Watsonville	Santa Cruz
42200	Santa Maria-Santa Barbara	Santa Barbara
42220	Santa Rosa	Santa Rosa
44700	Stockton-Lodi	San Joaquin
46700	Vallejo-Fairfield	Solano
47300	Visalia-Porterfield	Tulare
49700	Yuba City	Sutter, Yuba
	New Rest of State	All other counties

6.2 Methodological Approach for Meeting the PAMA Requirements

Implementing the requirements of PAMA can be divided, conceptually, into three steps. First, Acumen calculated the GPCIs, changing the locality structure from the one described in Table 6-1 to the one described in Table 6-2. Then Acumen identified the GPCI counties subject to hold-harmless and blending. Finally, Acumen imposed hold-harmless, blending, and budget neutrality on the raw GPCI values of the identified counties.

6.2.1 Step 1: Calculate Raw GPCIs Under the New and Old Locality Structure

Although there are differences in detail among the three GPCIs, as a general matter, Acumen calculated the raw (before budget neutralization and hold harmless) GPCIs in the following steps:

- (1) Collect data on index components using the best geography available
- (2) Reduce each index component to the county level
- (3) Calculate locality level GPCI by using RVU-weighted average of the county level indexes.

Only small changes were needed to calculate the raw GPCIs using the new California locality definitions. Steps 1-2 were identical under the new GPCI system. Step 3 was modified inasmuch as the way counties were aggregated to localities followed the schema in Table 6-2 instead of the schema in Table 6-1 under the new system.

6.2.2 Step 2: Identify GPCI Counties Subject to Hold-Harmless and Blending

The blending and hold-harmless provisions required by PAMA do not apply to all of the constituent counties in California nor do they apply to the same ones. The hold-harmless provision applies to all of the counties in Table 6-3 above: that is to the entire transition area. The blending provision applies “in an MSA in a transition area.” Thus, the blending provision does not apply to the counties within the new Rest of State locality since it is not an MSA.

The application of the blending and hold-harmless provisions as mandated by Section 220(h) of PAMA to the new locality structure may produce differing GPCI values among counties within the same Medicare locality. For instance, Marin County, part of the San Francisco MSA, is in the transition area while the other counties in the San Francisco MSA are not. Because blending and hold harmless are only applied in transition areas, and therefore only applied in Marin County within the San Francisco locality, the GPCI values will differ in Marin County relative to the remainder of the locality. This situation is paralleled in the San Jose-Sunnyvale-Santa Clara locality, which is comprised of two counties, San Benito, a transition county, and Santa Clara, a non-transition county.

6.2.3 Step 3: Impose Hold-Harmless, Blending, and Budget Neutrality on Raw New GPCI Values

Although PAMA imposes requirements for blending and hold-harmless, it does not explicitly discuss how these provisions are to be reconciled with budget neutrality and the two-year 50/50 phase in of the GPCI. The approach described below details how the law is intended to be interpreted to simultaneously satisfy the new legislative provisions of PAMA Section 220(h) with the preexisting requirements of the GPCI:

- (1) Calculate raw GPCIs under the old localities for the US

- (2) Budget neutralize GPCIs under the old localities for the US
- (3) Calculate raw GPCIs under the new localities for the US
- (4) Budget neutralize GPCIs under the new localities for the US
- (5) Perform the blending provision to the localities in Table 1.3 except the New Rest of State locality and the non-Marin areas San Francisco locality. For those localities which are both hold-harmless and subject to blending, this step does not violate hold-harmless. Each of those localities has either the same value under the new and old localities or a higher value under the new localities, so the blended value will be greater than or equal to the values under the old localities. In CY 2017, for counties subject to blending, the 50/50 two-year phase in of the GPCI is not applied to avoid contradicting the fractions of the old and new payments stipulated in the law.
- (6) For each of PW, PE, and MP GPCI, identify hold-harmless counties whose values are lower under the new localities. Raise these counties' values for each GPCI which is below the corresponding value under the old localities. For CY 2017, the hold harmless value is the GPCI under the old locality structure based on the 50/50 phase in of the GPCI. In other words, the value cannot be below the exact GPCI that would have existed had the law not been enacted.

6.3 California Locality Update Impacts

Acumen assessed the impact of the new California locality definition on the GPCIs within the state of California, as the PAMA 220(h) provisions had no effect on localities outside of California. The results of the fully implemented GPCIs are summarized, respectively, in the remainder of this section. Recall that the results integrate all updated data sources and the updated methodology for calculating Puerto Rico's GPCIs.³⁶

Within California, the updated locality definitions resulted largely in either increases or no change in the GPCIs, with only four out of 58 counties experiencing any decreases to their GAFs. We note of the 58 counties in California, 50 of those counties are designated as transition counties by PAMA and therefore held harmless. However, the other 8 non-transition counties are not held harmless and may potentially experience decreases in their GPCI values as a result of PAMA. Those counties are: Orange, Los Angeles, Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, and Ventura counties. However, the changes to the majority of California counties, including the decreases in non-transition counties, are relatively minor. Overall, as illustrated in Table 6-4 and Table 6-5, 71 percent of California counties experience a change to their GAF of less than 1 percentage point, and the average GAF change is 1.3 percentage points. The largest resulting changes of the California locality update occur in the

³⁶ Note that the results presented in Sections 6.3.1 represent the fully implemented GPCIs. Therefore, they only include Steps 1-7 presented in Section 6.2.3, since these impacts do not include transition years.

California counties' MP GPCIs, with 5 percent of counties experiencing an increase greater than 10 percentage points and a mean increase of 1.6 percentage points.

Table 6-4: Impact Analysis, California Locality Updates on the GPCIs of California Counties

Difference	Number of Counties			
	PW GPCI	PE GPCI	MP GPCI	GAF
All	58	58	58	58
> 0.10	0	4	3	1
0.05 to 0.10	1	5	0	3
0.01 to 0.05	9	6	3	11
0.00 to 0.01	45	39	49	39
-0.01 to 0.00	3	1	3	2
-0.05 to -0.01	0	1	0	2
-0.10 to -0.05	0	2	0	0
< -0.10	0	0	0	0

Table 6-5: Distribution of Impacts of California Locality Updates on the GPCIs of California Counties

Percentile	PW GPCI Difference	PE GPCI Difference	MP GPCI Difference	GAF
Abs. Mean	0.005	0.023	0.016	0.013
Mean	0.004	0.017	0.016	0.010
Min	-0.009	-0.074	-0.002	-0.038
P10	0.000	0.000	0.000	0.000
P25	0.000	0.000	0.000	0.000
P50 (Median)	0.000	0.000	0.000	0.000
P75	0.001	0.011	0.000	0.016
P90	0.014	0.069	0.016	0.040
Max	0.063	0.280	0.382	0.157

7 CALCULATING THE GPCIS WITH THE MOST RECENT RVU DATA

For the calculation of the PW GPCI, PE GPCI, and MP GPCI, Acumen updated the 2011 RVUs used to weight county values with the more recent 2014 RVUs. The 2014 RVUs list the

total PW RVUs, PE RVUs, and MP RVUs for each county. Using these updated weights allows CMS to rely on a more current data source.

Comparing GAF values calculated using the 2011 RVUs against GAF values calculated using the updated 2014 RVUs, this report finds that localities' GAF values experience little change. Table 7-1 and Table 7-2 below show that both within and outside of California, 100 percent of localities' GAF values experience changes of less than 1 percentage point. Additionally, the average locality outside of California and the average California county experience a change in GAF value of 0.1 percentage points. The MP GPCI experiences the largest changes in values relative to the PW GPCI and PE GPCI; the MP GPCI, however, still experiences relatively little change. Specifically, the average non-California locality experiences a change in its MP GPCI of 0.9 percentage points, while the average California county experiences an MP GPCI change of 0.8 percentage points.

