CY 2020 Medicare PFS Update to the GPCIs and MP RVUs

FINAL REPORT

Medicare Physician Fee Schedule (PFS): Geographic Practice Cost Indices (GPCIs) and Malpractice Relative Value Units (MP RVUs)

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Final Report for the CY 2020 Medicare PFS Update to the GPCIs and MP RVUs

Medicare Physician Fee Schedule (PFS)
Geographic Practice Cost Indices (GPCIs) and
Malpractice Relative Value Units (MP RVUs)

1 Executive Summary

The Centers for Medicare and Medicaid Services (CMS) is responsible for developing Medicare Physician Fee Schedule (PFS) payment rates for covered Medicare Part B provider services. This is accomplished through relative value units (RVUs) that establish relative payment amounts across services and geographic practice cost indexes (GPCIs) that adjust these national amounts for local input price variation. There are RVUs and GPCIs for three distinct provider inputs: physician work (WORK), practice expense (PE), and malpractice expense (MP). RVUs are updated annually through a process described in detail in annual Notice of Proposed Rulemaking (NPRM) and Final Rule notices in the Federal Register. One of the RVU inputs is a set of specialty-specific malpractice risk factors (RFs) that are based on malpractice premium data to capture the difference in premiums faced by providers of different specialties. The RFs are updated every five years,[1] with a new update due for 2020. GPCIs are updated every three years, with a new update also due for 2020. Updating the GPCIs involves collecting data on wages, rents, and malpractice premiums. Most of the required elements are available from federal data sources, with the exception of the malpractice premium data which are developed from insurers' rate filings. These malpractice premium data are used for both the MP RFs and the MP GPCI. This report describes the process used to develop the 2020 MP RFs and GPCIs, from data collection through measure creation.

As described in the report, we used the same overall approach used in previous cycles for updating MP RFs, with these methodological changes in the development of the premium data:[2]

- Downloaded a broader set of filings from the highest market share insurers in each state;
- Developed filing-specific values for all CMS specialties to be included in the final analytic data file before aggregating and averaging across filings, using a method of partial imputation to allow for inclusion of available premiums for CMS specialties when

[1] For CY 2020 CMS is finalizing its proposal to align the malpractice risk factor update with the GPCI update that is to occur at least every 3 years.

[2] This Final Report reflects two changes relative to the Interim Report that accompanied the NPRM based on new guidance from CMS: (1) eliminate the use of MINOR SURGERY premiums when an insurer reports both MAJOR and MINOR rates for a single specialty and (2) create two Premium Risk Classes (SURGERY and NON-SURGERY) for Cardiac Electrophysiology

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reported by a sufficient share of insurers and a method of total imputation for specialties where there were no or inadequate premiums available;
- Developed a service risk group structure to clarify at the filing level those specialties that typically face different premiums depending on the mix of services they provide, distinguishing between those who do and do not perform surgery and between those who do and do not provide obstetric services.

These methodological changes are each described in more detail in the report and resulted in the inclusion of more actual premium values and in the structuring of service risk groups by specialty in the final analysis data.

As a result of the updated malpractice premium data and a different strategy for imputing premiums when missing, we have treated several specialties differently from the last update and included data for several specialties that were previously overwritten (mapped) with data from another specialty due to insufficient data from the collected filings. Specific changes to the way that premium liability insurance (PLI) premium data were structured or populated for the final analytic premium dataset from the previous update include:

- *Three specialties for which there are now subgroups to reflect common practice of charging different premiums based on service risk*:
    - General Practice (01) now includes an obstetrical (OB) service risk group, in addition to surgery and non-surgery groups;
    - Obstetrics/Gynecology (OB) (16) now includes a non-surgery service risk group, in addition to surgery and OB groups; and
    - Podiatry (48) is now split into surgery and non-surgery groups but was formerly not divided into subgroups.
- *Four specialties for which there are fewer subgroups than under current policy:*
    - Sports Medicine (23), Unknown (99), and Sleep Medicine (C0) have single RFs at the specialty level but formerly had surgery/non-surgery groups; and
    - Certified Nurse Midwife (42) has a single RF but was formerly subdivided into surgery/no OB and surgery/with OB subgroups.
- *Sixteen specialties for which there are now data available but were formerly mapped entirely to another specialty:*[3]
    - Interventional Pain Management (09), Oral Surgery (dentists only) (19), Sports Medicine (23), Anesthesiologist Assistants (32), Chiropractor (35), Optometry (41), Certified Nurse Midwife (42), CRNA (43), Pain Management (72), Peripheral Vascular Disease (76), Hematology/Oncology (83), Maxillofacial

[3] Four of these (23, 42, 99, C0) are also included above as having a revised subgroup structure. Under the previous approach, premiums for these specialties were mapped from other specialties in their entirety, including whatever subgroup structure was present. By including actual premiums and doing *all* imputation at the specialty/subgroup level, we have not continued this practice of creating subgroups in a specialty simply by virtue of imputation.

