



Interim Report on Malpractice RVUs for the CY 2010 Medicare Physician Fee Schedule Proposed Rule

Margaret O'Brien-Strain
Sean McClellan
Steve Frances



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

This page is intentionally left blank.

TABLE OF CONTENTS

1	Introduction.....	1
2	Malpractice Premium Data Collection.....	3
2.1	Premium Data Sought	3
2.2	State Rate Filings Data Collection.....	4
2.3	Additional Rate Information	7
2.4	Constructing the Malpractice Premium Data Set.....	9
3	Updating the Malpractice RVUs.....	11
3.1	Creating Raw Malpractice RVUs	12
3.2	Defining Specialties	17
3.3	Updating Technical Component Data.....	26
3.4	Updating CPTs without 2008 MTUS Values	29
4	Impact of the Update.....	31
4.1	Overall Impact and Impact by CPT Code Type.....	31
4.2	Impact by Specialty.....	37
5	Appendix.....	39
5.1	Data Collection Gaps and Alternative Data Sources	39
5.2	American Medical Association Normalized Premiums Comparison	42

LIST OF TABLES

Table 2.1: Market Share and Number of Rate Filings Collected by State, 2006 and 2007	5
Table 2.2: States that Did Not Provide Rate Filing Data.....	7
Table 2.3: Patient Compensation Fund Overview	8
Table 3.1: Data Sources Overview	11
Table 3.2: Number of State Rate Filings Collected for Each Specialty.....	17
Table 3.3: Reassigned Specialties.....	18
Table 3.4: CPT Code Surgery Classes.....	19
Table 3.5: Number of State Rate Filings by Specialty and Surgery Class	20
Table 3.6: Summary of Approaches to Defining Premiums by Surgical Class.....	22
Table 3.7: Summary of Approaches to Defining Premiums by OB Class.....	25
Table 3.8: Professional, Technical and Global CPT Distinction	26
Table 3.9: Example CPT Code with Modifiers	27
Table 4.1: Distribution of Updated BN MP RVU Values by Mod/Indicator	32
Table 4.2: Distribution of Updated BN MP RVU Values by Surgery Class.....	32
Table 4.3: Percent Change in MP RVU Across CPT Codes Values by Mod/Indicator	34
Table 4.4: Percent Change in MP RVU Across CPT Codes by Surgery Class	34
Table 4.5: Percent Change Total RVU, 2008 to Updated BN Values by Mod/Indicator.....	36
Table 4.6: Percent Change Total RVU, 2008 to Updated BN by Surgery Class.....	36
Table 4.7: Impact by Specialty	37
Table 5.1: Explanations for States with Low Collected Market Shares	39
Table 5.4: Comparison; Acumen and AMA Average PLI Premiums	42

1 INTRODUCTION

Since January 1, 1992, Medicare has paid for physicians' services under section 1848 of the Social Security Act (the Act), "Payment for Physicians' Services." The Act requires that physician payments be based on national uniform relative value units based on the relative resources used in furnishing a service. As required by Section 1848(c), the Centers for Medicare and Medicaid Services (CMS) establish resource-based malpractice relative value units (MP RVUs) as part of the Resource-Based Relative Value Scale (RBRVS) method for reimbursing physicians. Section 1848(c)(2)(B)(i) of the Act requires that CMS review all RVUs no less often than every 5 years.

Like the geographic practice cost indices (GPCIs), which are designed to adjust reimbursements for differing regional work, practice and malpractice costs, RVUs are split into three components: the physician work RVU_W , the practice expense RVU_{PE} and the malpractice insurance RVU_{MP} . While the GPCIs adjust payments for geographic variation, RVUs distinguish among services in the cost of providing services. The equation below demonstrates how these three RVU components combine with the GPCIs and a conversion factor (CF) translating between the adjusted RVUs and dollars to establish physician payments under Medicare for service K in locality L :

$$Payment_{K,L} = \left[GPCI_{W,L} * RVU_{W,K} \right] + \left[GPCI_{PE,L} * RVU_{PE,K} \right] + \left[GPCI_{MP,L} * RVU_{MP,K} \right] * CF$$

Physician Work	Practice Expense	Malpractice Insurance
----------------	------------------	-----------------------

Section 1848(c) of the Act requires that national RVUs be established for physician work, practice expense (PE), and malpractice expense. Initially, only the physician work RVUs were resource-based, and the PE and malpractice RVUs were based on average allowable charges. Section 4505(f) of the Balanced Budget Act of 1997 (BBA) amended section 1848(c) of the Act requiring CMS to implement resource-based malpractice (MP) RVUs for services furnished on or after 2000.

The resource-based MP RVUs were implemented in the Physician Fee Schedule (PFS) final rule published November 2, 1999 (64 FR 59380). The MP RVUs were based on malpractice insurance premium data collected from commercial and physician-owned insurers from all the States, the District of Columbia, and Puerto Rico. The first 5-Year Review of the physician work RVUs was published on November 22, 1996 (61 FR 59489) and was effective in 1997. The second 5-Year Review was published in the CY 2002 PFS final rule with comment period (66 FR 55246) and was effective in 2002. The third 5-Year Review of physician work

RVUs was published in the CY 2007 PFS final rule with comment period (71 FR 69624) and was effective on January 1, 2007.

In developing resource-based malpractice RVUs, CMS concluded that premium costs were driven primarily by physician specialty and the level of surgical involvement (2005 Proposed Rules, 70 FR 45784). Since malpractice insurance rates can dramatically shift over the course of several years, including both significant increases and decreases depending on the part of the country and specialty, it is critical to include updated premium costs in calculating the new malpractice RVUs.

Therefore, there are three substantial efforts that must be completed to update the malpractice RVUs. The first is the collection of malpractice (professional liability) insurance premium data by specialty. Using these premiums, the malpractice RVUs are based on the contribution of different physician specialties and surgical involvement to different Medicare procedures in order to determine the contribution of different risk factors based on the physician effort, captured in the physician work RVUs.

This draft report describes the data sources, methodologies and results for the current update of the malpractice RVUs, scheduled to be implemented in 2010. This report is organized into four main sections: Section 2 describes the collection of malpractice premium data for this update. Section 3 details the steps in calculating the malpractice RVUs, including the assumptions required at different steps. Finally, in Section 4, we explore the impact of the update.

2 MALPRACTICE PREMIUM DATA COLLECTION

This update relies on newly collected data on malpractice insurance premiums among leading insurance underwriters in each state. In this section, we describe the collection of the premium data, which is used in the calculation of MP RVUs. Our general approach to collecting the premium data was largely comparable to that for the last update of the Geographic Practice Cost Index (GPCI) in 2007, except that we sought to collect a broader range of specialties.

2.1 Premium Data Sought

The data collection focused on professional liability/medical malpractice insurance premiums for physicians and surgeons in all 50 states, D.C., and Puerto Rico. In each state, Acumen attempted to collect data for at least 50 percent of the market share and from at least two operating medical malpractice insurers in each state. Acumen sought data effective for 2006, 2007 and, when available, 2008.¹

Whenever possible, Acumen collected physician and surgeon medical malpractice premiums with the following characteristics:

- **Claims-made:** Acumen chose claims-made policies because they are the most commonly used malpractice insurance policies in the United States. Claims-made policy rates were used rather than occurrence policies. A claims-made policy covers physicians for the policy amount in effect when the claim is made, regardless of the date of event in question. 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 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. Claims-made coverage involves a step process with premium increases over a set number of years of coverage in increments proportional to the claims reporting for that experience. At the mature year, premium adjustments are based only on annual rate changes.

¹ Historically, premium data for the GPCIs has represented a three-year moving average (although in practice, firms do not always update their rates annually). Therefore, Acumen collected the most recent three years of rate filings, including rate filings for 2008.

The number of years that defines a mature claim differed across insurance companies.

- **Regional Variations:** While many rates applied statewide, premiums were adjusted by geography in some states. Each insurance company reported 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. Our dataset broke down company premium rates to the county level.

Acumen identified the top medical malpractice underwriters in each state before requesting medical malpractice premiums. Whenever possible, we identified the top medical malpractice underwriters through market share data published by state insurance departments, available online or by directly contacting the insurance departments. If market share information was not available from the state, Acumen relied upon an annual report published by the National Association of Insurance Commissioners (NAIC). We preferred market share data from state insurance departments because the NAIC reported data primarily at the group level, where a group can be comprised of several different insurance companies. In these cases, the market share value represented the entire group, not just the individual company of interest. Additionally, the NAIC included companies from which state departments did not collect rate filings as consistently, such as surplus lines and risk retention groups (RRGs). Therefore, Acumen could not obtain premium data for these organizations.² In some states, the top underwriters primarily insured hospitals. These companies were ultimately excluded because this update, like previous updates, focuses on premiums for physicians and surgeons.

2.2 State Rate Filings Data Collection

The rate filings for malpractice insurance premiums were collected through state Departments of Insurance. We compiled contact information for current State insurance commissioners and staff relevant to this data collection (i.e. analysts in Medical Malpractice, Property and Casualty) by state. The first outreach was an email and accompanying telephone survey to identify the appropriate contact person and preferred method of communication (mail, fax, or email) for more detailed information, and to determine whether data are collected at the state level.

As with the previous malpractice premiums update, virtually all state insurance departments have established mechanisms to release rate filings to the public and required our

² Data from risk retention groups and non-profits are typically exempt from state dictated rates and thus do not regularly file rates. Accordingly, Acumen could not request rates for these organizations from state insurance departments.

data collection to follow these established mechanisms. About half 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. Therefore, in many states, we were required to hire third party vendors to pull rate filings, make copies, and ship the documents to Acumen.