Table 7-1: Non-California Locality Impact Analysis, Using Updated RVU Data (GAF)

GAF Difference	# of Localities	% of Localities
All	80	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	0	0.00
0.00 to 0.01	59	73.75
-0.01 to 0.00	21	26.25
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	GAF
Abs. Mean	0.001
Mean	0.000
Min	-0.003
P10	-0.001
P25	-0.001
P50 (Median)	0.000
P75	0.001
P90	0.001
Max	0.006

Table 7-2: Impact Analysis of California Counties, Using Updated RVU Data (GAF)

GAF Difference	# of Counties	% of Counties
All	58	100.00
> 0.10	0	0.00
0.05 to 0.10	0	0.00
0.01 to 0.05	0	0.00
0.00 to 0.01	44	75.86
-0.01 to 0.00	14	24.14
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	GAF
Abs. Mean	0.001
Mean	0.000
Min	-0.002
P10	-0.001
P25	0.000
P50 (Median)	0.000
P75	0.000
P90	0.002
Max	0.003

8 SUMMARY OF FINDINGS: IMPACT OF INCORPORATING ALL UPDATES

Recall that the six modifications proposed for the Eighth GPCI Update for CY 2017 include:

- (1) Updating the 2009-2011 BLS OES wage data used in the calculation of the PW GPCI and PE GPCI with 2011-2014 data;
- (2) Updating the 2006-2008 ACS residential rent data used in the calculation of the PE GPCI with 2009-2013 data;
- (3) Updating the malpractice premium data and methodology to account for missing data used in the calculation of the MP GPCI with 2014 and 2015 premiums;
- (4) Modifying the methodology used to calculate Puerto Rico's GPCIs;
- (5) Adjusting the methodology used to calculate California's GPCIs in response to the PAMA mandated California locality update;
- (6) Replacing the 2011 RVUs used in the calculation of the PW GPCI, PE GPCI, and MP GPCI with 2014 RVUs;

Using these updates will allow CMS to rely on more current data sources and more robust methods to adjust Medicare physician payments based on geographic differences in physician wages, practice expenses, and the price of malpractice insurance while meeting current statutory requirements. This section describes the combined impact of the relevant updates on each GPCI and on the GAF and presents the Eighth Update GPCI and GAF values by locality. Sections 8.1, 8.2, and 8.3 discuss the PW GPCI, PE GPCI, and MP GPCI impacts, respectively. Section 8.4 addresses GAF impacts. Finally, Section 8.5 contains the Eighth Update values by locality under all six modifications. Note that the empirical analyses in the following sections detail calculations of GPCIs after budget neutralization but before statutorily mandated floors. PW GPCI impacts, however, reflect the legislative adjustment requiring the PW GPCI to represent one-quarter of the relative cost differences compared to the national average. Because of the California locality update in the fifth modification, results are segmented into California and non-California tables to enable a more direct comparison between regions.

8.1 Overall PW GPCI Impacts

Only modifications (1), (4), (5), and (6) affect PW GPCI values. Comparing PW GPCIs calculated using the more recent 2011-2014 BLS OES wage data and 2014 RVUs, and with the modifications to the calculation of Puerto Rico and California's methodologies, this report finds that localities' PW GPCIs experience little change. Table 8-1 shows how the three updates affect PW GPCI figures for non-California localities, while Table 8-2 shows how the three updates affect the PW GPCI figures for the 58 California counties. The average locality outside of California experiences a change in its PW GPCI of 0.5 percentage points. Further, 95 percent of

localities experiences a change in their PW GPCI of less than 1 percentage point. Within California, the average county experiences a change in its PW GPCI of 0.8 percent, and 88 percent of localities experiences a change of less than 1 percentage point.

Table 8-1: Non-California Locality Impact Analysis, Using Updated BLS OES Wage Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico GPCIs (PW GPCI)

PW GPCIDifference	# of Localities	% of Localities
All	80	100.00
> 0.10	0	0.00
0.05 to 0.10	1	1.25
0.01 to 0.05	3	3.75
0.00 to 0.01	43	53.75
-0.01 to 0.00	33	41.25
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PW GPCIDifference
Abs. Mean	0.005
Mean	0.002
Min	-0.009
P10	-0.005
P25	-0.002
P50 (Median)	0.001
P75	0.004
P90	0.007
Max	0.085

Table 8-2: California County Impact Analysis, Using Updated BLS OES Wage Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico GPCIs (PW GPCI)

PW GPCIDifference	# of Counties	% of Counties
All	58	100.00
> 0.10	0	0.00
0.05 to 0.10	1	1.72
0.01 to 0.05	6	10.34
0.00 to 0.01	6	10.34
-0.01 to 0.00	45	77.59
-0.05 to -0.01	0	0.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PW GPCIDifference
Abs. Mean	0.008
Mean	-0.002
Min	-0.007
P10	-0.007
P25	-0.007
P50 (Median)	-0.007
P75	-0.001
P90	0.012
Max	0.056

8.2 Overall PE GPCI Impacts

At the PE GPCI level, modifications (1), (2), (4), (5), and (6) are the relevant updates. Comparing PE GPCIs calculated using the more recent 2011-2014 BLS OES wage data, 2009-2013 ACS data, 2014 RVUs, and modified methodologies for calculating Puerto Rico and California’s GPCIs to previously used data sources and methods, this report finds that localities’ PE GPCIs experience little change outside of California but moderate changes within California. Table 8-3 shows how this these updates affects PE GPCI figures for non-California localities,

while Table 8-4 shows how California counties were affected. The average locality outside of California experiences a change in its PE GPCI of 1.1 percentage points. Further, 71 percent of localities experience a change in their PE GPCI of less than 1 percentage point. However, within California, the average county experiences a change in its PE GPCI of 2.8 percentage points, and 14 percent of localities experience a change in their PE GPCI greater than 5 percentage points.

Table 8-3: Non-California Locality Impact Analysis, Using Updated BLS OES Wage Data, Updated ACS Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (PE GPCI)

PE GPCI Difference	# of Localities	% of Localities
All	80	100.00
> 0.10	1	1.25
0.05 to 0.10	0	0.00
0.01 to 0.05	14	17.50
0.00 to 0.01	35	43.75
-0.01 to 0.00	22	27.50
-0.05 to -0.01	8	10.00
-0.10 to -0.05	0	0.00
< -0.10	0	0.00

Percentile	PE GPCI Difference
Abs. Mean	0.011
Mean	0.005
Min	-0.034
P10	-0.011
P25	-0.004
P50 (Median)	0.002
P75	0.007
P90	0.016
Max	0.302

Table 8-4: California County Impact Analysis, Using Updated BLS OES Wage Data, Updated ACS Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (PE GPCI)

PE GPCI Difference	# of Counties	% of Counties
All	58	100.00
> 0.10	3	5.17
0.05 to 0.10	4	6.90
0.01 to 0.05	8	13.79
0.00 to 0.01	1	1.72
-0.01 to 0.00	37	63.79
-0.05 to -0.01	4	6.90
-0.10 to -0.05	1	1.72
< -0.10	0	0.00

Percentile	PE GPCI Difference
Abs. Mean	0.028
Mean	0.009
Min	-0.063
P10	-0.009
P25	-0.009
P50 (Median)	-0.009
P75	0.010
P90	0.065
Max	0.271

8.3 Overall MP GPCI Impacts

At the MP GPCI level, modifications (3), (4), (5) and (6) are the relevant updates. Comparing MP GPICs calculated using the 2014-2015 MP premiums and 2014 RVUs against the indices calculated using the 2011-2012 MP premiums and 2014 RVUs, this report finds that localities' MP GPICs experience large changes. Table 8-5 shows how these updates affect MP GPCI figures for localities outside of California. The average non-California locality experiences a change in its MP GPCI of 11.3 percentage points. Further, 58 percent of localities experience a change in their MP GPCI of greater than 5 percentage points. Table 8-6 shows how these updates affect MP GPCI figures for California counties and finds similar results. The average county in California experiences a change to its MP GPCI of 9.7 percentage points, and 84 percent of counties experience a change in their MP GPCI of greater than 5 percentage points.