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Surgery (85), Surgical Oncology (91), Interventional Radiology (94), Unknown (99), and Sleep Medicine (C0).

In addition to these data collection and methodological refinements, two CMS proposals framed data and measure development activities for this update. First, CMS finalized harmonization of the treatment of specialties between PE and MP RVU development, which means that specialties that have historically been excluded from PE ratesetting will also be excluded from MP RVU development. Although the MP premium data collection process did not explicitly exclude these specialties, any data related to them from the filings has not been included in the analytic file development and there are no RFs calculated for them. CMS also finalized setting the technical component (TC) risk factor equal to 1.00, so we have not developed a measure from filing rates.

The resulting updated national premiums and RFs are, broadly speaking, lower for surgical specialties. MP RVUs calculated from the updated RFs led to reduced PFS payments of 1 percent for four specialties—Chiropractor, Dermatology, Neurosurgery, and Oral/maxillofacial surgery—and increased payments of 1 percent for Emergency Medicine.[4]

In addition to collecting updated malpractice premium data required for the RFs to develop the malpractice RVUs and for the malpractice GPCI, we collected updated data that underlie the physician work and practice expense GPCIs. As described in more detail in the report, we made two methodological refinements in the development of the GPCIs:

- Changes to specific occupational categories for which data are included to reflect changes in the way that the source data are available; and
- Refinement of weighting to better address missing input data at the county level.

Among the three GPCIs, the updated MP GPCI shows the most change relative to current values, consistent with previous updates. Almost 60 percent of MP RVUs are in localities that have MP GPCIs that change by at least 4 percent. The geographic adjustment factor (GAF), which captures the combined change of the three in each area, changed modestly, changing by less than half of a percent in 44 localities that account for about 44 percent of PFS payments. The relative distribution of localities by the three GPCIs and GAF appear fairly similar under the new values compared to the existing values.

2 Background

Medicare bases payments for provider services, excluding anesthesia services, on the Medicare PFS. It establishes base national payments that are adjusted to reflect local variation in input prices. The PFS is built around three key concepts:

- Relative value units (RVUs): Defined at the service level, RVUs are designed to capture relative resource use across services; separate relative value scales (RVS) are developed for WORK, PE, and MP.

[4] Changes in MP RVUs are reported by 'impact specialties' that group together related CMS Specialties. Individual CMS Specialties within an impact specialty may have different MP risk factors.

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- Geographic practice cost indexes (GPCIs): Defined at the Medicare locality level, GPCIs are defined to capture regional differences in costs associated with providing services; there is a separate GPCI for each of the three RVSs. There are currently 112 PFS localities.
- Conversion factor (CF): The single national conversion factor is used to translate the RVUs of the PFS into dollar payment rates.

RVUs are derived from physician work recommendations, direct cost estimates, and malpractice premiums, while GPCIs are based on malpractice premiums, non-physician occupational wages, employee wages, equipment and supplies, office rents, and purchased services costs. CMS' Division of Practitioner Services is responsible for managing all aspects of the PFS except the conversion factor, which is calculated by CMS' Office of the Actuary. RVUs and GPCIs for each of the three elements—WORK, PE, and MP—are multiplied, and then these three products are summed. This geographically adjusted total RVU amount is converted to a dollar payment by multiplying it by the CF.

This report describes the update of the GPCIs and the MP RFs that underlie development the Malpractice RVUs for calendar year (CY) 2020, are based on the collection and acquisition of updated input data. The malpractice insurance premium data collected are used for both the MP RFs and the MP GPCI.

Prior to the CY 2016 rule cycle, the calculation of MP RVUs was carried out as a task separate from the annual update of the PFS even though clinical labor RVUs (a product of the PE RVU process) and physician work values can both change annually and are inputs to MP RVUs. In CY 2016, a new law that capped the decrease in total RVUs (i.e., the sum of WORK, PE, and MP RVUs) at 20 percent in a given year for any code went into effect[5] and MP RVUs essentially became an input to the PE RVU calculation. As a result, CMS integrated the MP RVUs into the annual PFS update process. The calculation of MP RVUs themselves is only relevant to this update to the extent that risk factors are one of the main inputs, so calculating MP RVUs will help validate new data and understand their implications.