To ensure that data was collected in a comparable manner from all states, Acumen developed a standard data collection protocol. This protocol was based on data collection from the previous GPCI update to maintain consistency. Most rate filings are only available as hard copies, each representing several hundred pages. Acumen staff conducted the data entry from documents received. For incomplete or inconsistent filings, research analysts consulted with state departments and vendors for clarification. The data collection period ran from October 2008 through February 2009.

Table 2.1 presents market share data sources by state and the final market shares collected for each state.

Table 2.1: Market Share and Number of Rate Filings Collected by State, 2006 and 2007

State	2006			2007		
	Market Share Source	# Company Rate Filings	Percent Market Share	Market Share Source	# Company Rate Filings	Percent Market Share
AK	State	2	87%	NAIC	2	71%
AL	State	2	76%	State	2	75%
AR	NAIC	4	76%	NAIC	4	76%
AZ	State	2	80%	NAIC	2	63%
CA	State	3	56%	State	4	62%
CO	State	3	69%	State	4	70%
CT	State	2	49%	State	4	49%
DC	NAIC	1	55%	NAIC	1	48%
DE	NAIC	3	19%	NAIC	4	59%
FL	State	5	59%	State	5	58%
GA	NAIC	3	52%	NAIC	3	55%
HI	NAIC	2	48%	NAIC	2	49%
IA	NAIC	2	72%	NAIC	3	71%
ID	NAIC	4	86%	NAIC	4	85%
IL	NAIC	3	64%	NAIC	3	98%
IN	NAIC	3	60%	NAIC	3	59%
KS	NAIC	4	56%	NAIC	5	66%
KY	NAIC	3	39%	NAIC	4	51%
LA	NAIC	3	66%	NAIC	3	64%
MA	State	2	88%	State	2	88%
MD	State	3	82%	State	4	62%

State	2006			2007		
	Market Share Source	# Company Rate Filings	Percent Market Share	Market Share Source	# Company Rate Filings	Percent Market Share
MI	State	2	28%	State	2	29%
MN	State	1	71%	State	1	73%
MO	State	3	43%	State	3	35%
MS	State	0	0%	State	0	0%
MT	NAIC	2	52%	NAIC	2	50%
NC	NAIC	3	52%	NAIC	3	57%
ND	NAIC	2	37%	NAIC	2	36%
NE	NAIC	2	41%	NAIC	2	40%
NH	NAIC	2	58%	NAIC	2	63%
NJ	NAIC	2	52%	NAIC	3	55%
NM	NAIC	1	14%	NAIC	3	63%
NV	State	4	36%	State	4	34%
NY	State	2	86%	State	2	81%
OH	NAIC	4	50%	NAIC	5	61%
OK	NAIC	2	73%	NAIC	2	76%
OR	NAIC	3	78%	NAIC	4	85%
PA	NAIC	4	34%	NAIC	4	34%
PR	NAIC	0	0%	NAIC	0	0%
RI	NAIC	1	44%	NAIC	1	34%
SC	NAIC	2	36%	NAIC	2	53%
SD	NAIC	3	92%	NAIC	3	91%
TN	NAIC	4	90%	NAIC	4	59%
TX	NAIC	4	85%	NAIC	4	85%
UT	NAIC	2	81%	NAIC	2	73%
VA	NAIC	4	41%	NAIC	4	41%
VT	NAIC	3	61%	NAIC	3	82%
WA	NAIC	3	73%	NAIC	3	72%
WI	NAIC	3	66%	NAIC	3	63%
WV	NAIC	3	83%	NAIC	3	70%
WY	NAIC	2	63%	NAIC	2	64%

Acumen was able to successfully collect medical malpractice insurance premium rates from 49 states and the District of Columbia, leaving only Mississippi and Puerto Rico outstanding. Table 2.2 compares states missing in the current data collection to those missing in the previous update. The malpractice data now reflects data for the District of Columbia, Nevada, New Mexico and Wyoming, previously absent in the last malpractice data update. As before, Acumen still lacks malpractice premium data for Mississippi and Puerto Rico. Additional information regarding data collection challenges for specific states is provided in the appendix.

Table 2.2: States that Did Not Provide Rate Filing Data

2006/2007 GPCI Update	2008/2009 Data Collection
District of Columbia	--
Mississippi	Mississippi
Nevada	--
New Mexico	--
Puerto Rico	Puerto Rico
Wyoming	--

2.3 Additional Rate Information

In addition to the core rate filings data described above, Acumen also collected additional information relevant to developing accurate cost information, including costs of patient compensation funds and professional liability insurance for technicians.

Patient Compensation Funds

PCFs are state funds that operate like an excess-layer insurer – that is, 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 amount). They are funded by mandatory surcharges that physicians and hospitals pay on their primary-layer policies. These arrangements give primary insurers, physicians, and hospitals an extra cushion against large judgments.³ Seven states have Patient Compensation Funds (PCFs) that charge physicians a surcharge on top of their malpractice premium. In some states participation is voluntary, in others participation is mandatory.

Kansas, Indiana, Louisiana, Nebraska, New Mexico, Pennsylvania, and South Carolina have Patient Compensation Funds. For these states, we requested both the rates for the insurance company premium and the PCF surcharge. Acumen also requested background information regarding the PCFs, including whether the state PCF was mandatory or optional, whether there were any requirements to utilize the PCF, the liability limits for the PCF, and the physician

³ Michelle M. Mello, “Understanding Medical Malpractice Insurance: a Primer,” The Robert Wood Johnson Foundation,” January 2006.

participation rate in the PCF. This information is summarized for all active Patient Compensation Funds in Table 2.3.

Table 2.3: Patient Compensation Fund Overview

State	PCF Name	Mandated	Coverage Required	Liability Limit	Physician Participation Rate
IN	Patient Compensation Fund	Voluntary	\$250K / \$750K	\$1.25M per occurrence	79%
KS	Health Care Stabilization Fund	Mandatory	\$200K / \$600K	\$100K / \$300K, \$300K / \$900K, \$800K / \$2.4M	100%
LA	Patient Compensation Fund	Voluntary	\$100K / \$300K	\$500K	72%
NE	Excess Liability Fund	Voluntary	\$200K / \$600K	\$1.75M	72%
NM	Patient Compensation Fund	Voluntary	\$200K / \$600K	No Limit	50%
SC	Patient Compensation Fund	Voluntary	\$100K / \$300K	\$200K / \$600K	40%
PA	Mcare (Medical Care Availability and Reduction of Error)	Mandatory	\$0.5M / \$1.5M	\$0.5M / \$1.5M	100%
WI	Patient Compensation Fund	Mandatory	\$1M / \$3M	No Limit	100%

Technical Component Data

In 2008, the American Association of Physicists in Medicine (AAPM) requested that CMS include additional data into malpractice RVU calculations to reflect the liability insurance traditionally carried by technical medical subspecialties, such as therapeutic radiologists. AAPM explained that medical physicists, due to their key role in the design and quality assurance of high-risk radiation therapy procedures, have a significant liability exposure, and so liability insurance is normally carried by the medical physicist's employer or by the medical physicist if self employed.

In response to these requests, Acumen collected technical component data from Marsh Affinity Group Services, one of the largest association program insurance brokers and administrators in the United States providing malpractice insurance to medical physicists. We further discuss the incorporation of these technical data in Section 3.

2.4 Constructing the Malpractice Premium Data Set

To structure the rate filing information into a data set for use in developing the malpractice RVUs, we needed to develop crosswalks for matching to CMS data sources. Two distinct crosswalks were required: specialty and territory.

The first crosswalk mapped 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 specialties available in the collected rate filings. Most insurance companies provided their own internal crosswalks from ISO codes to named specialties; Acumen matched these crosswalks to CMS carrier codes.

This crosswalk also preserved information regarding surgery classes, categorizations that impact premium rates. For example, many insurance companies distinguished general practice physicians into non-surgical, minor-surgical and major-surgical classes, each with different malpractice premiums. Some companies provided additional surgical sub-classes; for example, distinguishing general practice physicians that conducted obstetric procedures, which further impacted malpractice rates. Acumen recorded all of this information and standardized the data to CMS carrier codes. The use of these categories is described in Section 3.3.

Finally, many companies have different rates within states, representing different coverage territories. Acumen tracked this regional information within each rate filing by county and state FIPS codes. Acumen also preserved the original territory code terminologies specific to individual rate filings to ease crosschecking of collected rate filings.

This page is intentionally left blank.

3 UPDATING THE MALPRACTICE RVUS

The Malpractice RVUs (Relative Value Units) represent the relative malpractice costs for medical procedures. The update of the malpractice RVUs involved five data sources, listed in Table 3.1. In particular, it requires information on malpractice premiums, linked to the physician work conducted by different specialties that provide Medicare services. Because malpractice costs vary by state and by specialty, the malpractice premium information must be weighted geographically and across specialties.