Table 8-5: Non-California Locality Impact Analysis, Using Updated MP Premium Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico's GPICs (MP GPCI)

MP GPCIDifference	# of Localities	% of Localities
All	80	100.00
> 0.10	15	18.75
0.05 to 0.10	7	8.75
0.01 to 0.05	14	17.50
0.00 to 0.01	2	2.50
-0.01 to 0.00	6	7.50
-0.05 to -0.01	12	15.00
-0.10 to -0.05	8	10.00
< -0.10	16	20.00

Percentile	MP GPCIDifference
Abs. Mean	0.113
Mean	0.022
Min	-0.339
P10	-0.152
P25	-0.072
P50 (Median)	-0.004
P75	0.075
P90	0.209
Max	0.697

Table 8-6: California County Impact Analysis, Using Updated MP Premium Data, Updated RVU Data, and Assigning 1.0 to Puerto Rico’s GPCIs (MP GPCI)

MP GPCIDifference	# of Counties	% of Counties	Percentile	MP GPCIDifference
All	58	100.00	Abs. Mean	0.097
> 0.10	2	3.45	Mean	-0.077
0.05 to 0.10	0	0.00	Min	-0.214
0.01 to 0.05	1	1.72	P10	-0.096
0.00 to 0.01	1	1.72	P25	-0.096
-0.01 to 0.00	0	0.00	P50 (Median)	-0.096
-0.05 to -0.01	7	12.07	P75	-0.096
-0.10 to -0.05	44	75.86	P90	-0.036
< -0.10	3	5.17	Max	0.286

8.4 Overall GAF Impacts

The six proposed updates considered together have a fairly small effect on locality GAF values. As Table 8-7 below shows, the average non-California locality experiences a change in the value of its GAF of 0.9 percentage points. For 76 percent of localities outside of California, GAF values do not change by more than 1.0 percentage point. The six proposed updates have a slightly larger impact on the GAFs of the counties within California. Table 8-8 shows that the average county experienced a change to its GAF of 1.7 percentage points. Only 10 percent of counties experienced a change in GAF of less than 1 percentage point, but only two counties experienced a change greater than 5 percentage points.

Table 8-7: Non-California Locality Combined Impact Analysis, All GPCI Updates (GAF)

GAF Difference	# of Localities	% of Localities	Percentile	GAF
All	80	100.00	Abs. Mean	0.009
> 0.10	1	1.25	Mean	0.004
0.05 to 0.10	0	0.00	Min	-0.020
0.01 to 0.05	13	16.25	P10	-0.009
0.00 to 0.01	32	40.00	P25	-0.004
-0.01 to 0.00	29	36.25	P50 (Median)	0.001
-0.05 to -0.01	5	6.25	P75	0.006
-0.10 to -0.05	0	0.00	P90	0.014
< -0.10	0	0.00	Max	0.209

Table 8-8: California County Combined Impact Analysis, All GPCI Updates (GAF)

GAF Difference	# of Counties	% of Counties	Percentile	GAF
All	58	100.00	Abs. Mean	0.017
> 0.10	1	1.72	Mean	0.000
0.05 to 0.10	1	1.72	Min	-0.032
0.01 to 0.05	11	18.97	P10	-0.012
0.00 to 0.01	3	5.17	P25	-0.011
-0.01 to 0.00	3	5.17	P50 (Median)	-0.011
-0.05 to -0.01	39	67.24	P75	0.005
-0.10 to -0.05	0	0.00	P90	0.035
< -0.10	0	0.00	Max	0.146

8.5 CY 2017 (Eighth) Update GAF and GPCI Values by Locality

Table 8-9 lists the fully implemented GAF, PW GPCI, PE GPCI, and MP GPCI values for each locality outside of California, incorporating all updates to the data under the Eighth Update described in this report. Recall that these figures are budget neutralized but do not account for any statutorily mandated floors.

Table 8-9: Non-California Eighth Update GAF and GPCI Values, by Locality

Non California Medicare Locality	Eighth Update			Seventh Update			Difference
	PW GPCI	PE GPCI	MP GPCI	PW GPCI	PE GPCI	MP GPCI	GAF
ALABAMA	0.979	0.890	0.492	0.980	0.886	0.611	-0.004
ALASKA	1.031	1.117	0.708	1.030	1.107	0.712	0.005
ARIZONA	0.980	0.971	0.834	0.986	1.000	0.877	-0.018
ARKANSAS	0.971	0.872	0.576	0.966	0.867	0.534	0.007
ATLANTA	0.998	0.997	1.088	0.999	1.005	0.943	0.002
AUSTIN	0.994	1.021	0.747	0.998	1.019	0.766	-0.002
BALTIMORE/SURR. CNTYS	1.023	1.095	1.295	1.023	1.097	1.181	0.004
BEAUMONT	0.985	0.924	0.839	0.987	0.902	0.955	0.003
BRAZORIA	1.020	0.997	0.839	1.019	0.990	0.955	-0.001
CHICAGO	1.008	1.034	1.925	1.016	1.037	2.019	-0.009
COLORADO	0.996	1.018	1.042	1.000	1.011	1.090	-0.001
CONNECTICUT	1.021	1.112	1.255	1.024	1.121	1.232	-0.004
DALLAS	1.012	1.014	0.768	1.018	1.009	0.772	-0.001
DC + MD/VA SUBURBS	1.045	1.205	1.261	1.051	1.205	1.280	-0.004
DELAWARE	1.007	1.019	1.119	1.012	1.031	1.083	-0.007
DETROIT	1.000	0.989	1.691	0.998	0.994	1.328	0.015
EAST ST. LOUIS	0.984	0.936	1.785	0.985	0.934	1.885	-0.004

Non California Medicare Locality	Eighth Update			Seventh Update			Difference
	PW GPCI	PE GPCI	MP GPCI	PW GPCI	PE GPCI	MP GPCI	GAF
FORT LAUDERDALE	0.983	1.012	1.797	0.985	1.030	1.715	-0.006
FORT WORTH	1.007	0.986	0.747	1.005	0.995	0.772	-0.005
GALVESTON	1.020	1.011	0.839	1.019	1.013	0.955	-0.006
HAWAII	1.001	1.146	0.614	1.003	1.162	0.618	-0.009
HOUSTON	1.020	1.012	0.936	1.019	1.006	0.955	0.003
IDAHO	0.962	0.902	0.512	0.958	0.898	0.508	0.004
INDIANA	0.969	0.919	0.379	0.971	0.921	0.617	-0.012
IOWA	0.969	0.907	0.423	0.965	0.896	0.493	0.004
KANSAS	0.966	0.911	0.615	0.964	0.903	0.662	0.002
KENTUCKY	0.974	0.880	0.819	0.973	0.872	0.795	0.005
MANHATTAN	1.052	1.180	1.615	1.052	1.168	1.764	-0.001
METROPOLITAN BOSTON	1.033	1.179	1.061	1.017	1.163	0.617	0.035
METROPOLITAN KANSAS CITY	0.984	0.963	1.073	0.983	0.952	1.025	0.007
METROPOLITAN PHILADELPHIA	1.022	1.074	1.379	1.021	1.087	1.264	0.000
METROPOLITAN ST. LOUIS	0.985	0.959	1.053	0.987	0.955	1.025	0.002
MIAMI	0.990	1.029	2.566	0.991	1.033	2.490	0.001
MINNESOTA	0.998	1.011	0.362	0.994	1.020	0.319	0.000
MISSISSIPPI	0.961	0.870	0.370	0.959	0.864	0.613	-0.007
MONTANA	0.965	0.907	1.631	0.956	0.899	1.226	0.026
NEBRASKA	0.970	0.910	0.318	0.966	0.908	0.362	0.001
NEVADA	1.002	1.017	0.909	1.005	1.051	0.982	-0.020
NEW HAMPSHIRE	0.991	1.045	1.050	1.000	1.058	0.873	-0.003
NEW MEXICO	0.982	0.921	1.247	0.985	0.919	1.161	0.003
NEW ORLEANS	0.987	0.966	1.273	0.989	0.983	1.390	-0.014
NORTH CAROLINA	0.975	0.931	0.695	0.978	0.930	0.768	-0.004
NORTH DAKOTA	0.978	0.913	0.540	0.965	0.886	0.554	0.018
NORTHERN NJ	1.041	1.180	0.938	1.040	1.182	1.090	-0.007
NYC SUBURBS/LONG ISLAND	1.041	1.205	2.149	1.046	1.209	2.215	-0.007
OHIO	0.990	0.917	1.005	0.984	0.918	0.993	0.003
OKLAHOMA	0.961	0.891	0.954	0.960	0.872	0.845	0.013
PORTLAND	1.010	1.054	0.783	1.005	1.049	0.708	0.008
POUGHKPSIE/N NYC SUBURBS	1.016	1.070	1.313	1.010	1.074	1.484	-0.006
PUERTO RICO	0.998	1.007	0.990	0.913	0.705	0.293	0.209
QUEENS	1.052	1.200	2.121	1.052	1.199	2.181	-0.002
REST OF FLORIDA	0.975	0.952	1.358	0.980	0.960	1.315	-0.004
REST OF GEORGIA	0.980	0.899	1.073	0.976	0.899	0.904	0.010
REST OF ILLINOIS	0.982	0.919	1.208	0.974	0.909	1.253	0.006
REST OF LOUISIANA	0.977	0.887	1.199	0.977	0.887	1.205	0.000