Section 3 of the report describes the process of acquiring and developing the malpractice premium data that are used for the GPCIs and malpractice risk factors. Section 4 describes the update of the GPCIs for the Medicare PFS for the CY 2020 rule cycle. This starts with a description of the data collection and acquisition process required for each GPCI calculation. It next describes the data development needed to transform the collected data into a format that can be used to create each GPCI and the method for creating the individual GPCIs and geographic adjustment factors (GAF). Post-measure creation adjustments are then described to specify how provisions for budget neutrality, blending, other legislative adjustments, and California localities are incorporated.

[5] Some codes are exempted from this policy.

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Section 5 of the report includes a discussion of the update of the malpractice risk factors. A summary of the findings of the report and conclusions as a result of the CY 2020 update are described in Section 6.

Finally, we have included detailed output data tables in Section 7, key reference tables in Section 8 and additional details on parameters and how we accessed publicly available data in Section 9.

3 Developing Malpractice Premiums for the Update of the CY 2020 GPCIs and Malpractice Risk Factors

A. Overview

Underlying the malpractice risk factors and MP GPCI are premiums paid for medical PLI across the nation and across provider specialties. These data are not readily available from an existing database of either medical providers or insurers, so CMS supports development of an updated premium database to calculate these measures. As described below, insurers' PLI rate filings constitute the most viable source for this information. The premium data collection process is designed to develop a data resource that includes information sufficient for describing malpractice insurance rates in every state for as many CMS specialties as feasible.

As described in this section, the process for collecting these premium data involves several steps:

1. Identify states and localities;
2. Identify sources of premium data;
3. Define criteria for selecting insurance filings;
4. Include Patient Compensation Fund (PCF) surcharges for states with mandatory coverage;
5. Select premiums for each specialty, adjusting base rates to standardized coverage; and
6. Map insurer specialties to CMS specialties.

The data collection process for this CY 2020 update generally follows that of previous updates. The process has been modified slightly to increase the potential for obtaining premiums for historically underrepresented specialties and to reflect current understanding of the marketplace. Each of these changes in approach is explained in the appropriate section below.

B. Identify States and Localities for Inclusion

Insurance products are regulated at the state level. Insurance filings were therefore collected for each state and the District of Columbia. Efforts were made to collect filings from Puerto Rico, but recent filings were not submitted. When new data were not available, as in the case of Puerto Rico, ARC used older filings from previous updates. Consistent with previous updates, no filings were collected for the other U.S. territories: American Samoa, Guam, Northern Mariana Islands, and U.S. Virgin Islands.

C. Identify Sources of Premium Data

For most states, PLI filings are available online from the System for Electronic Rates and Forms Filing (SERFF) Filing Access Interface (SFA). Because this is a consistent and readily available

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source of filings, it was used for every state for which data are available. In this report these states are identified as "SERFF states." The balance of states, the District of Columbia, and Puerto Rico are identified as "non-SERFF states" to indicate that the filings were not obtained from the SERFF web site. Many non-SERFF states use SERFF in some manner (e.g., for filing submission), and their filings may follow the SERFF format, but as of the time of data collection for the CY 2020 update, the filings were not available for download via the SFA.

The method of obtaining filings from non-SERFF states varied. Some states provided online access to the filings, some provided online request forms, and some had to be contacted via email with a specific request for information. In one state, filings were collected by a third-party vendor.

D. Define Criteria for Selecting Filings

The method of reporting PLI premium rates varies by company and across localities. To produce a consistent database of premiums for determining the specialty risk factors and GPCIs, it is necessary to define consistent criteria for the selection of the appropriate premiums. Consistent with prior years, criteria were set for selecting the insurers that would be represented in the dataset, the filings that would be selected, and the characteristics to identify specific premiums.

1. Selection of Insurers

In order to focus the data collection on filings necessary for reflecting the market in each state, the largest insurers were identified using the National Association of Insurance Commissioners (NAIC) market share report.[6] Market share is defined as the ratio of the insurer's direct premiums written to the total direct premiums written for PLI in each state.[7] The NAIC annual report provides state-level market share for entities that provide PLI in the state. For SERFF states and non-SERFF states with online access to filings, 2017 market share was used to select companies. For non-SERFF states without online access to filings, 2016 market share was used to identify companies.[8] In some states, Risk Retention Groups (RRGs) play a significant role in the malpractice insurance market, but they are not required to file rates. As a result, we were limited to including the largest *non-RRG* insurers in each state. In a state like Massachusetts, for

[6] National Association of Insurance Commissioners (NAIC). 2017 Market Share Reports for Property/Casualty Groups and Companies By State and Countrywide. (2018). Accessed: https://www.naic.org/prod_serv/MSR-PB-18.pdf

[7] Insurance groups are made up of insurance companies that are related by ownership. The NAIC market share report presents data by group for those insurers that are members of a group in order to more accurately reflect the number of distinct entities competing against one another for business in a market.