Table 3.1: Data Sources Overview

Dataset Name	Source	Last Update	Observation Level	Data Source Role
Malpractice Premiums (MP File)	State Departments of Insurance	Data effective in 2007 updated by Acumen in February 2009	County, specialty, surgery class, premium rate	Malpractice premiums for determining specialty risk factors.
Locality RVUs and Services (LRS File)	CMS	2008	Phys Zip, Carrier Number, Loc, Specialty	RVUs for creating geographic normalization factor
CPT RVUs and Services (CRS File)	CMS	2008	Carrier Number, Loc, Specialty, CPT/Mod	RVUs for weighting county-level malpractice premiums and national specialty risk factors
Geographic Practice Cost Index (GPCI File)	CMS	2008	Medicare Locality	Geographic Adjustments for Malpractice Premiums
National Physician Fee Schedule Relative Value File (NPFS File)	CMS	2008	CPT/Mod	Physician Work RVUs and impact reference

In this section, we describe the conceptual process behind the recalculation of the malpractice RVUs for each procedure using updated data from the sources listed in Table 3.1. Section 3.1 walks through the calculation of the “raw” malpractice RVUs, working from the basic concept back through the data elements required to calculate the MP RVUs. There are two major complications to this basic approach. First, as noted in Section 2 above, it is common for

insurance carriers to distinguish surgery categories within specialties. Our handling of this issue is discussed in Section 3.2. Second, a number of the procedures have billing split into a professional component and a technical component. Our handling of the technical and professional components is discussed in Section 3.3.

3.1 Creating Raw Malpractice RVUs

Conceptually, malpractice RVUs for each procedure (CPT/MOD) are calculated by multiplying a procedure level risk factor (RF) by the procedure’s physician work RVU, as shown in Equation 1. Physician Work RVUs (PW RVUs), last updated in 2007, reflect the physician time, technical skill and effort involved with a specific procedure. The RF then reflects the relative malpractice liability risk associated with that procedure, based on the specialties of the physicians who perform this service.

$$(1) \quad Raw\ MPRVU_{CPT/MOD} = RF_{CPT/MOD} \times PWRVU_{2007,CPT/MOD}$$

Where:

Raw MP RVU =	Updated Malpractice RVU, before budget neutralization
CPT/MOD =	Current Procedural Terminology / Modifier
RF =	Risk Factor
PW RVU =	Physician Work RVU from the 2007 National Physician Fee Schedule Relative Value File

The resulting MP RVUs are considered “raw” in the sense that they are not yet adjusted to ensure budget neutrality, a topic we discuss below.

In Equation 1, the PW RVU values are drawn from the NPFS file. The calculation of the RF values is the chief task of the malpractice RVU update. In the rest of this discussion, we review the elements that go into calculating these $RF_{CPT/MOD}$ values.

Procedure Level Risk Factors

As shown in Equation 2, the procedure level risk factors are weighted averages of the risk factors associated with each specialty that performs the procedure.

$$(2) \quad RF_{CPT/MOD} = \frac{\sum_S RF_S \times MTUS_{CPT/MOD,S}}{\sum_S MTUS_{CPT/MOD,S}}$$

Where:

RF = Risk Factor
S = Specialty
MTUS = Services Performed (Miles/Times/Units/Service)

The weights shown in Equation 2 are the sums of the number of services performed per specialty per procedure, as reported in the CRS file provided by CMS. The specialty level risk factors RF_s are calculated from the malpractice premium data compiled by Acumen for this purpose. Equations 3 through 6 below outline the basic steps in developing these RF_s values.

Raw Specialty Risk Factors

Specialty risk factors are calculated by dividing the national average premium for each specialty by the national average premium for the specialty with the lowest average premium, as shown in Equation 3.

$$(3) \quad RF_S = \left(\frac{Norm P_S}{Norm P_{LOWEST}} \right)$$

Where:

RF = Risk Factor
S = Specialty
Norm P = Normalized National Average Premium

These national average premiums are normalized using the existing malpractice GPCIs to adjust for regional differences in the provision of services that might affect the calculation of these specialty risk factors. In the next several equations, we show the derivation of the national average premiums by specialty P_s , and then we show the normalization.

National Average Premium for Each Specialty

The underlying malpractice premium data, as compiled in the MP file described in Section 2, are collected at the county level. Thus, the national average premiums used in

Equation 3 above are weighted averages of the county-level premiums for each specialty, weighted using the total RVUs for each specialty in each county (across all procedures).

$$(4) \quad P_s = \sum_c \frac{P_{sc} \times TRVU_{sc}}{TRVU_s}$$

Where:

P =	Premium
S =	Specialty
C =	County
TRVU =	Total RVUs

As noted, the P_{sc} values are derived from the malpractice premium data and calculated using Equation 5 below. The TRVU weights are drawn from specialty-zip code totals on the LRS file summed by county.

County Average Specialty Premiums

To calculate the national average specialty premiums in Equation 4, we first had to calculate an average specialty premium for each county from the county-level insurance carrier data gathered from state DOIs. We use market shares (MS) at the state level for firm F providing coverage in county C and MS_C refers to the total market share for all firms providing coverage in that county. In creating these values, we averaged carrier-county-specialty-premiums, weighted by each carrier's market share in each state (Equation 5).

$$(5) \quad P_{sc} = \sum_F \frac{P_{scf} \times MS_{cf}}{MS_C}$$

Where:

P =	Premium
S =	Specialty
C =	County
F =	Insurance Carrier (Firm)
MS =	State-level company Market Share values

Normalized Premiums

Acumen also normalized premiums for geographic differences in malpractice premiums in order to complete Equation 3 (calculating Norm P). This normalization was necessary to avoid inflated or deflated values due to potential differences in distribution of specialty-provided services across performed by geographic area. Normalization adjusts the national average premiums to account for these geographic differences in costs. (The geographic cost differences are handled through the GPCIs rather than in the RVUs themselves.)

Normalized premiums are calculated by dividing the unadjusted premiums for a given surgery class effective in a given year by the average malpractice geographic practice cost index (MP GPCI).

$$(6) \quad \text{Norm } P_s = \frac{P_s}{\text{Avg MP GPCI}_s}$$

Where:

Norm P =	Normalized Premium
S =	Specialty
Y =	Year
Avg MP GPCI =	Average Malpractice GPCI
P =	Unadjusted Premium

Average Malpractice Geographic Cost Indices

In order to normalize the unadjusted premiums, we first need to calculate the average malpractice geographic cost indices (MP GPCI). The GPCI reduces geographic variation in Medicare payments by calculating an index distinctly adjusted from RVUs. The MP GPCI reflects geographic differences in premiums for mature claims made policies providing \$1 million/\$3 million limits of coverage.

National specialty MP GPCIs are calculated by averaging locality MP GPCIs for each specialty, weighted by locality MP RVUs (Equation 6). MP GPCIs by locality are derived from the CMS GPCI update, last updated in 2006.

$$(7) \quad \text{Avg MP GPCI}_s = \frac{\sum_L (MPRVU_{sL} \times MPGPCI_L)}{MPRVU_s}$$

Where:

MP GPCI =	Average Malpractice GPCI
S =	Surgery
L =	Medicare Locality
MP RVU =	Malpractice RVU
GPCI =	Geographic Practice Cost Index

Budget Neutralized Malpractice RVUs

We started in Equation 1 with the basic formula for the raw or non-budget neutralized MP RVUs, where Equations 2 through 7 describe the calculations required to get the inputs for Equation 1. However, once the raw MP RVU values are obtained, there is a final set of calculations required to ensure that the update is budget neutral. Equations 8 and 9 show the two steps in the budget neutralization. The calculation applies an adjustment factor that scales up the new values if the sum of the MP RVUs across all services is higher under the old MP RVUs than under the new and scales down the new values if the sum is lower under the old MP RVUs than under the new. This factor is shown in Equation 8:

$$(8) \quad \text{BN Adj} = \frac{\sum \text{MPRVU}_{2007, \text{CPT} / \text{MOD}} \times \text{MTUS}_{\text{CPT} / \text{MOD}}}{\sum \text{Raw MPRVU}_{\text{CPT} / \text{MOD}} \times \text{MTUS}_{\text{CPT} / \text{MOD}}}$$

The final MP RVUs are then simply the raw values multiplied by this adjustment factor, as shown in Equation 9.

$$(9) \quad \text{MPRVU}_{\text{CPT} / \text{MOD}} = \text{Raw MPRVU}_{\text{CPT} / \text{MOD}} \times \text{BNAdj}$$

3.2 Defining Specialties

Equation 4 above assumes a straightforward definition of specialties, using the CMS carrier specialty codes listed in Table 3.2. In practice, there are two challenges to defining specialties for use in the MP RVUs based on the rate filings received by various carriers. First, there were a few specialties that were only rarely distinguished from a general physician

Table 3.2: Number of State Rate Filings Collected for Each Specialty
(Independent Risk Factors Not Calculated for Shaded Specialties)