Non California Medicare Locality	Eighth Update			Seventh Update			Difference
	PW GPCI	PE GPCI	MP GPCI	PW GPCI	PE GPCI	MP GPCI	GAF
REST OF MAINE	0.970	0.922	0.670	0.967	0.918	0.642	0.005
REST OF MARYLAND	1.009	1.033	1.082	1.015	1.036	0.971	0.000
REST OF MASSACHUSETTS	1.020	1.067	1.061	1.017	1.066	0.617	0.021
REST OF MICHIGAN	0.978	0.919	1.018	0.984	0.920	0.954	-0.001
REST OF MISSOURI	0.961	0.863	0.993	0.952	0.848	0.946	0.013
REST OF NEW JERSEY	1.024	1.123	0.938	1.025	1.125	1.090	-0.008
REST OF NEW YORK	0.987	0.950	0.595	0.986	0.945	0.760	-0.004
REST OF OREGON	0.991	0.967	0.783	0.987	0.967	0.708	0.005
REST OF PENNSYLVANIA	0.990	0.936	1.033	0.991	0.929	0.987	0.005
REST OF TEXAS	0.990	0.938	0.796	0.990	0.920	0.822	0.007
REST OF WASHINGTON	0.997	1.011	0.902	0.996	1.015	0.475	0.017
RHODE ISLAND	1.027	1.050	0.999	1.022	1.053	0.759	0.011
SEATTLE (KING CNTY)	1.027	1.146	0.931	1.025	1.155	0.495	0.015
SOUTH CAROLINA	0.977	0.912	0.553	0.976	0.912	0.715	-0.006
SOUTH DAKOTA	0.961	0.896	0.389	0.954	0.880	0.400	0.010
SOUTHERN MAINE	0.980	1.007	0.670	0.982	1.007	0.642	0.000
SUBURBAN CHICAGO	1.009	1.053	1.565	1.012	1.057	1.636	-0.006
TENNESSEE	0.976	0.901	0.526	0.970	0.898	0.524	0.004
UTAH	0.980	0.927	1.165	0.967	0.922	1.169	0.009
VERMONT	0.979	1.015	0.595	0.981	1.004	0.682	0.001
VIRGIN ISLANDS	0.998	1.007	0.990	0.998	1.005	0.996	0.001
VIRGINIA	0.992	0.986	0.908	0.991	0.983	0.824	0.006
WEST VIRGINIA	0.966	0.857	1.296	0.961	0.836	1.282	0.012
WISCONSIN	0.983	0.957	0.347	0.984	0.955	0.566	-0.009
WYOMING	0.983	0.942	0.880	0.985	0.932	1.219	-0.011

Table 8-10 lists the fully implemented GAF, PW GPCI, PE GPCI, and MP GPCI values for each California county, incorporating all updates to the data under the Eighth Update described in this report. Examining the impacts at the county-level illustrates the impact of the proposed modifications under the updated California locality structure. Recall that these figures are budget neutralized but do not account for any statutorily mandated floors.

Table 8-10: California Eighth Update GAF and GPCI Values, by County

California Counties	Eighth Update			Seventh Update			Difference
	PW GPCI	PE GPCI	MP GPCI	PW GPCI	PE GPCI	MP GPCI	GAF
ALAMEDA	1.075	1.325	0.421	1.061	1.260	0.457	0.035
ALPINE	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
AMADOR	1.020	1.074	0.562	1.027	1.083	0.658	-0.011

California Counties	Eighth Update			Seventh Update			Difference
	PW GPCI	PE GPCI	MP GPCI	PW GPCI	PE GPCI	MP GPCI	GAF
BUTTE	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
CALAVERAS	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
COLUSA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
CONTRA COSTA	1.075	1.325	0.421	1.061	1.260	0.457	0.035
DEL NORTE	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
EL DORADO	1.034	1.110	0.562	1.027	1.083	0.658	0.012
FRESNO	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
GLENN	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
HUMBOLDT	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
IMPERIAL	1.020	1.074	0.578	1.027	1.083	0.658	-0.011
INYO	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
KERN	1.020	1.074	0.673	1.027	1.083	0.658	-0.007
KINGS	1.021	1.074	0.562	1.027	1.083	0.658	-0.011
LAKE	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
LASSEN	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
LOS ANGELES	1.046	1.177	0.694	1.047	1.161	0.908	-0.002
MADERA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
MARIN	1.075	1.325	0.458	1.059	1.286	0.496	0.024
MARIPOSA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
MENDOCINO	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
MERCED	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
MODOC	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
MONO	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
MONTEREY	1.032	1.128	0.562	1.027	1.083	0.658	0.019
NAPA	1.055	1.256	0.458	1.059	1.286	0.496	-0.018
NEVADA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
ORANGE	1.046	1.177	0.694	1.035	1.216	0.908	-0.021
PLACER	1.034	1.110	0.562	1.027	1.083	0.658	0.012
PLUMAS	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
RIVERSIDE	1.021	1.074	0.944	1.027	1.083	0.658	0.005
SACRAMENTO	1.034	1.110	0.562	1.027	1.083	0.658	0.012
SAN BENITO	1.083	1.354	0.562	1.027	1.083	0.658	0.146
SAN BERNARDINO	1.021	1.074	0.944	1.027	1.083	0.658	0.005
SAN DIEGO	1.026	1.157	0.578	1.027	1.083	0.658	0.029
SAN FRANCISCO	1.075	1.325	0.421	1.079	1.388	0.457	-0.032
SAN JOAQUIN	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
SAN LUIS OBISPO	1.020	1.093	0.562	1.027	1.083	0.658	-0.003
SAN MATEO	1.075	1.325	0.421	1.079	1.372	0.416	-0.023
SANTA BARBARA	1.043	1.177	0.562	1.027	1.083	0.658	0.046

California Counties	Eighth Update			Seventh Update			Difference
	PW GPCI	PE GPCI	MP GPCI	PW GPCI	PE GPCI	MP GPCI	GAF
SANTA CLARA	1.083	1.354	0.388	1.088	1.347	0.416	0.000
SANTA CRUZ	1.039	1.248	0.562	1.027	1.083	0.658	0.076
SHASTA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
SIERRA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
SISKIYOU	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
SOLANO	1.055	1.256	0.458	1.059	1.286	0.496	-0.018
SONOMA	1.028	1.186	0.562	1.027	1.083	0.658	0.043
STANISLAUS	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
SUTTER	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
TEHAMA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
TRINITY	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
TULARE	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
TUOLUMNE	1.020	1.074	0.562	1.027	1.083	0.658	-0.011
VENTURA	1.024	1.176	0.673	1.03	1.18	0.834	-0.012
YOLO	1.034	1.110	0.562	1.027	1.083	0.658	0.012
YUBA	1.020	1.074	0.562	1.027	1.083	0.658	-0.011

8.6 Transitional CY 2017-2019 GPCIs and GAFs, by Locality

Tables 8.11-8.14 list the CY 2017-2019 GPCI and GAF values, segmented by California and non-California localities, incorporating all updates described in this report. Examining the CY 2017-2019 values illustrates the impact of PAMA’s Section 220(h) blending provisions as well as the preexisting two-year phase in of the GPCI. Despite PAMA’s requirement that GPCIs in counties in the transition area be blended over a period of six years, Tables 8.11-8.14 only detail impacts over a three year period, since the GPCIs are required to be re-updated in 2020. These figures are budget neutralized and include the statutorily mandated GPCI floors. However, they also show the impacts on the GPCIs and GAFs with and without the 1.0 PW statutorily mandated floor to illustrate the impact of extending the floor compared to removing it.