[8] 2016 market share was only used for requesting filings early in this project. 2017 market share, which subsequently became available, was used for all states for all calculations involving market share. The use of 2016 market share affected the request criteria for two states: Hawaii and Kentucky. In each state, one of the 2016 top 5 groups/companies was no longer in the top 5 in 2017. The possible impact is considered negligible; aggregate 2017 market share for the companies whose filings were requested was 73% for Hawaii and 57% for Kentucky.

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example, where an RRG accounts for over half of the state's PLI policies, it is impossible to know how well the rates we develop without RRG premiums reflect the state's PLI market.

For SERFF states, it is presumably possible to obtain as many filings as necessary because all filings are available online. This is also true for some non-SERFF states that provide online access to filings. For some non-SERFF states, filings had to be requested from the state or through a third party. It was unknown how long it would take for these requests to be fulfilled. In these states, a more limited set of filings was requested in order to reduce the burden on the State and to improve the likelihood of a timely response. For these states:

1. The request was limited to filings submitted in 2016 and 2017. Earlier filings used in the prior update were already available to supplement the dataset.
2. The request was limited to the top five companies/groups in the state. It was unlikely that the selection methodology (filings up to 50 percent up to a maximum of four companies or groups) would require inclusion of additional companies.
3. When a group was included in the top five for a state, specific companies in that group that were known to offer PLI in SERFF states were specified in our request. States accept filings for companies rather than groups, so a request for a top five group might not be understood to include all companies associated with that group. In most cases, only a few of the companies within a group offer PLI insurance. By limiting the request to companies known to offer PLI, the burden on the state was reduced.
4. The request was limited to sub-types "Physicians and Surgeons" and "Med Mal Sub-TOI Combinations" because these comprise most of the specialties covered by the fee schedule. By limiting to two subtypes, the burden on the state was reduced.

Consistent with the prior update, for the SERFF states and non-SERFF states with online access to filings, filings were collected for the groups and companies with the largest market share in each state, collecting filings until either cumulative market share met or exceeded 50 percent or filings had been collected for four groups or companies. If more than one company in an insurance group had PLI filings in the state, filings for all of the group's companies were collected. For non-SERFF states without online access to filings, the filings that had been received from the state or the state's designated third party were included in the database using the same methodology. This means that a filing might have been received but not included in the dataset because enough filings with sufficient market share or meeting the company/group maximum had been obtained.

Because the NAIC market share report does not report premium volume for the component companies of a group, market share for the group was divided equally among all of the companies in that group who wrote PLI. Unlike the prior update, for the 2020 update this allocation of market share was applied on a *specialty* level rather than a *company* level. In the prior update, market share was allocated at the company level and applied to each specialty, regardless of whether all companies in the group provided coverage for that specialty. For the 2020 update, market share was allocated at the specialty level. For example, if a group contained two companies that write PLI, but only one company covered chiropractors, for 2020, that one company receives the full group market share for chiropractors. If both companies write PLI for

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obstetricians, the market share for each premium is half of the group market share. This is an improvement over the methodology used in the previous update because it better reflects the distinct coverage options available to providers in each specialty in each market.

2. Selection of Filings

Five criteria were used to select filings for each of the selected insurers: the subtype of insurance stated for the filing, the coverage trigger, filing type, the effective date of the filing, and coverage limits. Based on the criteria described below, the final premium data cover approximately 40 percent of the U.S. population, based on state market share included and state population. Table 7.A displays the market share by state of the filings we obtained; Table 7.B shows the share of the U.S. population covered by the filings, by CMS specialty and service risk group.[9]

a) Subtype of Insurance

PLI insurance is available for a variety of practitioners, and filings are specific to subtype of insurance. Documentation for the prior update indicates that premiums were collected for physicians and surgeons because the PFS determines payment amounts for practitioners rather than facilities. Preliminary investigations for the CY 2020 update revealed that relying only on filings listed with subtype "Physicians and Surgeons" could overlook filings specific to other types of practitioners covered by the PFS. For example, filings with rates specific to chiropractors and nurse anesthetists often appeared (respectively) as subtype "Chiropractic" and "Nurse-Anesthetist." Additionally, filings with subtype "Med Mal Sub-TOI Combinations" often included premiums for several types of PFS providers as well as physicians and surgeons.