Spec. Code	Specialty Name	% of Total MTUS	States	Spec. Code	Specialty Name	% of Total MTUS	States
2	General Surgery	1.3%	50	66	Rheumatology	0.7%	48
7	Dermatology	3.9%	50	4	Otolaryngology	1.4%	47
8	Family Practice	7.3%	50	25	Physical Med and Rehab	1.3%	47
13	Neurology	1.6%	50	77	Vascular Surgery	0.4%	47
18	Ophthalmology	4.4%	50	92	Radiation Oncology	1.1%	47
20	Orthopedic Surgery	2.9%	50	84	Preventive Medicine	0.0%	45
22	Pathology	2.0%	50	38	Geriatric Medicine	0.2%	44
26	Psychiatry	1.4%	50	81	Critical Care (Intensivists)	0.2%	44
34	Urology	1.8%	50	90	Medical Oncology	0.7%	44
1	General Practice	1.0%	49	78	Cardiac Surgery	0.1%	41
3	Allergy Immunology	1.1%	49	48	Podiatry	3.1%	37
5	Anesthesiology	0.6%	49	71	Registered Diet/Nutr Prof	0.0%	35
10	Gastroenterology	1.4%	49	83	Hematology/Oncology	1.9%	35
11	Internal Medicine	13.3%	49				
14	Neurosurgery	0.2%	49	99	Unknown Physician Specialty	0.0%	35
16	Obstetrics Gynecology	0.6%	49	94	Interventional Radiology	0.3%	28
24	Plastic and Recon Surgery	0.2%	49	85	Maxillofacial Surgery	0.0%	21
28	Colorectal Surgery	0.1%	49	35	Chiropractic	2.1%	18
29	Pulmonary Disease	2.1%	49	98	Gynecological/Oncology	0.1%	14
33	Thoracic Surgery	0.1%	49	79	Addiction Medicine	0.0%	12
36	Nuclear Medicine	0.1%	49	62	Psychologist	0.0%	6
37	Pediatric Medicine	0.1%	49	91	Surgical Oncology	0.0%	5
39	Nephrology	1.5%	49	97	Physician Assistant	1.0%	5
40	Hand Surgery	0.1%	49	49	Ambulatory Surgical Center	0.0%	4
46	Endocrinology	0.4%	49	41	Optometry	1.1%	3
72	Pain Management	0.1%	49	65	Physical Therapist	6.5%	3
82	Hematology	0.1%	49	86	Neuropsychiatry	0.0%	2
93	Emergency Medicine	2.2%	49	12	Osteopathic Manip Therapy	0.1%	1
6	Cardiology	9.4%	48	45	Mamm Screening Center	0.0%	1
30	Diagnostic Radiology	10.1%	48	64	Audiologist	0.1%	1
44	Infectious Disease	0.7%	48	67	Occupational Therapist	0.4%	1

category or were otherwise not included in the malpractice rate filings. Second, there were a number of specialties for which some insurance carriers distinguish classes within the specialty, typically major surgery-minor surgery-no surgery and obstetrics/no obstetrics. Commonly, some carriers had class distinctions for a specialty while other carriers did not specify classes for the same specialty. In both of these cases, our goal was to keep as complete a list of specialties as possible, and yet ensure that the risk factors for the specialties were based on a robust set of data.

Specialties with Insufficient State Coverage

Although we collected premium data from all states except Mississippi, some specialties did not have distinct risk categories in the rate filings from all states. As shown in Table 3.2, 17 specialties that are coded on the carrier claims were included in rate filings in fewer than 35 states. We did not develop separate risk factors for these 17 specialties. This left 44 specialties, representing 90 percent of the services reported in the CRS file, for which we used the malpractice premium data to develop risk factors.

Table 3.3: Reassigned Specialties

Spec Code	Specialty Name	New Spec Code	New Specialty
09	Interventional Pain Management	72	Pain Management
19	Oral Surgery (dental only)	03	Allergy Immunology
35	Chiropractic	03	Allergy Immunology
62	Psychologist	03	Allergy Immunology
65	Physical Therapist	03	Allergy Immunology
67	Occupational Therapist	03	Allergy Immunology
68	Clinical Psychologist	03	Allergy Immunology
79	Addiction Medicine	03	Allergy Immunology
85	Maxillofacial Surgery	03	Allergy Immunology
86	Neuropsychiatry	26	Psychiatry
91	Surgical Oncology	02	General Surgery
94	Interventional Radiology	30	Diagnostic Radiology
98	Gynecological/Oncology	90	Medical Oncology
99	Unknown Physician Specialty	01	General Practice

For most of the physician provided specialties with insufficient state coverage in the MP file, we matched the specialties to a similar specialty – conceptually or by reported premiums – for which we did have data. For example, maxillofacial surgery was assigned the same risk factors as general surgery; while some of the low cost specialties (addiction medicine, clinical psychology) were assigned the lowest (physician) cost risk factor. Consistent with the last MP RVU update, Acumen reassigned Chiropractic, Physical Therapist and Occupational Therapist to the lowest physician cost risk factor (Allergy Immunology). Table 3.3 lists the recoded

specialties. The remaining categories were dropped, meaning they were not included in the weighted averages for calculating the malpractice RVUs in Equation 1.

Specialties with Surgery Classes

A more complicated issue is the fact that over half of the listed specialties can have premium rates that differ for major surgery, minor surgery or no surgery. These surgery classes are designed to reflect differences in risk of professional liability and the cost of malpractice claims if they occur. The same concept applies to procedures: some procedures carry greater liability risks. In fact, we can identify procedures as major surgery, minor surgery or no-surgery; as well as obstetrics or not, based on the CPT codes (see Table 3.4). Based on discussion with CMS, we used the Global 90-Day Surgery Flag applied to CPT/MOD codes to identify major surgery, and the range of CPT codes to identify all surgeries, where minor surgeries are those that fall in the surgery CPT codes but do not have the 90-Day flag for global surgery codes.

Table 3.4: CPT Code Surgery Classes

Surgery Class	CPT Code Range	Global Surgery Flag⁴
Major Surgery (Maj)	10000-69999	90 Day
Minor Surgery (Min)	10000-69999	All Other
Obstetrics (OB)	59000-59899	N/A
No Surgery (NS)	All other CPT Codes	N/A

⁴ The Global Surgery flag provides time frames that apply to each surgical procedure. Generally, procedures with a 90-day postoperative period included in the fee schedule amount are considered major surgery. We applied global flags to CPT-MOD combinations in the CRS file based on those found in the 2007 National Physician Fee Schedule Relative Value File (last updated 08/30/2007).

Table 3.5: Number of State Rate Filings by Specialty and Surgery Class

Specialty Code	Specialty Name	Unspecified	Major	Minor	NS
01	General practice	15	48	49	48
02	General surgery		50	10	3
03	Allergy/immunology	46		5	28
04	Otolaryngology	19	44	37	34
05	Anesthesiology	46	20	3	12
06	Cardiology	27	45	45	44
07	Dermatology	29	39	46	46
08	Family practice	17	48	49	49
10	Gastroenterology	29	42	43	43
11	Internal medicine	29	12	44	46
13	Neurology	33	29	44	46
14	Neurosurgery		49	3	
16	Obstetrics/gynecology	42	49	44	42
18	Ophthalmology	22	50	49	49
20	Orthopedic surgery	33	45	16	16
22	Pathology	40		40	41
24	Plastic and reconstructive surgery	41	37	6	7
25	Physical medicine and rehabilitation	43	15	18	32
26	Psychiatry	45		13	30
27	Colorectal surgery	37	40	12	5
28	Pulmonary disease	38	4	24	39
30	Diagnostic radiology	35	8	38	40
33	Thoracic surgery		49		8
34	Urology	40	38	20	17
36	Nuclear medicine	46	8	11	26
37	Pediatric medicine	30	23	44	46
38	Geriatric medicine	15	38	40	41
39	Nephrology	32	32	42	42
40	Hand surgery	40	37	8	5
44	Infectious disease	34	1	41	41
46	Endocrinology	33	30	42	41
48	Podiatry	29	14	16	20
72	Pain Management		47	8	17
77	Vascular surgery		47		6
78	Cardiac surgery		41	1	
81	Critical care (intensivists)	40		20	9
82	Hematology	29	2	37	36
83	Hematology/oncology	17	1	25	24
90	Medical oncology	29	5	19	27
92	Radiation oncology	44	2	25	11
93	Emergency medicine	39	40	38	22

To deal with the presence of surgery classes on the rate filings and the task of mapping these premiums to the CPT codes, we sought to calculate three risk factors for each included specialty:

RF_{sMaj} based Major Surgery Premium P_{sMaj}, applied to CPT codes for major surgery

RF_{sMin} based Minor Surgery Premium P_{sMin}, applied to CPT codes for minor surgery

RF_{sNS} based Non-Surgery Premium P_{sNS}, applied to CPT codes for no surgery

as well as a comparable approach for OB premiums and procedures. However, as Table 3.5 shows, the availability of data by surgery class varied across specialties.

As shown in Table 3.5, surgery class breakdowns are the norm for some specialties, with only a few states having insurance carriers that do not specify different premiums by surgery. For other specialties, a non-specific premium category is the norm, with surgery breakdowns relatively rare. Because of the wide variation, we could not adopt a single rule to develop the national average premiums by surgery class P_{sMaj}, P_{sMin} and P_{sNS}.

To develop these average premiums in light of the complexity of the surgery class data, we evaluated both the frequency with which rate class data were reported and a preliminary set of normed national average premiums, calculated for all classes reported in the data. We considered four issues:

1. Are non-specific premiums or surgery class premiums the norm for this specialty?
2. How different are the average premiums by class?
3. How much data is available if we use classes or unspecified?
4. To what degree are the preliminary average premiums “well-behaved” (i.e. Major Surgery is higher than Minor Surgery, which is higher than non-surgery, and unspecified falls in the middle)?

Where the surgical (or OB) classes existed, had reasonable coverage across the states and noticeable differences in premiums, we attempted to preserve these classes. We settled on five alternative strategies for handling the surgical classes and two for the OB classes. The five situations that determined our approach to the surgical classes are described below and summarized in Table 3.6.