Table 8-11: Non-California CY 2017-2019 GPCI Values

Medicare Locality	2017			2018				2019			
	PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
ALABAMA	1.000	0.888	0.552	1.000	0.979	0.890	0.492	1.000	0.979	0.890	0.492
ALASKA	1.500	1.112	0.710	1.500	1.500	1.117	0.708	1.500	1.500	1.117	0.708
ARIZONA	1.000	0.986	0.856	1.000	0.980	0.971	0.834	1.000	0.980	0.971	0.834
ARKANSAS	1.000	0.870	0.555	1.000	0.971	0.872	0.576	1.000	0.971	0.872	0.576

Medicare Locality	2017			2018				2019			
	PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
ATLANTA	1.000	1.001	1.016	1.000	0.998	0.997	1.088	1.000	0.998	0.997	1.088
AUSTIN	1.000	1.020	0.757	1.000	0.994	1.021	0.747	1.000	0.994	1.021	0.747
BALTIMORE/SURR. CNTYS	1.023	1.096	1.238	1.023	1.023	1.095	1.295	1.023	1.023	1.095	1.295
BEAUMONT	1.000	0.913	0.897	1.000	0.985	0.924	0.839	1.000	0.985	0.924	0.839
BRAZORIA	1.020	0.994	0.897	1.020	1.020	0.997	0.839	1.020	1.020	0.997	0.839
CHICAGO	1.012	1.036	1.972	1.008	1.008	1.034	1.925	1.008	1.008	1.034	1.925
COLORADO	1.000	1.015	1.066	1.000	0.996	1.018	1.042	1.000	0.996	1.018	1.042
CONNECTICUT	1.023	1.117	1.244	1.021	1.021	1.112	1.255	1.021	1.021	1.112	1.255
DALLAS	1.015	1.012	0.770	1.012	1.012	1.014	0.768	1.012	1.012	1.014	0.768
DC + MD/VA SUBURBS	1.048	1.205	1.271	1.045	1.045	1.205	1.261	1.045	1.045	1.205	1.261
DELAWARE	1.010	1.025	1.101	1.007	1.007	1.019	1.119	1.007	1.007	1.019	1.119
DETROIT	1.000	0.992	1.510	1.000	1.000	0.989	1.691	1.000	1.000	0.989	1.691
EAST ST. LOUIS	1.000	0.935	1.835	1.000	0.984	0.936	1.785	1.000	0.984	0.936	1.785
FORT LAUDERDALE	1.000	1.021	1.756	1.000	0.983	1.012	1.797	1.000	0.983	1.012	1.797
FORT WORTH	1.006	0.991	0.760	1.007	1.007	0.986	0.747	1.007	1.007	0.986	0.747
GALVESTON	1.020	1.012	0.897	1.020	1.020	1.011	0.839	1.020	1.020	1.011	0.839
HAWAII	1.002	1.154	0.616	1.001	1.001	1.146	0.614	1.001	1.001	1.146	0.614
HOUSTON	1.020	1.009	0.946	1.020	1.020	1.012	0.936	1.020	1.020	1.012	0.936
IDAHO	1.000	0.900	0.510	1.000	0.962	0.902	0.512	1.000	0.962	0.902	0.512
INDIANA	1.000	0.920	0.498	1.000	0.969	0.919	0.379	1.000	0.969	0.919	0.379
IOWA	1.000	0.902	0.458	1.000	0.969	0.907	0.423	1.000	0.969	0.907	0.423
KANSAS	1.000	0.907	0.639	1.000	0.966	0.911	0.615	1.000	0.966	0.911	0.615
KENTUCKY	1.000	0.876	0.807	1.000	0.974	0.880	0.819	1.000	0.974	0.880	0.819
MANHATTAN	1.052	1.174	1.690	1.052	1.052	1.180	1.615	1.052	1.052	1.180	1.615
METROPOLITAN BOSTON	1.025	1.171	0.839	1.033	1.033	1.179	1.061	1.033	1.033	1.179	1.061
METROPOLITAN KANSAS CITY	1.000	0.958	1.049	1.000	0.984	0.963	1.073	1.000	0.984	0.963	1.073
METROPOLITAN PHILADELPHIA	1.022	1.081	1.322	1.022	1.022	1.074	1.379	1.022	1.022	1.074	1.379
METROPOLITAN ST. LOUIS	1.000	0.957	1.039	1.000	0.985	0.959	1.053	1.000	0.985	0.959	1.053
MIAMI	1.000	1.031	2.528	1.000	0.990	1.029	2.566	1.000	0.990	1.029	2.566
MINNESOTA	1.000	1.016	0.341	1.000	0.998	1.011	0.362	1.000	0.998	1.011	0.362
MISSISSIPPI	1.000	0.867	0.492	1.000	0.961	0.870	0.370	1.000	0.961	0.870	0.370
MONTANA	1.000	1.000	1.429	1.000	0.965	1.000	1.631	1.000	0.965	1.000	1.631
NEBRASKA	1.000	0.909	0.340	1.000	0.970	0.910	0.318	1.000	0.970	0.910	0.318
NEVADA	1.004	1.034	0.946	1.002	1.002	1.017	0.909	1.002	1.002	1.017	0.909
NEW HAMPSHIRE	1.000	1.052	0.962	1.000	0.991	1.045	1.050	1.000	0.991	1.045	1.050
NEW MEXICO	1.000	0.920	1.204	1.000	0.982	0.921	1.247	1.000	0.982	0.921	1.247
NEW ORLEANS	1.000	0.975	1.332	1.000	0.987	0.966	1.273	1.000	0.987	0.966	1.273

Medicare Locality	2017			2018				2019			
	PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
NORTH CAROLINA	1.000	0.931	0.732	1.000	0.975	0.931	0.695	1.000	0.975	0.931	0.695
NORTH DAKOTA	1.000	1.000	0.547	1.000	0.978	1.000	0.540	1.000	0.978	1.000	0.540
NORTHERN NJ	1.041	1.181	1.014	1.041	1.041	1.180	0.938	1.041	1.041	1.180	0.938
NYC SUBURBS/LONG ISLAND	1.044	1.207	2.182	1.041	1.041	1.205	2.149	1.041	1.041	1.205	2.149
OHIO	1.000	0.918	0.999	1.000	0.990	0.917	1.005	1.000	0.990	0.917	1.005
OKLAHOMA	1.000	0.882	0.900	1.000	0.961	0.891	0.954	1.000	0.961	0.891	0.954
PORTLAND	1.008	1.052	0.746	1.010	1.010	1.054	0.783	1.010	1.010	1.054	0.783
POUGHKPSIE/NY SUBURBS	1.013	1.072	1.399	1.016	1.016	1.070	1.313	1.016	1.016	1.070	1.313
PUERTO RICO	1.000	0.856	0.642	1.000	0.998	1.007	0.990	1.000	0.998	1.007	0.990
QUEENS	1.052	1.200	2.151	1.052	1.052	1.200	2.121	1.052	1.052	1.200	2.121
REST OF FLORIDA	1.000	0.956	1.337	1.000	0.975	0.952	1.358	1.000	0.975	0.952	1.358
REST OF GEORGIA	1.000	0.899	0.989	1.000	0.980	0.899	1.073	1.000	0.980	0.899	1.073
REST OF ILLINOIS	1.000	0.914	1.231	1.000	0.982	0.919	1.208	1.000	0.982	0.919	1.208
REST OF LOUISIANA	1.000	0.887	1.202	1.000	0.977	0.887	1.199	1.000	0.977	0.887	1.199
REST OF MAINE	1.000	0.920	0.656	1.000	0.970	0.922	0.670	1.000	0.970	0.922	0.670
REST OF MARYLAND	1.012	1.035	1.027	1.009	1.009	1.033	1.082	1.009	1.009	1.033	1.082
REST OF MASSACHUSETTS	1.019	1.067	0.839	1.020	1.020	1.067	1.061	1.020	1.020	1.067	1.061
REST OF MICHIGAN	1.000	0.920	0.986	1.000	0.978	0.919	1.018	1.000	0.978	0.919	1.018
REST OF MISSOURI	1.000	0.856	0.970	1.000	0.961	0.863	0.993	1.000	0.961	0.863	0.993
REST OF NEW JERSEY	1.025	1.124	1.014	1.024	1.024	1.123	0.938	1.024	1.024	1.123	0.938
REST OF NEW YORK	1.000	0.948	0.678	1.000	0.987	0.950	0.595	1.000	0.987	0.950	0.595
REST OF OREGON	1.000	0.967	0.746	1.000	0.991	0.967	0.783	1.000	0.991	0.967	0.783
REST OF PENNSYLVANIA	1.000	0.933	1.010	1.000	0.990	0.936	1.033	1.000	0.990	0.936	1.033
REST OF TEXAS	1.000	0.929	0.809	1.000	0.990	0.938	0.796	1.000	0.990	0.938	0.796
REST OF WASHINGTON	1.000	1.013	0.689	1.000	0.997	1.011	0.902	1.000	0.997	1.011	0.902
RHODE ISLAND	1.025	1.052	0.879	1.027	1.027	1.050	0.999	1.027	1.027	1.050	0.999
SEATTLE (KING CNTY)	1.026	1.151	0.713	1.027	1.027	1.146	0.931	1.027	1.027	1.146	0.931
SOUTH CAROLINA	1.000	0.912	0.634	1.000	0.977	0.912	0.553	1.000	0.977	0.912	0.553
SOUTH DAKOTA	1.000	1.000	0.395	1.000	0.961	1.000	0.389	1.000	0.961	1.000	0.389
SOUTHERN MAINE	1.000	1.007	0.656	1.000	0.980	1.007	0.670	1.000	0.980	1.007	0.670
SUBURBAN CHICAGO	1.011	1.055	1.601	1.009	1.009	1.053	1.565	1.009	1.009	1.053	1.565
TENNESSEE	1.000	0.900	0.525	1.000	0.976	0.901	0.526	1.000	0.976	0.901	0.526