Based on input from CMS, SERFF filings for all subtypes of insurance that appeared to cover PFS specialties were included. Subtypes that obviously were not relevant to PFS, such as "Hospital," "Ambulance," and "Assisted Living Facility" were not selected. This expansion of filing subtypes represents a methodological change from the prior update and resulted in an expanded amount of premium data available for specialties that previously had insufficient data.

In the non-SERFF states, filings were requested for a limited number of subtypes—"Physicians and Surgeons" and "Med Mal Sub-TOI Combinations" in order to reduce the burden on state insurance departments.

b) Coverage Trigger

A coverage trigger is the event that must occur for the policy to be activated. "Claims-made" policies cover claims only when the alleged incident and resulting claim are made during the coverage period, while "occurrence" policies cover claims for incidents that occur during the coverage period regardless of when the resulting claim is filed. The prior update used premiums

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[9] As shown in Table 7.A, data for New York does not meet the stated threshold of either 4 insurers *or* a selection of insurers that account for at least 50% of the state's market. SERFF filings that included all required elements were only available for three groups that account for 32% of the market. In the last update, data were used from one New York insurer that accounted for 29% of the state's market. Since updated data were available from that same firm, there are no existing data from the previous update to augment our new data collection efforts.

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for "claims-made" policies, under the rationale that these are the most common type of policy. The CY 2020 update continues using these criteria. Filings collected from SERFF often contained premiums for both claims made and occurrence policies. In these cases, only the premiums for claims-made coverage were used. For non-SERFF filings, requests were made for claims-made filings.

Because claims-made policies have different rates depending on the number of years of coverage, premiums vary depending on the number of years in which the coverage has been in effect. Rates are typically considered mature once a policy has been in effect for at least 5 years; these are the rates that were collected for the prior update, and this methodology is also used for the CY 2020 update.

c) Effective date

Filings have distinct effective dates which may apply to all businesses, new businesses, or old businesses. When an insurer files a new filing providing the same type of coverage to the same type of practitioners as covered in a previous filing, the new premiums supersede the prior premiums as of the effective date.

The prior update gathered filings with effective dates in 2014 and 2015; if those were not available, the filing with most recent effective date was used. If an insurer filed in both 2014 and 2015, the premiums were averaged. If an insurer only had filings with effective dates prior to 2014, premiums were trended forward, either by interpolating the rates in the two most recent filings or by using the average rate of change in premiums for the state as indicated in the Medicare Liability Monitor.

For the CY 2020 update, the process was modified. Initial investigation and understanding of the PLI marketplace suggested that the most appropriate indicator of premiums charged by an insurer is the most recent filing, regardless of effective date. Although some states require filings to be submitted even if there is no rate change, in other states premiums remain in effect until a new filing has been submitted and/or approved. Research into the situation in each state was beyond the scope of work for this update, but ARC decided after consultation with CMS to use the most recent filing with an effective date no later than December 31, 2017, as filed.

In SERFF states, it was possible to obtain filings regardless of effective date. In non-SERFF states where filings had to be requested from the state, filings with effective dates in 2016 and 2017 were requested to minimize the workload for the state. For these states, earlier filings used in the prior update were available to supplement filings received in this data collection effort.

d) Filing Type

Insurers may submit filings for a variety of business and procedural reasons, only one of which is to establish rates. Filings address topics such as changes to the forms that document the coverage purchased and the rules delineating how base premiums and adjustments are applied for various situations, as well as the rates that are charged for coverage. The characteristics of the changes in

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a particular filing are reflected in the type listed in the title. For the CY 2020 update, SERFF filings were selected if the filing type included "rates" in the description.[10]

e) Coverage Characteristics

Medical professional liability insurance is issued with maximum coverage limits. In the prior update premiums were collected for coverage limits of $1 million per occurrence and $3 million aggregate ($1 million/$3 million).[11] The same level of coverage is used for the CY 2020 update.

E. Patient Compensation Funds

In some states PCFs have been established to provide additional compensation to patients who suffer damages over and above the amount provided by the medical practitioner's medical professional liability insurance. Medical practitioners pay a surcharge to participate in the PCF. Although eight states have established surcharge-funded PCFs—Indiana, Kansas, Louisiana, Nebraska, New Mexico, Pennsylvania, South Carolina, and Wisconsin—participation is only mandatory in Kansas, Pennsylvania, and Wisconsin.