1. Substantial Data for Each Class: For 13 out of 44 specialties, we determined that there was sufficient data for each surgical class, as well as sufficient differences in rates between classes, to use the surgical class data as the basis for risk factors by surgical class. General and Family Practice and Geriatric Medicine were handled in this way, as were a number of specialties that include both medical and surgical interventions. The example below shows the preliminary and final national average premiums for Cardiology:

Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
06	Cardiology	Unspecified	25	\$25,324	--
06	Cardiology	MAJ	44	\$66,410	\$66,410
06	Cardiology	MIN	45	\$28,900	\$28,900
06	Cardiology	NS	44	\$20,391	\$20,391

Table 3.6: Summary of Approaches to Defining Premiums by Surgical Class

Situation	Specialty Codes	Assignment of Premiums (Final from Prelim)
1. Substantial Data for Each Class (13)	01 (non-OB), 04, 06, 07 08 (non-OB), 10, 13, 18 16 (non-OB), 38, 39, 46, 93	$P_{sMaj} = P_{sMaj}$ $P_{sMin} = P_{sMin}$ $P_{sNS} = P_{sNS}$ Unspecified dropped
2. Major Surgery Dominates (8)	02, 14, 20, 24, 28, 33, 77, 78	$P_{sMaj} = P_{sMaj}$ $P_{sMin} = P_{sMaj}$ $P_{sNS} = P_{sMaj}$ All others dropped
3. Little or No Data for Major Surgery (5)	11, 22, 37, 44, 82	$P_{sMaj} = P_{sMin}$ $P_{sMin} = P_{sMin}$ $P_{sNS} = P_{sNS}$ Unspecified dropped
4. Unspecified Dominates (2)	05, 72	$P_{sMaj} = P_{sUnspec}$ $P_{sMin} = P_{sUnspec}$ $P_{sNS} = P_{sUnspec}$ All others dropped
5. Blend All Available (16)	03, 25, 26, 29, 30, 34, 36, 40, 48, 66, 71, 81, 83, 84, 90, 92	$P_{sMaj} = P_{sBlend}$ $P_{sMin} = P_{sBlend}$ $P_{sNS} = P_{sBlend}$

2. Major Surgery Dominates: These surgical specialties typically had rate filings that specified major surgery as the predominant rate reported. Filings that distinguished minor surgery or non-surgical were relatively rare. For most of these specialties, we did not have “unspecified” rate filings. When we did, the unspecified category was sometimes above and sometimes below the major surgery rate.

For these cases, we assigned the premium for major surgery to all procedures conducted by this specialty. (In practice, the major surgery procedures dominate the services actually provided.) The General Surgery example below is one of the clearest cut cases. Colorectal Surgery was somewhat less clear, because unspecified was nearly as common as major surgery. However, we treated it in the same manner as general surgery because of the minimal filings for

minor surgery or non-surgery and because of the similarity between the unspecified premium and the major surgery premium.

Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
02	General Surgery	Unspecified	0	--	--
02	General Surgery	MAJ	50	\$64,099	\$64,099
02	General Surgery	MIN	9	\$23,861	\$64,099
02	General Surgery	NS	2	\$13,771	\$64,099

Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
28	Colorectal Surgery	Unspec	34	\$43,985	--
28	Colorectal Surgery	MAJ	37	\$43,555	\$43,555
28	Colorectal Surgery	MIN	10	\$25,148	\$43,555
28	Colorectal Surgery	NS	5	\$4,295	\$43,555

3. Little or No Data for Major Surgery: In the group described above, rate filings for minor surgery or non-surgery were uncommon. For five other specialties, specific premiums for major surgery were uncommon, but most states had rate filings that represented minor surgery or non-surgical coverage. These five specialties were Internal Medicine, Pathology, Pediatric Medicine, Infectious Disease and Hematology. Except for Pediatric Medicine, major surgery rates were very rare for these specialties; Pediatric Medicine had major surgery rates in 18 states, but minor and non-surgical rates in more than 40 states. All five had unspecified rates that were less common than the minor surgery-non-surgery distinction and below the non-surgery rates. Therefore, for these five cases we assigned the minor surgery rate filings for both major surgery and minor surgery procedures and the non-surgery filings for non-surgical procedures. Hematology provides a representative case below:

Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
82	Hematology	Unspecified	27	\$14,866	--
82	Hematology	MAJ	1	\$15,023	\$22,173
82	Hematology	MIN	33	\$22,173	\$22,173
82	Hematology	NS	33	\$14,866	\$14,866

4. Unspecified Dominates: In only two cases did we choose the unspecified premium as the premium information to use for the specialty: Anesthesiology and Pain Management. For both of these specialties, fewer than 20 states had rate filings that distinguished by surgical classes, while more than 40 had general rate filings for the specialty. As demonstrated below,

choosing the unspecified premium lowered the result for Pain Management, although this is likely to reflect the relative costs for the specific states that reported the surgical classes. For Anesthesiology, unspecified fell in range of the surgical class rates that were reported.

Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
72	Pain Management	Unspecified	41	\$24,134	--
72	Pain Management	MAJ	15	\$49,022	\$24,134
72	Pain Management	MIN	8	\$29,471	\$24,134
72	Pain Management	NS	17	\$30,688	\$24,134
Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
05	Anesthesiology	Unspecified	45	\$24,180	--
05	Anesthesiology	MAJ	20	\$28,184	\$24,180
05	Anesthesiology	MIN	3	\$26,769	\$24,180
05	Anesthesiology	NS	10	\$15,626	\$24,180

5. Blend All Available: For the last 16 specialties, there was wide variation across the state filings in terms of whether or not surgical classes were reported and which categories were reported. For example, Rheumatology had filings for non-surgical premiums in 48 states and minor surgery filings in 10 states, but no unspecified or major surgery filings. Podiatry had rate filings in all surgical classes and in unspecified, but never more than 25 states represented in any of these categories.

Because there was no clear strategy for these remaining specialties, we blended the rate information we collected into one general premium rate and applied that rate for all three premiums (P_{sMaj} , P_{sMin} and P_{sNS}). For these specialties, we developed a weighted average “blended” premium at the national level, according to the percentage of Physician Work RVUs correlated with the surgery classes within each specialty.

Medical Oncology is an example of the results of the blended rate strategy (see next page for example). The final premium falls between the unspecified and the non-surgical premiums both because these are the predominate rate filings and because surgical procedures are relatively rare for this specialty.

Code	Specialty	Class	State Filings	Prelim Nat'l Avg Premium	Final Premiums Used
90	Medical Oncology	Unspecified	28	\$19,079	--
90	Medical Oncology	MAJ	4	\$30,296	\$19,162
90	Medical Oncology	MIN	18	\$28,950	\$19,162
90	Medical Oncology	NS	27	\$19,154	\$19,162

Specialties with Obstetrics Classes

For General Practice, Family Practice and Obstetrics/Gynecology, the rate filings also provided additional breakdowns that distinguished OB procedures from other procedures. We therefore added an additional set of three premiums (and thus associated risk factors) for these specialties. The way the premiums were reported was slightly different for the specialties, so we used a different approach for Family Practice and General Practice compared to OB-Gyn. The strategies are summarized in Table 3.7. Note that there is not a non-surgical rate for obstetrics because none of the obstetrics CPT codes are considered non-surgical.

Table 3.7: Summary of Approaches to Defining Premiums by OB Class

Situation	Specialty Codes	Assignment of Premiums (Final from Prelim)
1. No Non-Surgical	01 (OB only), 08 (OB only)	$P_{sMaj-withOB} = P_{sMaj-withOB}$ $P_{sMin-withOB} = P_{sMin-withOB}$ Unspecified dropped
2. OB-Gyn with OB	16 (OB only)	$P_{sMaj-withOB} = P_{sUnsp-OB}$ $P_{sMin-withOB} = P_{sUnsp-OB}$

Summary

To summarize, we began with malpractice premium data for 59 specialties as defined in the CMS carrier codes. Of these, we had reasonable coverage across states for 44 specialties. We developed distinct national average premiums for major surgery, minor surgery and non-surgery for as many of these specialties as had substantial rate filings by surgical class. In addition, we developed major surgery with OB, minor surgery with OB and non-surgery with OB premiums for General Practice, Family Practice and Obstetrics/Gynecology. This resulted in 84 different premium values.⁵

These premium values were used to develop risk factors by surgery class for each of the 44 specialties plus risk factors by OB and surgery class for three specialties. Allergy/immunology, one of the specialties for which we calculated one blended rate, serves as the base

⁵ Based on 3 premiums per specialty for Strategy One (39 total) plus 3 additional premiums for each specialty with OB (9 total), 2 premiums per specialty for Strategy Three (10 total) and 1 premium per specialty for Strategies Two, Four, and Five (26 total).

(1.0 value) risk factor for the calculation of the risk factors in Equation 3. Once developed, risk factors from similar specialties were applied for 10 specialties dropped for lack of adequate data.

3.3 Updating Technical Component Data

Procedural (CPT) data are distinguished as professional component (26), technical component (TC) or global data by modifiers (MOD) and PC/TC Indicators (PC/TC) according to the NPFS file. Professional and technical component modifiers were established for some services to distinguish the portions of services furnished by physicians. The professional component includes the physician work and associated overhead and malpractice insurance costs involved in technical services. The technical component includes the cost of equipment, supplies, technician salaries and malpractice insurance for procedures. Unmodified CPTs are called global data and refer to both components when billed together. Table 3.8 summarizes the differences among professional, technical and global CPT data.

Table 3.8: Professional, Technical and Global CPT Distinction

	Professional Component	Technical Component	Global
MOD Variable	26	TC	None
PC/TC Indicator	2	3	All Other
Description	Physician work, overhead and professional liability	Equipment, supplies, technical salaries and liability	PC and TC billed together

The distinction between PC, TC and global data is important because each modifier has different associated risk factors. As discussed in Section 3.1, these risk factors distinguish relative malpractice liability risk associated with procedures, based on the specialties of the physicians who perform given services. The challenge is determining the associated risk factor for each modified CPT.