Medicare Locality	2017			2018				2019			
	PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
UTAH	1.000	0.925	1.167	1.000	0.980	0.927	1.165	1.000	0.980	0.927	1.165
VERMONT	1.000	1.010	0.639	1.000	0.979	1.015	0.595	1.000	0.979	1.015	0.595
VIRGIN ISLANDS	1.000	1.006	0.993	1.000	0.998	1.007	0.990	1.000	0.998	1.007	0.990
VIRGINIA	1.000	0.985	0.866	1.000	0.992	0.986	0.908	1.000	0.992	0.986	0.908
WEST VIRGINIA	1.000	0.847	1.289	1.000	0.966	0.857	1.296	1.000	0.966	0.857	1.296
WISCONSIN	1.000	0.956	0.457	1.000	0.983	0.957	0.347	1.000	0.983	0.957	0.347
WYOMING	1.000	1.000	1.050	1.000	0.983	1.000	0.880	1.000	0.983	1.000	0.880

Table 8-12: California CY 2017-2019 GPCI Values

Medicare Locality	Locality Number	2017			2018				2019			
		PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
BAKERSFIELD	54	1.024	1.079	0.610	1.020	1.020	1.074	0.599	1.020	1.020	1.074	0.618
CHICO	55	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
EL CENTRO	71	1.024	1.079	0.610	1.020	1.020	1.074	0.567	1.020	1.020	1.074	0.570
FRESNO	56	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
HANFORD-CORCORAN	57	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.021	1.021	1.074	0.562
LOS ANGELES-LONG BEACH-ANAHEIM (LOS ANGELES CNTY)	18*	1.047	1.169	0.801	1.046	1.046	1.177	0.694	1.046	1.046	1.177	0.694
LOS ANGELES-LONG BEACH-ANAHEIM (ORANGE CNTY)	26*	1.047	1.169	0.801	1.046	1.046	1.177	0.694	1.046	1.046	1.177	0.694
MADERA	58	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
MERCED	59	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
MODESTO	60	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
NAPA	51	1.057	1.271	0.477	1.055	1.055	1.256	0.458	1.055	1.055	1.256	0.458
OXNARD-THOUSAND OAKS-VENTURA	17*	1.027	1.178	0.754	1.024	1.024	1.176	0.673	1.024	1.024	1.176	0.673
REDDING	61	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
REST OF CALIFORNIA	75	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
RIVERSIDE-SAN BERNARDINO-ONTARIO	62	1.024	1.079	0.626	1.020	1.020	1.074	0.689	1.021	1.021	1.074	0.753
SACRAMENTO--ROSEVILLE--ARDEN-ARCADE	63	1.024	1.080	0.610	1.025	1.025	1.086	0.562	1.027	1.027	1.092	0.562
SALINAS	64	1.024	1.083	0.610	1.024	1.024	1.092	0.562	1.026	1.026	1.101	0.562
SAN DIEGO-CARLSBAD	72	1.024	1.088	0.610	1.022	1.022	1.102	0.567	1.023	1.023	1.116	0.570
SAN FRANCISCO-	05*	1.077	1.349	0.419	1.075	1.075	1.325	0.421	1.075	1.075	1.325	0.421

Medicare Locality	Locality Number	2017			2018				2019			
		PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
OAKLAND-HAYWARD (SAN FRANCISCO CNTY)												
SAN FRANCISCO-OAKLAND-HAYWARD (SAN MATEO CNTY)	06*	1.077	1.349	0.419	1.075	1.075	1.325	0.421	1.075	1.075	1.325	0.421
SAN FRANCISCO-OAKLAND-HAYWARD (ALAMEDA/ CONTRA COSTA CNTY)	07*	1.077	1.349	0.419	1.075	1.075	1.325	0.421	1.075	1.075	1.325	0.421
SAN FRANCISCO-OAKLAND-HAYWARD (MARIN CNTY)	52	1.058	1.271	0.477	1.062	1.062	1.279	0.458	1.065	1.065	1.291	0.458
SAN JOSE-SUNNYVALE-SANTA CLARA (SANTA CLARA CNTY)	09*	1.086	1.351	0.402	1.083	1.083	1.354	0.388	1.083	1.083	1.354	0.388
SAN JOSE-SUNNYVALE-SANTA CLARA (SAN BENITO CNTY)	65	1.031	1.121	0.610	1.041	1.041	1.167	0.562	1.052	1.052	1.214	0.562
SAN LUIS OBISPO-PASO ROBLES-ARROYO GRANDE	73	1.024	1.079	0.610	1.020	1.020	1.080	0.562	1.020	1.020	1.084	0.562
SANTA CRUZ-WATSONVILLE	66	1.024	1.103	0.610	1.026	1.026	1.132	0.562	1.030	1.030	1.161	0.562
SANTA MARIA-SANTA BARBARA	74	1.024	1.091	0.610	1.028	1.028	1.108	0.562	1.032	1.032	1.126	0.562
SANTA ROSA	67	1.024	1.093	0.610	1.023	1.023	1.111	0.562	1.024	1.024	1.130	0.562

Medicare Locality	Locality Number	2017			2018				2019			
		PW GPCI with 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI	PW GPCI with 1.0 Floor	PW GPCI without 1.0 Floor	PE GPCI	MP GPCI
STOCKTON-LODI	68	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
VALLEJO-FAIRFIELD	53	1.057	1.271	0.477	1.055	1.055	1.256	0.458	1.055	1.055	1.256	0.458
VISALIA-PORTERVILLE	69	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562
YUBA CITY	70	1.024	1.079	0.610	1.020	1.020	1.074	0.562	1.020	1.020	1.074	0.562

*Denotes localities that are not in the transition area.

Table 8-13: Non-California CY 2017-2019 GAF Values

Medicare Locality	2017	2018 with 1.0 PW Floor	2018 without 1.0 PW Floor	2019 with 1.0 PW Floor	2019 without 1.0 PW Floor
ALABAMA	0.931	0.929	0.918	0.929	0.918
ALASKA	1.292	1.294	1.294	1.294	1.294
ARIZONA	0.988	0.980	0.970	0.980	0.970
ARKANSAS	0.923	0.924	0.910	0.924	0.910
ATLANTA	1.001	1.002	1.001	1.002	1.001
AUSTIN	0.999	0.999	0.995	0.999	0.995
BALTIMORE/SURR. CNTYS	1.065	1.067	1.067	1.067	1.067
BEAUMONT	0.957	0.959	0.951	0.959	0.951
BRAZORIA	1.003	1.002	1.002	1.002	1.002
CHICAGO	1.064	1.059	1.059	1.059	1.059
COLORADO	1.010	1.010	1.008	1.010	1.008
CONNECTICUT	1.075	1.072	1.072	1.072	1.072
DALLAS	1.003	1.002	1.002	1.002	1.002
DC + MD/VA SUBURBS	1.128	1.126	1.126	1.126	1.126
DELAWARE	1.021	1.017	1.017	1.017	1.017
DETROIT	1.018	1.025	1.025	1.025	1.025
EAST ST. LOUIS	1.007	1.005	0.997	1.005	0.997
FORT LAUDERDALE	1.042	1.040	1.031	1.040	1.031
FORT WORTH	0.989	0.986	0.986	0.986	0.986
GALVESTON	1.011	1.008	1.008	1.008	1.008
HAWAII	1.054	1.049	1.049	1.049	1.049
HOUSTON	1.012	1.013	1.013	1.013	1.013
IDAHO	0.934	0.935	0.916	0.935	0.916
INDIANA	0.943	0.937	0.921	0.937	0.921
IOWA	0.933	0.934	0.918	0.934	0.918
KANSAS	0.943	0.944	0.926	0.944	0.926