The prior update indicated that PCF surcharges were included only for states in which participation was mandatory. Furthermore, in the prior update, states that have limits for the primary insurance and PCF coverage were selected to result in total coverage as close as possible to the $1 million/$3 million coverage limit selected as the standard for all states. PCF data files for the prior update were provided only for Kansas and Pennsylvania; it therefore does not appear that any surcharge was applied to Wisconsin premiums in the prior update.

For the 2020 update, coverage in these three states was selected according to the same intention to provide total coverage as close as possible to the $1 million/$3 million coverage limit. Primary coverage is set at the level required by the state:

- Kansas: Primary coverage of $200 thousand/$600 thousand; Healthcare Stabilization Fund coverage of $800 thousand/$2.4 million.[12]
- Pennsylvania: Primary coverage of $500 thousand/$1.5 million; Medical Professional Liability Catastrophe Loss Fund (MCARE) coverage of $500 thousand/$1.5 million.[13,14]

[10] "Consent-to-rate" filings are not considered rate filings.

[11] As described in Section 3.E, several states have Patient Compensation Funds. In these states, different coverage limits may apply.

[12] Medical Liability Monitor, October 2017, Vol. 24, No. 10, p. 44.

[13] Medical Liability Monitor, October 2017, Vol. 24, No. 10, p. 46.

[14] In a few instances a filing did not indicate a premium for coverage of $500 thousand/$1.5 million. In these cases, primary coverage of $1 million/$3 million was selected and no MCARE surcharge was applied.

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- Wisconsin: Primary coverage of $1 million/$3 million.[15]

For Kansas and Pennsylvania, surcharges were developed from pricing information reported on the state's website.[16] For Wisconsin, the primary coverage limits match the standard limit for all states, so no surcharges were added.

F. Develop Premiums for Each Specialty in Company Filing

Each company has a distinct manner of pricing PLI. Often premiums are quoted for a base level of coverage, and factors are applied to calculate the applicable premium for a given higher level of coverage. For this exercise, factors (usually multiplicative) are usually required to bring the base level of coverage to $1 million/$3 million aggregate, to reflect the specialty of the practitioner, to reflect the locality (if rates are not uniform statewide), and to reflect the number of years that the policy has been in effect. Filings often reflect other factors, such as for students or practitioners not practicing full time, but these additional factors are not considered in developing premiums for calculating the GPCIs and MP RVUs. Also, as described above, in Kansas and Pennsylvania PCF surcharges are added to the premiums as a last step.

Some insurers report rates by specialty while others report rates by risk group. In this latter case, the filing also includes a table that maps specialty to risk group. Rates were crosswalked by risk group onto the company's list of specialties to develop specialty-specific rates.

G. Develop premiums for CMS Specialties and Service Risk Groups

CMS' ultimate goal is to establish risk factors for the specialties used on Medicare claims. Therefore, we matched CMS specialties to the rate that a provider in the specialty would have been charged under each filing, even though PLI insurers use their own idiosyncratic specialty lists. Insurers that provide PLI in more than one state tend to use the same specialty list across markets. Therefore, we developed an insurer-specific list of specialties ever listed by each insurer and created company-specific crosswalks between CMS specialties[17] and the appropriate corresponding company specialty. These crosswalks were used to match CMS specialties with the most appropriate premium available in the filing. This process does *not* result in all CMS specialties being matched with a premium for all filings—many filings apply to a limited list of specialties—nor does every specialty included in each filing match a CMS specialty.[18]

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[15] State of Wisconsin, Office of the Commissioner of Insurance, "Requirements of Chapter 655, Wis. Stat., Health Care Liability and Injured Patients and Families Compensation," R10/2016, https://oci.wi.gov/Documents/Funds/31-009.pdf accessed 1/11/2019.

[16] Pennsylvania: 2017 Assessment Manual.pdf; Kansas: Bulletin-2016-1-w-Surcharge-Tables.pdf and 2016-NBC-Instructions.pdf

[17] Based on new CMS CY 2020 policy, we did not develop premium data for CMS specialties that are excluded from the PE Ratesetting process.

[18] For example, although Yoga Instructor is included on some filings, it has not been mapped to a CMS specialty.