In the 2005 MP RVU update, BearingPoint assumed that their collected malpractice premium data represented PC data, yielding the PC risk factor ($PC\ RF_{CPT}$). Given that the malpractice data for medical physicists was substantially lower than the malpractice premium data for physician specialties, for the purpose of this update, CMS assumed that the collected malpractice premium data for physician specialties was a better proxy for the global data ($Global\ RF_{CPT}$).

Basic Methodology to Determine Modifier Risk Factors

Our approach starts from the premise that the global MP RVUs equal the sum of the Professional and Technical Component MP RVUs, as shown in Equation 9 below:

$$(10) \quad \text{Global MP RVU}_{CPT} = \text{TC MP RVU}_{CPT} + \text{PC MP RVU}_{CPT}$$

Our problem in calculating the MP RVUs for the PC and TC components is that we are missing two pieces of data: the PC risk factor – since we assume the risk factors calculated above correspond to the global risk factors – and any RVUs to associate with the technical component as required in Equation 1 in Section 3.1. Table 3.9 shows an example for CPT 73202; note that the MP RVU for the TC MOD (0.39) and the MP RVU for the 26 MOD (0.05) add up to the global (unspecified) MP RVU (0.44). As you can see in this table, the TC component cannot be directly calculated using the same strategy as the global because there are no TC Physician Work RVUs.

Table 3.9: Example CPT Code with Modifiers

CPT	MOD	Description	PW RVU	MP RVU
73202		Ct uppr extremity w/o&w/dye	1.22	0.44
73202	26	Ct uppr extremity w/o&w/dye	1.22	0.05
73202	TC	Ct uppr extremity w/o&w/dye	0.00	0.39

Professional Component MP RVUs

Based on discussion with CMS, we make a further assumption that because the global data is equivalent to the sum of the PC and TC data for any given CPT code, the risk factor for the global code is equal to the sum of the risk factors for the TC and PC. This means that the PC RF is equal to the difference between the global data and the TC data (Equation 11).

$$(11) \quad \text{PC RF}_{CPT} = \text{Global RF}_{CPT} - \text{TC RF}_{CPT}$$

Where:

Global RF =
TC RF =

Global Component Risk Factor
Technical Component Risk Factor

PC RF = Professional Component Risk Factor

As discussed in Section 2.3, Acumen collected the TC malpractice insurance data from Marsh Affinity, an insurance group that covers the members of the American Association of Physicists in Medicine (AAPM). We treat the premiums as identical for all TC components using a risk factor that accounts for minor differences by geographic area and is calculated using the equivalent of Equation 3:

$$(12) \quad RF_{TC} = \left(\frac{Norm P_{TC}}{Norm P_{LOWEST}} \right)$$

Where:

RF =	Risk Factor
TC =	Technical Component
Norm P =	Normalized National Average Premium

This is the only risk factor that has a value below one; it is always equal to .101.

Since the global RF_{CPT} was derived using the basic approach described in Section 3.1, we can plug the RF_{TC} into Equation 8 to get RF_{PC} . We can then calculate the PC MP RVUs using the standard formula from Equation 1, repeated as Equation 13 below for the professional component. As discussed in Section 3.1, unadjusted MP RVUs are the products of specialty risk factors and physician work RVUs (PW RVUs).

$$(13) \quad Raw\ MPRVU_{PC} = RF_{PC} \times PWRVU_{PC}.$$

Technical Component MP RVUs

The same strategy is not available for the TC RVUs as TC modified CPTs have no associated physician work RVUs (PW RVUs) because they do not reflect any physician resources. Accordingly, it is not possible to calculate the final MP RVUs for TC CPTs using Equation 1. However, we can rearrange Equation 9 to derive the TC MP RVUs as equal to the difference between the global MP RVUs and PC MP RVUs:

$$(14) \quad TC\ MP\ RVU_{CPT} = Global\ MP\ RVU_{CPT} - PC\ MP\ RVU_{CPT}$$

This calculation succeeds for all CPTs containing PC, TC and global data. For cases where professional components do not have an associated Global CPT (in PC Only and TC/PC groups), the professional component is treated as though it were a global CPT, with the exception that the associated TC CPT risk factor is subtracted from the PC CPT risk factor when possible.

3.4 Updating CPTs without 2008 MTUS Values

For CPTs with non-zero values in previous MP RVU updates but lacking listed services in the 2008 CRS file, we assigned a MTUS value of one and assigned risk factors corresponding to appropriate CPT designations (TC risk factors for TC CPTs, the overall average risk factor for 26 and single CPTs, and the sum of relevant TC and 26 risk factors for global CPTs).

This page is intentionally left blank.

4 IMPACT OF THE UPDATE

In this section, we summarize the impact of the update to the MP RVUs for 8,654 procedures (defined by CPT/MOD codes) in the 2008 NPFS file.⁶ Notably, we did not apply the 5% threshold for inclusion of services or specialties as in previous MP RVU updates. Rather, we used the risk factor of the dominant specialty by services for each procedure with MTUS less than 100. This approach reflects the risk factors of the specialties that most frequently perform the procedure and avoids skewing from weighting specialties that rarely perform the procedure. Therefore, this updated threshold includes all specialties for which we have services and risk factors for each CPT code, even if the CPT provides fewer than 100 services or a specialty provides less than 5 percent of the services.

4.1 Overall Impact and Impact by CPT Code Type

To understand the impact of the changes overall and by CPT code type, we present three types of summary statistics. We begin with average effects, then present the distribution of MP RVUs under the update compared to the pre-update, and finally report the percentage change.

Average MP RVUs and Distribution of MP RVUs

By construction, the MTUS weighted mean of the updated MP RVUs is the same as the pre-update MP RVUs. Table 4.1 presents the counts and percentiles for all procedures and broken down by procedure component types, associated with the calculations described in Sections 3.2 and 3.3.

The impacts are quite uneven across code types. There is a small increase in the means for the professional components, both weighted and unweighted. Because they dominate as a share of the services, the global codes have little change in their weighted mean, but rise in their unweighted mean and show greater standard deviation.

Results by major surgery, minor surgery and non-surgery (Table 4.2) suggest that the handling of the major surgery classes favored the major surgery CPT codes at the expense of non-surgical CPT codes to some extent.

⁶ Codes are updated if they had claims in 2008 or a non-zero MP RVU in the 2008 NPFS File. Ten consultation CPT codes (99241-99245, 99251-99255) are not included in the update because they are cross walked to other codes as per CMS instruction.

Table 4.1: Distribution of Updated BN MP RVU Values by Mod/Indicator

Statistic	Subset				
	All	Tech	Prof	Global	Single
Non-Empty Values Count	8654	911	1002	835	5906
MTUS Weighted Mean	0.07	0.00	0.04	0.03	0.09
Mean	1.11	0.00	0.08	0.06	1.60
Minimum	0.00	0.00	0.00	0.00	0.00
1st Percentile	0.00	0.00	0.00	0.00	0.00
5th Percentile	0.00	0.00	0.01	0.01	0.02
10th Percentile	0.00	0.00	0.01	0.01	0.07
25th Percentile	0.04	0.00	0.02	0.02	0.24
50th Percentile	0.28	0.00	0.05	0.05	0.83
75th Percentile	1.32	0.00	0.09	0.09	1.99
90th Percentile	3.30	0.01	0.15	0.13	4.32
95th Percentile	5.02	0.01	0.23	0.17	6.06
99th Percentile	9.23	0.01	0.53	0.33	10.11
Maximum	19.24	0.03	1.21	0.74	19.24
Standard Deviation	1.92	0.00	0.11	0.07	2.15

Table 4.2: Distribution of Updated BN MP RVU Values by Surgery Class

Statistic	Subset			
	MAJ	MIN	NS	OB
Non-Empty Values Count	3690	1592	3307	65
MTUS Weighted Mean	1.46	0.11	0.05	1.86
Mean	2.37	0.36	0.06	1.61
Minimum	0.08	0.00	0.00	0.00
1 st Percentile	0.18	0.00	0.00	0.00
5 th Percentile	0.34	0.04	0.00	0.11
10 th Percentile	0.47	0.06	0.00	0.14
25 th Percentile	0.82	0.10	0.00	0.38
50 th Percentile	1.51	0.20	0.03	1.03
75 th Percentile	3.06	0.41	0.07	2.69
90 th Percentile	5.43	0.81	0.12	3.86
95 th Percentile	7.38	1.20	0.19	5.66
99 th Percentile	11.31	2.63	0.53	7.02
Maximum	19.24	8.34	1.27	7.02
Standard Deviation	2.38	0.50	0.10	1.71

Percentage Change in MP RVUs

Tables 4.3 and 4.4 present the percent changes in MP RVUs, as well as the breakdown by type and the distributions of changes by CPT code type. Note that the total non-empty values count in Table 4.3 does not equal the total number of updated CPT values for the 2008 update because we excluded some CPT codes from the percent change statistics when the previous CPT value was zero. In both tables, professional codes and single codes (no associated PC or TC) increased on average, while RVUs fell to nearly zero for most TC codes. In fact, 75 percent of TC codes had updated RVUs no more than 3 percent of their original value (The minimum percent change was -99.99%). Only 5 percent of these codes retained more than 12 percent of their earlier values. Much of this change was to the benefit of the professional components: more than 75 percent of these codes had increased MP RVUs and more than half increased by 30 percent or more. One percent of the professional components more than doubled their values.

The update was most neutral for minor surgery codes, where the median change was approximately 4 percent, although some of these codes fell by 99 percent, while others rose by more than 100 percent. The maximum change was for a professional, obstetric code. Most major surgery codes rose in MP RVU values, although a few fell substantially.