Medicare Locality	2017	2018 with 1.0 PW Floor	2018 without 1.0 PW Floor	2019 with 1.0 PW Floor	2019 without 1.0 PW Floor
KENTUCKY	0.936	0.938	0.925	0.938	0.925
MANHATTAN	1.134	1.134	1.134	1.134	1.134
METROPOLITAN BOSTON	1.082	1.100	1.100	1.100	1.100
METROPOLITAN KANSAS CITY	0.983	0.987	0.978	0.987	0.978
METROPOLITAN PHILADELPHIA	1.061	1.061	1.061	1.061	1.061
METROPOLITAN ST. LOUIS	0.982	0.984	0.976	0.984	0.976
MIAMI	1.080	1.080	1.075	1.080	1.075
MINNESOTA	0.979	0.978	0.977	0.978	0.977
MISSISSIPPI	0.919	0.915	0.895	0.915	0.895
MONTANA	1.018	1.027	1.009	1.027	1.009
NEBRASKA	0.931	0.930	0.915	0.930	0.915
NEVADA	1.015	1.005	1.005	1.005	1.005
NEW HAMPSHIRE	1.022	1.022	1.018	1.022	1.018
NEW MEXICO	0.973	0.975	0.966	0.975	0.966
NEW ORLEANS	1.003	0.996	0.990	0.996	0.990
NORTH CAROLINA	0.958	0.956	0.943	0.956	0.943
NORTH DAKOTA	0.981	0.980	0.969	0.980	0.969
NORTHERN NJ	1.103	1.099	1.099	1.099	1.099
NYC SUBURBS/LONG ISLAND	1.166	1.162	1.162	1.162	1.162
OHIO	0.963	0.963	0.958	0.963	0.958
OKLAHOMA	0.943	0.949	0.929	0.949	0.929
PORTLAND	1.016	1.020	1.020	1.020	1.020
POUGHKPSIE/N NYC SUBURBS	1.056	1.053	1.053	1.053	1.053
PUERTO RICO	0.920	1.003	1.002	1.003	1.002
QUEENS	1.166	1.164	1.164	1.164	1.164
REST OF FLORIDA	0.995	0.994	0.981	0.994	0.981
REST OF GEORGIA	0.954	0.958	0.948	0.958	0.948
REST OF ILLINOIS	0.971	0.973	0.963	0.973	0.963
REST OF LOUISIANA	0.958	0.958	0.946	0.958	0.946
REST OF MAINE	0.949	0.951	0.936	0.951	0.936
REST OF MARYLAND	1.023	1.023	1.023	1.023	1.023
REST OF MASSACHUSETTS	1.033	1.043	1.043	1.043	1.043
REST OF MICHIGAN	0.964	0.964	0.953	0.964	0.953
REST OF MISSOURI	0.934	0.938	0.918	0.938	0.918
REST OF NEW JERSEY	1.069	1.065	1.065	1.065	1.065
REST OF NEW YORK	0.963	0.960	0.954	0.960	0.954
REST OF OREGON	0.974	0.976	0.971	0.976	0.971

Medicare Locality	2017	2018 with 1.0 PW Floor	2018 without 1.0 PW Floor	2019 with 1.0 PW Floor	2019 without 1.0 PW Floor
REST OF PENNSYLVANIA	0.970	0.973	0.968	0.973	0.968
REST OF TEXAS	0.960	0.963	0.958	0.963	0.958
REST OF WASHINGTON	0.992	1.001	0.999	1.001	0.999
RHODE ISLAND	1.031	1.036	1.036	1.036	1.036
SEATTLE (KING CNTY)	1.069	1.076	1.076	1.076	1.076
SOUTH CAROLINA	0.945	0.941	0.930	0.941	0.930
SOUTH DAKOTA	0.974	0.974	0.954	0.974	0.954
SOUTHERN MAINE	0.988	0.989	0.979	0.989	0.979
SUBURBAN CHICAGO	1.056	1.053	1.053	1.053	1.053
TENNESSEE	0.935	0.935	0.923	0.935	0.923
UTAH	0.974	0.974	0.964	0.974	0.964
VERMONT	0.989	0.989	0.979	0.989	0.979
VIRGIN ISLANDS	1.002	1.003	1.002	1.003	1.002
VIRGINIA	0.988	0.990	0.986	0.990	0.986
WEST VIRGINIA	0.944	0.949	0.931	0.949	0.931
WISCONSIN	0.957	0.953	0.944	0.953	0.944
WYOMING	1.002	0.995	0.986	0.995	0.986

Table 8-14: California CY 2017-2019 GAF Values

Medicare Locality	Locality Number	2017	2018 with 1.0 PW Floor	2018 without 1.0 PW Floor	2019 with 1.0 PW Floor	2019 without 1.0 PW Floor
BAKERSFIELD	54	1.031	1.026	1.026	1.027	1.027
CHICO	55	1.031	1.025	1.025	1.025	1.025
EL CENTRO	71	1.031	1.025	1.025	1.025	1.025
FRESNO	56	1.031	1.025	1.025	1.025	1.025
HANFORD-CORCORAN	57	1.031	1.025	1.025	1.025	1.025
LOS ANGELES-LONG BEACH-ANAHEIM (LOS ANGELES CNTY)	18*	1.091	1.090	1.090	1.090	1.090
LOS ANGELES-LONG BEACH-ANAHEIM (ORANGE CNTY)	26*	1.091	1.090	1.090	1.090	1.090
MADERA	58	1.031	1.025	1.025	1.025	1.025
MERCED	59	1.031	1.025	1.025	1.025	1.025
MODESTO	60	1.031	1.025	1.025	1.025	1.025
NAPA	51	1.128	1.119	1.119	1.119	1.119
OXNARD-THOUSAND OAKS-VENTURA	17*	1.083	1.077	1.077	1.077	1.077
REDDING	61	1.031	1.025	1.025	1.025	1.025

Medicare Locality	Locality Number	2017	2018 with 1.0 PW Floor	2018 without 1.0 PW Floor	2019 with 1.0 PW Floor	2019 without 1.0 PW Floor
REST OF CALIFORNIA	75	1.031	1.025	1.025	1.025	1.025
RIVERSIDE-SAN BERNARDINO-ONTARIO	62	1.032	1.030	1.030	1.033	1.033
SACRAMENTO--ROSEVILLE--ARDEN-ARCADE	63	1.031	1.032	1.032	1.036	1.036
SALINAS	64	1.033	1.035	1.035	1.040	1.040
SAN DIEGO-CARLSBAD	72	1.035	1.038	1.038	1.045	1.045
SAN FRANCISCO-OAKLAND-HAYWARD (SAN FRANCISCO CNTY)	05*	1.171	1.159	1.159	1.159	1.159
SAN FRANCISCO-OAKLAND-HAYWARD (SAN MATEO CNTY)	06*	1.171	1.159	1.159	1.159	1.159
SAN FRANCISCO-OAKLAND-HAYWARD (ALAMEDA/ CONTRA COSTA CNTY)	07*	1.171	1.159	1.159	1.159	1.159
SAN FRANCISCO-OAKLAND-HAYWARD (MARIN CNTY)	52	1.129	1.133	1.133	1.140	1.140
SAN JOSE-SUNNYVALE-SANTA CLARA (SANTA CLARA CNTY)	09*	1.175	1.175	1.175	1.175	1.175
SAN JOSE-SUNNYVALE-SANTA CLARA (SAN BENITO CNTY)	65	1.053	1.077	1.077	1.104	1.104
SAN LUIS OBISPO-PASO ROBLES-ARROYO GRANDE	73	1.031	1.027	1.027	1.029	1.029
SANTA CRUZ-WATSONVILLE	66	1.042	1.054	1.054	1.069	1.069
SANTA MARIA-SANTA BARBARA	74	1.036	1.044	1.044	1.054	1.054
SANTA ROSA	67	1.037	1.043	1.043	1.052	1.052
STOCKTON-LODI	68	1.031	1.025	1.025	1.025	1.025
VALLEJO-FAIRFIELD	53	1.128	1.119	1.119	1.119	1.119
VISALIA-PORTERVILLE	69	1.031	1.025	1.025	1.025	1.025
YUBA CITY	70	1.031	1.025	1.025	1.025	1.025