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It is common for insurers to base premiums not only on a provider's specialty but also the mix of services within the specialty the provider furnishes. For example, it is very common for OB/GYNs who provide obstetric services to pay higher premiums than those who do not. However, insurers are idiosyncratic about which specialties face different premiums based on the risk represented by the services they provide. CMS' policy has been to create separate RFs within specialties that typically face premiums based on service risk group, i.e., those specialties that insurers typically subdivide when setting premiums. In the OB/GYN example, not only is it common for insurers to charge different premiums based on whether or not the physician provides obstetric services, but also whether or not the physician provides major surgical services as well. Broadly, service-mix based rates are usually categorized for major vs. minor vs. no surgery, or relative to provision of OB services. When making MP RVUs, RFs are merged onto the utilization data by specialty and service risk class for specialties that face different premiums depending on their service mix. CMS categorizes services with HCPCS codes between HCPCS 59000 and HCPCS 59899 as OB services and those between HCPCS 10000 and HCPCS 69999 (excluding the OB services) as surgical.[19] For many specialties, there are some insurers who price using either more or fewer categories than the majority. For these idiosyncratic insurers, it is necessary to either combine subdivided rates or split aggregated rates.

The example in Table 3.G.1 is provided to clarify this issue, and we discuss its methodological treatment below. Three insurers report the following premium rates for hypothetical Specialty X:

Table 3.G.1: Insurance Rates for Hypothetical Specialty X

INSURER	SERVICE RISK GROUP	RATE
A	Major Surgery	$65
A	Minor Surgery	$50
A	No Surgery	$43
B	Surgery	$60
B	No Surgery	$38
C	All	$54

In this hypothetical example, each insurer has chosen a different strategy for setting rates for physicians in Specialty X. If all other insurers (not shown) treat Specialty X in the same manner

[19] In addition to this standard range of surgical codes, services included in CMS's list of Invasive Cardiology Services Outside of Surgical HCPCS Code Range Considered Surgery are also considered as SURGICAL for the purpose of MP RVU development. This list is included with each PFS Notice of Proposed Rulemaking and Final Rule.

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as Insurer C, the specialty would NOT include service risk groups for the purpose of calculating MP RFs, for consistency, single Specialty X rates need to be created from the component service risk group premiums for Insurers A and B. In the case of Insurer A, the Major Surgery rates will be used to represent the surgical rate and the Minor Surgery rate will be disregarded. For both Insurers A and B, a single rate "All" is calculated as the weighted average of the Surgery and No Surgery rates, with the specialty's work RVU shares (shown in Table 3.G.2) used as the weight factor. Given these weights and above rates, the single rate for Specialty X implied by Insurer A's two rates (omitting Minor Surgery) is $55.10 and that implied by Insurer B's two rates is $50.10.

Table 3.G.2 Hypothetical Work RVU Shares by PLI Specialty

PLI Specialty	**SHARE OF TOTAL WORK RVUS - OBSTETRICS**	**SHARE OF TOTAL WORK RVUS - SURGERY**	**SHARE OF TOTAL WORK RVUS - NO SURGERY**
Specialty X	0%	55%	45%
Specialty Y	5%	30%	65%

However, if most insurers adopted Insurer B's approach, then each insurer's rates need to be reported for Surgery and No Surgery service risk groups. In the case of Insurer A, the Major Surgery rate will be used as the Surgery Rate. For Insurer C, however, it is necessary to break apart the single rate reported into Surgery and No Surgery rates. This is accomplished by using the market share-weighted[20] average ratio of Surgery to No Surgery rates for those plans that have them (in this example, this value is 1.450088 = (.55* (65/43) + .30*(60/38))/.85) and the Specialty X service mix (55% Surgery/45% No Surgery) to calculate the two rates that have the specialty average ratio and would result in the Insurer C single rate as the solution to a system of two equations with two unknowns.[21]

In this example, the result is that Insurer C's imputed rate for the Surgery service risk group is $62.77 and the No Surgery rate is $43.28. We calculated specialty WORK RVU shares for OB using the same categorization used to categorize services in the MP RVU process.

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[20] For this calculation, Insurer A was assumed to have 55 percent of the market while Insurer B had 30 percent.