Table 4.3: Percent Change in MP RVU Across CPT Codes Values by Mod/Indicator

Statistic	Subset				
	All	Tech	Prof	Global	Single
Non-Empty Values Count	8624	911	1002	835	5876
MTUS Weighted Mean	17.6%	-97.9%	29.0%	-62.4%	31.1%
Mean	-3.6%	-97.1%	39.2%	-65.7%	12.4%
Minimum	-100.0%	-100.0%	-77.7%	-98.3%	-99.9%
1st Percentile	-99.7%	-100.0%	-58.7%	-95.5%	-94.6%
5th Percentile	-98.7%	-99.9%	-29.1%	-90.1%	-55.1%
10th Percentile	-94.1%	-99.7%	-18.0%	-87.5%	-33.1%
25th Percentile	-39.5%	-99.2%	6.8%	-82.9%	-9.1%
50th Percentile	2.5%	-98.6%	34.3%	-72.7%	10.3%
75th Percentile	27.8%	-97.4%	61.4%	-53.8%	29.7%
90th Percentile	54.3%	-92.5%	85.1%	-31.8%	51.3%
95th Percentile	76.8%	-88.1%	117.1%	-23.2%	77.0%
99th Percentile	166.0%	-82.5%	225.7%	2.2%	172.3%
Maximum	1140.4%	-9.8%	988.9%	49.7%	1140.4%
Standard Deviation	61.8%	4.8%	67.5%	23.0%	47.7%

Table 4.4: Percent Change in MP RVU Across CPT Codes by Surgery Class

Statistic	Subset			
	MAJ	MIN	NS	OB
Non-Empty Values Count	3690	1577	3292	65
MTUS Weighted Mean	30.0%	-18.4%	21.0%	-8.0%
Mean	15.8%	4.8%	-29.8%	12.7%
Minimum	-85.3%	-99.8%	-100.0%	-98.1%
1st Percentile	-75.8%	-88.9%	-100.0%	-98.1%
5th Percentile	-43.4%	-52.1%	-99.4%	-76.0%
10th Percentile	-21.3%	-42.4%	-99.0%	-75.3%
25th Percentile	-7.3%	-15.2%	-94.9%	-12.4%
50th Percentile	13.7%	3.5%	-53.7%	-6.0%
75th Percentile	31.5%	20.5%	25.4%	-0.2%
90th Percentile	51.2%	41.9%	60.0%	8.5%
95th Percentile	78.0%	63.0%	79.5%	205.3%
99th Percentile	169.3%	166.1%	158.7%	1140.4%
Maximum	754.8%	383.6%	988.9%	1140.4%
Standard Deviation	42.6%	42.0%	74.1%	158.4%

Percentage Change in TOTAL RVU

As expected according to the limited overall impact of MP RVUs on total RVUs, generally speaking, total RVUs did not substantially change as a result of this update. Tables 4.5 and 4.6 demonstrate the percent change and absolute percent change for total RVUs after the updated MP RVUs. As expected, total RVUs for technical CPT codes changed most significantly with a -4% median total RVU adjustment. Global CPT codes also decreased nearly 3% to the benefit of professional and single CPT codes.

Table 4.5: Percent Change Total RVU, 2008 to Updated BN Values by Mod/Indicator

Statistic	Subset				
	All	Tech	Prof	Global	Single
Non-Empty Values Count	8624	911	1002	835	5876
MTUS Weighted Mean	0.5%	-5.4%	0.6%	-3.6%	1.3%
Mean	-0.5%	-6.0%	1.0%	-3.6%	0.5%
Minimum	-95.3%	-95.3%	-11.1%	-28.0%	-48.5%
1st Percentile	-15.8%	-31.4%	-5.3%	-17.3%	-6.9%
5th Percentile	-6.2%	-18.2%	-1.5%	-10.9%	-3.0%
10th Percentile	-4.1%	-13.4%	-0.8%	-7.7%	-1.8%
25th Percentile	-1.6%	-6.4%	0.2%	-4.2%	-0.6%
50th Percentile	0.1%	-4.1%	1.1%	-2.8%	0.4%
75th Percentile	1.3%	-2.6%	1.9%	-1.7%	1.7%
90th Percentile	2.8%	-1.4%	2.6%	-0.8%	3.2%
95th Percentile	3.8%	-0.9%	3.9%	-0.4%	4.3%
99th Percentile	6.6%	-0.4%	6.3%	0.0%	6.9%
Maximum	18.0%	0.0%	18.0%	1.4%	15.8%
Standard Deviation	4.1%	7.2%	1.9%	3.4%	2.6%

Table 4.6: Percent Change Total RVU, 2008 to Updated BN by Surgery Class

Statistic	Subset			
	MAJ	MIN	NS	OB
Non-Empty Values Count	3690	1577	3292	65
MTUS Weighted Mean	1.0%	-1.4%	0.7%	-1.2%
Mean	0.9%	-0.1%	-2.3%	-1.7%
Minimum	-12.2%	-36.1%	-95.3%	-12.4%
1st Percentile	-5.9%	-5.7%	-21.4%	-12.4%
5th Percentile	-2.4%	-3.0%	-10.9%	-10.3%
10th Percentile	-1.5%	-2.0%	-6.7%	-10.0%
25th Percentile	-0.5%	-0.6%	-3.7%	-1.7%
50th Percentile	0.6%	0.1%	-1.3%	-0.8%
75th Percentile	2.3%	0.6%	0.7%	0.0%
90th Percentile	3.6%	1.7%	1.8%	0.8%
95th Percentile	5.0%	2.6%	2.2%	2.8%
99th Percentile	7.5%	5.2%	4.8%	15.8%
Maximum	15.2%	9.3%	18.0%	15.8%
Standard Deviation	2.4%	2.2%	5.4%	4.8%

4.2 Impact by Specialty

Table 4.7 summarizes the impact by specialty. The largest increases included Critical Care, Endocrinology, Family Practice, General Practice, General Surgery, Infectious Disease, Internal Medicine, Neurosurgery, Nephrology, Psychiatry, Pulmonary Disease and Chiropractor, all of which increased over 60% on average. In contrast, the MP RVUs for Allergy/Immunology decreased approximately 90% on average.

Table 4.7: Impact by Specialty

Spec. Code	Spec. Name	N Services	MP RVUs			Total RVUs		
			2008	Updated	Percent Change	2008	Updated	Percent Change
01	Allergy/Immunology	10,418,172	0.01	0.00	-90.4%	0.23	0.22	-4.7%
02	Anesthesiology	6,164,137	0.05	0.07	33.4%	2.03	2.06	1.6%
03	Cardiac Surgery	1,049,681	0.54	0.76	48.1%	7.64	7.89	2.8%
04	Cardiology	89,776,147	0.04	0.04	12.9%	1.37	1.38	0.1%
52	Colon And Rectal Surgery	695,066	0.08	0.10	55.4%	2.90	2.96	3.2%
55	Critical Care	1,885,703	0.09	0.13	62.2%	3.44	3.49	1.6%
06	Dermatology	37,018,044	0.02	0.01	-34.9%	0.59	0.59	-2.0%
07	Emergency Medicine	20,944,001	0.18	0.18	2.1%	3.72	3.72	0.1%
08	Endocrinology	4,179,396	0.05	0.07	64.8%	2.32	2.41	3.9%
09	Family Practice	69,785,813	0.04	0.06	73.3%	1.96	2.05	4.2%
10	Gastroenterology	13,116,098	0.09	0.11	58.8%	3.64	3.69	2.7%
11	General Practice	9,529,880	0.03	0.06	74.3%	1.85	1.93	4.1%
12	General Surgery	12,428,270	0.05	0.07	60.1%	1.99	2.06	3.5%
13	Geriatrics	1,956,179	0.05	0.07	55.3%	2.14	2.20	2.7%
53	Hand Surgery	782,432	0.05	0.06	35.3%	1.76	1.81	2.6%
14	Hematology/Oncology	25,510,954	0.04	0.05	18.3%	1.92	1.96	1.5%
15	Infectious Disease	6,185,055	0.04	0.08	76.2%	1.95	1.98	1.7%
16	Internal Medicine	126,870,350	0.04	0.07	71.1%	2.00	2.08	3.4%
57	Interventional Pain Mgmt	4,006,218	0.05	0.06	40.1%	2.09	2.13	2.1%
37	Interventional Radiology	2,920,093	0.02	0.02	7.5%	0.53	0.53	0.2%
17	Nephrology	14,496,731	0.06	0.09	62.5%	2.61	2.65	1.8%
18	Neurology	14,949,440	0.05	0.06	38.7%	2.07	2.13	2.4%
19	Neurosurgery	2,274,867	0.13	0.16	61.6%	2.60	2.68	3.8%
56	Nuclear Medicine	1,026,202	0.05	0.04	5.1%	1.32	1.31	-0.4%
20	Obstetrics/Gynecology	6,067,836	0.03	0.05	42.2%	1.67	1.72	2.6%
21	Ophthalmology	41,488,608	0.04	0.05	22.0%	2.50	2.52	0.5%
22	Orthopedic Surgery	26,993,505	0.06	0.07	40.3%	1.77	1.81	2.5%
23	Otolaryngology	13,474,736	0.03	0.04	2.4%	1.24	1.27	0.3%