*Denotes localities that are not in the transition area

REFERENCES

CMS (Centers for Medicare and Medicaid Services). "Estimated Sustainable Growth Rate and Conversion Factor, for Medicare Payments to Physicians in 2013." March

2012. <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/SustainableGRatesConFact/downloads/sgr2013p.pdf>
- CMS (Centers for Medicare and Medicaid Services). "Market Basket Data." Accessed February 19, 2013. <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareProgramRatesStats/MarketBasketData.html>
- Edmunds, Margaret, ed. and Frank A. Sloan, ed. "Geographic Adjustment in Medicare Payment: Phase I: Improving Accuracy, Second Edition." Board on Health Care Services. Institute of Medicine. September 2011. <http://www.iom.edu/Reports/2011/Geographic-Adjustment-in-Medicare-Payment-Phase-I-Improving-Accuracy.aspx>
- Hahn, Jim. "Medicare Physician Payment Updates and the Sustainable Growth Rate (SGR) System." Congressional Research Service. March 2014. <http://www.ncsl.org/documents/statefed/health/SGRfaqs3212014.pdf>
- MaCurdy, Thomas, Jason Shafrin, Mallory Bounds, and David Pham. "Revisions to the Sixth Update of the Geographic Practice Cost Index: Final Report." Burlingame, CA: Acumen, LLC. October 2011.
- MaCurdy, Thomas, Jason Shafrin, Thomas DeLeire, Jed DeVaro, Mallory Bounds, David Pham, and Arthur Chia. "Geographic Adjustment of Medicare Payments to Physicians: Evaluation of IOM Recommendations." Burlingame, CA: Acumen, LLC. July 2012.
- "Medicare Program; Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2011." *Federal Register* 75 (13 July 2010): 40040. <http://federalregister.gov/a/2010-15900>
- O'Brien-Strain, Margaret, West Addison, and Nick Theobald. "Final Report on the Sixth Update of the Geographic Practice Cost Index for the Medicare Physician Fee Schedule." Burlingame, CA: Acumen, LLC. November 2010.
- U.S. Congress. "American Taxpayer Relief Act of 2012." 112th Congress, Second Session. January 2012.
- U.S. GAO (Government Accountability Office). "Medicare Physician Fees: Geographic Adjustment Indices are Valid in Design, but Data and Methods Need Refinement." GAO-06-119. March 2005.

APPENDIX A: PW GPCI OCCUPATION LIST

There are over 800 occupations represented in the OES, each of which fits into a broader occupation group. Using the SOC system, these broader classifications are identified by SOC codes ending with "0000". For example, SOC code 17-0000 identifies all architecture and engineering occupations, and SOC code 17-1011 identifies architects (except landscape and naval architects), which is one of the 36 individual occupations within the broader architecture and engineering classification. Table A.1 below lists the seven occupation groups used for creating the PW GPCI; this table lists the occupation group, the SOC code(s) that comprise each group, and finally occupation title(s) corresponding to each SOC code. Of the seven occupation groups used for creating the PW GPCI, four contain only a single occupation: Education, Training, and Library; Registered Nurses; Pharmacists; and Art, Design, Entertainment, Sports, and Media. The remaining three occupation groups used to construct the PW GPCI consist of a collection of individual occupations that either cover multiple classifications or are a subset of classifications.

Table A.1: Occupations Used for PW GPCI Calculation

Occupation Group	SOC Code	Occupation Title
Architecture and Engineering	17-1011	Architects, Except Landscape and Naval
	17-1012	Landscape Architects
	17-1021	Cartographers and Photogrammetrists
	17-1022	Surveyors
	17-2011	Aerospace engineers
	17-2021	Agricultural engineers
	17-2031	Biomedical engineers
	17-2041	Chemical engineers
	17-2051	Civil engineers
	17-2061	Computer hardware engineers
	17-2071	Electrical Engineers
	17-2072	Electronics Engineers, Except Computer
	17-2081	Environmental engineers
	17-2111	Health and Safety Engineers
	17-2112	Industrial Engineers
	17-2121	Marine engineers and naval architects
	17-2131	Materials engineers
	17-2141	Mechanical engineers
	17-2151	Mining and geological engineers, including mining safety engineers
	17-2161	Nuclear engineers
17-2171	Petroleum engineers	
17-2199	Engineers, all other	
17-3031	Surveying and mapping technicians	
Computer, Mathematical, Life, and Physical Science	15-1111	Computer and Information Research Scientists
	15-1121	Computer Systems Analysts
	15-1131	Computer Programmers
	15-1132	Software Developers, Applications
	15-1133	Software Developers, Systems Software
	15-1141	Database Administrators

Occupation Group	SOC Code	Occupation Title
Computer, Mathematical, Life, and Physical Science	15-1142	Network and Computer Systems Administrators*
	15-1150	Computer Support Specialists
	15-1179	Information Security Analysts, Web Developers, and Computer Network Architects
	15-1799	Computer Occupations, All Other*
	15-2011	Actuaries
	15-2021	Mathematicians
	15-2031	Operations research analysts
	15-2041	Statisticians
	15-2091	Mathematical Technicians
	15-2099	Mathematical Science Occupations, All Other
	19-1011	Animal Scientists
	19-1012	Food Scientists and Technologists
	19-1013	Social and Plant Scientists
	19-1021	Biochemists and Biophysicists
	19-1022	Microbiologists
	19-1023	Zoologists and Wildlife Biologists
	19-1029	Biological Scientists, All Other
	19-1031	Conservation Scientists
	19-1032	Foresters
	19-1041	Epidemiologists
	19-1042	Medical Scientists, Except Epidemiologists
	19-2011	Astronomers
	19-2012	Physicists
	19-2021	Atmospheric and Space Scientists
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2041	Environmental Scientists and Specialists, Including Health
	19-2042	Geoscientists, Except Hydrologists and Geographers
	19-2043	Hydrologists
	19-2099	Physical Scientists, all other
	Social Science, Community and Social Service, and Legal	19-3011
19-3022		Survey researchers
19-3031		Clinical, Counseling, and School Psychologists
19-3032		Industrial-Organization Psychologists
19-3039		Psychologists, All Other
19-3041		Sociologists
19-3051		Urban and regional planners
19-3091		Anthropologists and Archeologists
19-3092		Geographers
19-3093		Historians
19-3094		Historians
19-3099		Social Scientists, All Other
19-4011		Agricultural and food science technicians
19-4021		Biological technicians
19-4031		Chemical technicians
19-4041		Geological and petroleum technicians
19-4051		Nuclear technicians
19-4061		Social science research assistants
19-4091		Environmental Science and Protection Technicians, Including Health
19-4092		Forensic Science Technicians
19-4093	Forest and Conservation Technicians	

Occupation Group	SOC Code	Occupation Title
Social Science, Community and Social Service, and Legal	19-4099	Life, Physical, and Social Science Technicians, All Other
	21-1011	Substance Abuse and Behavioral Disorder Counselors
	21-1012	Educational, Guidance, School, and Vocational Counselors
	21-1013	Marriage and Family Therapists
	21-1014	Mental Health Counselors
	21-1015	Rehabilitation Counselors
	21-1019	Counselors, All Other
	21-1021	Child, Family, and School Social Workers
	21-1022	Healthcare Social Workers
	21-1023	Mental Health and Substance Abuse Social Workers
	21-1029	Social Workers, All Other
	21-1091	Health Educators
	21-1092	Probation Officers and Correctional Treatment Specialists
	21-1093	Social and Human Service Assistants
	21-2011	Clergy
	21-2021	Directors, religious activities and education
	21-2099	Religious workers, all other
	23-1011	Lawyers
	23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers
	23-1022	Arbitrators, Mediators, and Conciliators
	23-1023	Judges, Magistrate Judges, and Magistrates
	23-2011	Paralegals and legal assistants
23-2091	Court Reporters	
23-2093	Title Examiners, Abstractors, and Searchers	
23-2099	Legal Support Workers, All Other	
Education, Training, and Library	25-0000	Education, Training, and Library Occupations
Registered Nurses	29-1141	Registered Nurses
Pharmacists	29-1051	Pharmacists
Art, Design, Entertainment, Sports, and Media	27-0000	Arts, Design, Entertainment, Sports, and Media