Spec. Code	Spec. Name	N Services	MP RVUs			Total RVUs		
			2008	Updated	Percent Change	2008	Updated	Percent Change
25	Pediatrics	1,043,685	0.03	0.04	8.3%	1.32	1.37	0.5%
26	Physical Medicine	12,014,512	0.04	0.06	50.2%	1.61	1.64	1.6%
27	Plastic Surgery	1,465,425	0.06	0.08	44.4%	2.13	2.19	3.4%
28	Psychiatry	13,523,378	0.03	0.04	62.8%	1.73	1.74	0.9%
29	Pulmonary Disease	19,722,131	0.05	0.08	70.5%	2.22	2.26	2.2%
30	Radiation Oncology	10,328,975	0.11	0.08	-20.5%	5.24	5.21	-0.5%
31	Radiology	95,856,267	0.01	0.02	7.8%	0.41	0.41	0.1%
32	Rheumatology	6,249,195	0.05	0.07	55.4%	2.20	2.28	3.5%
33	Thoracic Surgery	1,216,212	0.25	0.36	57.3%	4.49	4.63	3.3%
34	Urology	16,689,033	0.04	0.06	56.7%	1.90	1.96	2.7%
35	Vascular Surgery	3,969,572	0.09	0.07	32.0%	2.67	2.68	2.0%
48	Audiologist	929,644	0.09	0.02	-81.2%	0.74	0.67	-10.5%
39	Chiropractor	20,079,370	0.01	0.02	71.0%	0.89	0.90	0.8%
40	Clinical Psychologist	5,852,123	0.04	0.05	31.9%	2.36	2.37	0.4%
41	Clinical Social Worker	3,844,048	0.04	0.05	38.1%	2.38	2.39	0.6%
47	Nurse Anesthetist	119,334	0.09	0.10	8.9%	2.06	2.07	0.4%
46	Nurse Practitioner	13,457,997	0.04	0.06	59.1%	1.88	1.94	3.0%
42	Optometry	10,212,129	0.03	0.04	35.3%	2.49	2.51	0.9%
54	Oral/Maxillofacial Surgery	231,512	0.06	0.05	11.1%	1.94	1.97	1.5%
43	Physical/Occup. Therapy	65,297,588	0.02	0.02	-10.5%	0.77	0.77	-0.4%
44	Physician Assistant	8,518,231	0.04	0.06	59.6%	1.78	1.84	3.3%
45	Podiatry	29,149,254	0.06	0.03	-29.9%	1.24	1.22	-1.6%
49	Diagnostic Testing Facility	5,298,938	0.19	0.02	-89.1%	3.63	3.47	-6.4%
50	Independent Laboratory	10,434,796	0.06	0.03	-59.1%	2.61	2.57	-1.3%
51	Portable X-Ray Supplier	4,240,588	0.01	0.00	-91.7%	0.48	0.47	-2.1%
98	Other	5,082,590	0.04	0.05	48.3%	1.89	1.95	2.7%

5 APPENDIX

Section 5.1 provides additional details on the data collection process discussed in Section 2. Section 5.2 compares the premium information collected by Acumen to summary statistics on PLI reported by physicians in a survey conducted for the American Medical Association.

5.1 Data Collection Gaps and Alternative Data Sources

Acumen requested documentation that reflected rates effective in the years 2006 and 2007. Data from all requested years were not always available due to a number of reasons, including:

- State departments did not require annual filings.
- Premium rates remained stable across years, thus companies did not re-file.
- State departments purged their data, keeping only current or recent rate filings.
- Filings were unavailable or misplaced.
- Some states had remarkably balanced malpractice insurance markets with more than five companies reflecting significant market shares

To account for these possibilities, Acumen collected data from a wider time range than required for the three year update, from 2006 to present. When possible, Acumen directly contacted specific insurance companies to request rate filings, but Acumen could only contact limited numbers of companies due to time constraints and low success rates with direct appeals to companies. Table 5.1 provides explanations for states with particularly low collected market shares.

Table 5.1: Explanations for States with Low Collected Market Shares

State	Market Share 2006	Market Share 2007	Explanation
DE	19%	59%	Acumen did not receive a rate filing for the company with top market share in 2006 (ProNational Insurance Co, 43%). A third-party contractor confirmed that rates for the ProNational filing effective 01/2006 are no longer archived by the Delaware DOI.
KY	39%	51%	Acumen did not receive a 2006 rate filing for ProNational Insurance Company (12% market share). Additionally, the Medical Mutual Insurance Company of NC (12% market share) is a risk retention group and is not required to submit filings to the KY Department of Insurance. Additionally, KY is relatively balanced by market share.

State	Market Share 2006	Market Share 2007	Explanation
MI	28%	29%	Legislation PA 664 of 2002 effective 3-31-03 allows medical malpractice underwriters to operate without notifying MI DOI. Accordingly, most companies have not filed a new manual in several years.
MO	43%	35%	MO's mandatory third party vendor did not locate Missouri Hospital Plan (15-20% market share). Additionally, market share in MO is remarkably balanced, with the top five insurance companies only holding 50-65% of the state market share.
MS	0%	0%	None of the top five companies in the state of Mississippi are required to file rates, rules or forms for approval because they are nonprofits and risk retention groups. Acumen contacted the company with greatest market share, the Medical Assurance Company of Mississippi, but was denied the requested information.
ND	37%	36%	Acumen did not receive a rate filing for the top company in North Dakota (MHA Insurance Co, which has ~35% market share). Acumen followed up through a third party contractor but was unable to retrieve the rate filings.
NE	41%	40%	The NE DOI requires rate filing requests to be conducted in-office. Acumen's third party vendor could not locate current rate filings with adequate information for many of the companies with significant market shares. Upon request, Midwest Medical Insurance Group provided Acumen with their rates.
NM	14%	63%	The NM DOI was only able to provide one rate filing effective in 2006.
NV	36%	34%	Despite following up with the NV DOI, Acumen did not receive rate filings for Nevada Mutual Insurance Co. (25% of the market share). Two of the other six rate filings received are effective in 2008, and are not included in the 06/07 market shares.
PA	34%	34%	Pennsylvania has a remarkably balanced medical malpractice market. Acumen collected four company rate filings effective in 2006 and 2007 after following up with the PA DOI for additional rate filings.
PR	0%	0%	After multiple attempts, Acumen could not successfully contact Puerto Rico's insurance department.
VA	41%	41%	Two of the top five companies in VA, which have at least 20% of market share, are RRGs (Risk Retention Groups) and are not required to file. Four of the top six companies were received for each year.

Medical Liability Monitor Data

Acumen supplemented the collected premium data with data from the Medical Liability Monitor rate survey, an independent study of malpractice premiums. These data are commonly used by researchers and government agencies, including the Government Accountability Office (GAO), to track changes in liability insurance costs. Because they cover only three specialties (internal medicine, general surgery and OB/GYN), these data are of limited use for the malpractice RVUs. However, they can be used to check trends in premiums over time, including projecting growth for states without recent filings available, so they may be used as a secondary resource in the development of the GPCIs in the future.

Physicians Insurance Association of America Data

Acumen investigated the use of data collected from the Physicians Insurance Association of America, a trade association of more than 60 professional liability (medical malpractice) insurance companies. Acumen examined a sample of the PIAA data and determined that PIAA collected the same data as Acumen: individual company rate filings.

5.2 American Medical Association Normalized Premiums Comparison

As an additional confirmation, we compared the premium information collected by Acumen to summary statistics on PLI reported by physicians in a survey conducted for the American Medical Association (AMA). Based on 3,931 physician responses, the AMA reported average premiums for 42 specialties that matched Medicare specialty codes. There were between 35 and 143 responses per specialty, although the AMA did not provide details on the geographic distribution of the respondents.

Because Acumen was working from rate filings, we captured premiums for non-surgery, minor surgery and major surgery categories when these were commonly reported. Since the AMA data did not distinguish the coverage type, we calculated a weighted average of the Acumen premiums based on the mix of Medicare services, since we applied non-surgical rates to non-surgical procedures, major surgical rates to major surgery procedures and so on. This yields a Medicare-service weighted average premium rate for comparison to the AMA rates.

Out of the 42 specialties that were common between the two data sets, the average premiums used by Acumen were higher than the AMA reported averages for 32 specialties. The table below lists the ten cases where the AMA averages were higher. For seven of these ten specialties, the AMA rates fall in the range of non-surgical to major surgical coverage rates in the Acumen data. For the remaining three specialties (pulmonary disease, diagnostic radiology, and hand surgery), the AMA rates were higher than the single Acumen rate. The Acumen rates are adjusted to account for regional differences, so some of the difference may be due to the location of the responding physicians.

Table 5.4: Comparison; Acumen and AMA Average PLI Premiums

Specialty	Acumen Normalized Premium Rates			Medicare Service-Weighted	AMA PLI Average
	NS	MIN	MAJ		
Otolaryngology	\$15,739	\$25,846	\$38,770	\$17,604	\$24,545
Cardiology	\$20,391	\$28,900	\$66,410	\$20,622	\$24,285
Gastroenterology	\$22,183	\$27,028	\$44,600	\$23,715	\$30,976
Ophthalmology	\$11,641	\$18,384	\$20,709	\$12,651	\$15,963
Pulmonary Disease	\$22,752	\$22,752	\$22,752	\$22,752	\$26,078
Diagnostic Radiology	\$28,608	\$28,608	\$28,608	\$28,608	\$35,854
Geriatric Medicine	\$15,647	\$24,282	\$46,013	\$15,758	\$24,712
Hand Surgery	\$38,102	\$38,102	\$38,102	\$38,102	\$42,191
Emergency Medicine	\$25,022	\$41,172	\$53,102	\$25,833	\$41,589