[21] The two equations are:

(1) Insurer C's single rate is weighted average of implicit Surgery (S) and No Surgery (NS) rates: 54=.55* S +.45*NS

(2) The ratio of Insurer C's S/NS rates will be similar to the market-share weighted average of other insurers for the specialty: 1.450088 = S/NS

This allows us to calculate the rates for Insurer C as: NS = 54 / (.55*1.45 + .45) = 43.28; S= 1.45*43.28=62.77

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To determine which specialties consistently face service-mix based premiums, it was necessary to first document how specialties are treated in the insurer filings. Once the rates from the filings were recorded, we examined a weighted frequency of specialty subgrouping, with the weights given by state population and the plan's market share. Based on this process, most specialties are not subdivided into service risk groups. When a filing reports rates by class for these specialties, the rates have been combined into a single rate by specialty based on the specialty RVU shares reported in Table 8.B. Those specialties that typically face service-mix based premiums are shown in Table 3.G.3 and thus will have more than one service risk group RF. For those filings that report a single premium for these specialties, this single rate is split into rates for each service risk group based on the specialty RVU shares for that specialty and the market-share weighted average ratio of surgical to nonsurgical rates for that specialty among those insurers that report premiums by risk group, as shown in the example above. This process of combining or splitting rates does *not* apply to those specialties subject to total imputation (described below) or to those specialties for which insurers always report a single rate and the final structure requires a single rate, as in the case of Cardiac Surgery and Neurosurgery. Therefore, those specialties are not included in Table 8.B.

Table 3.G.3: CMS Specialties Subdivided into Service Risk Groups

SERVICE RISK GROUPS	CMS SPECIALTIES
Surgery/No Surgery	Otolaryngology (04), Cardiology (06), Dermatology (07), Gastroenterology (10), Neurology (13), Ophthalmology (18), Cardiac Electrophysiology (21), Urology (34), Geriatric Medicine (38), Nephrology (39), Endocrinology (46), Podiatry (48), Emergency Medicine (93)
Surgery/No Surgery/OB	General Practice (01), Family Practice (08), OB/GYN (16)

All CMS specialties that are not listed in Table 3.G.3 typically face a single premium regardless of service mix and so we have developed single premium at the specialty level.

This structure of specialty/service risk group represents several methodological refinements relative to the previous update. Specifically, three of the specialties in Table 3.G.3 listed as having service risk groups were previously *not* divided into sub-specialty premium groups:

- General Practice (01) now includes an OB service risk group, in addition to surgery and non-surgery risk groups;
- OB (16) now includes a non-surgery service risk group, in addition to surgery and OB risk groups;
- Podiatry (48) is now split into surgery and non-surgery groups; it was formerly not divided into subgroups.

Conversely, there are four specialties—Sports Medicine (23), Unknown (99), Sleep Medicine (C0), and Certified Nurse Midwife (42)—that had two subclasses in the previous update but are

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now treated without any subdivision. The first three of these previously had surgery/non-surgery subgroups that appear to be primarily the result of having been mapped entirely from another specialty without regard to subgroup structure. For example, Sleep Medicine was mapped to General Practice, which is divided into surgery and non-surgery service risk classes and so there were two classes for Sleep Medicine as well. However, data we have from insurers that include premiums for Sleep Medicine do NOT include different classes, so we have a single rate for this specialty. Premium data for General Practice/No Surgery is used when premiums are imputed for those filings that did not include Sleep Medicine. The fourth of these, Certified Nurse Midwife, was mapped to Surgery/No OB and Surgery/OB subgroups in the previous update, but we left this specialty undivided since insurer filings did not reflect this division and Certified Nurse Midwife practices by definition include OB services.

The final change relative to the previous update is that there are 16 specialties for which there are now data available but were formerly mapped entirely to another specialty: Interventional Pain Management (09), Oral Surgery (dentists only) (19), Sports Medicine (23), Anesthesiologist Assistants (32), Chiropractor (35), Optometry (41), Certified Nurse Midwife (42), CRNA (43), Pain Management (72), Peripheral Vascular Disease (76), Hematology/Oncology (83), Maxillofacial Surgery (85), Surgical Oncology (91), Interventional Radiology (94), Unknown (99), and Sleep Medicine (C0). Based on the collection of an expanded amount of premium data, we have been able to calculate national premiums and, therefore, RFs for these specialties.

Given the methodological approach of deciding what specialties will be treated as a whole and those that will be subdivided into service risk groups, the final step in creating an analytic premium file to support both RF and GPCI calculation is developing values for specialties/service risk groups with incomplete or no data. No CMS specialty was included in *all* available filings, although there are a few specialties that are missing from only a couple of filings. We have imputed premiums on filings that do not include values for CMS specialties/service risk groups that appear in some, but not all, filings. This 'partial' imputation was accomplished by using the premium of a related specialty and service risk group, as shown in Table 8.C.1, in plans where the specialty/service risk group was missing.

The imputation strategy is based on the notion of trying to represent the rate that that insurer would charge a provider in that specialty, given that it does not list the specialty. We relied on CMS' standard regulation specialty impact table included with all PFS regulation notices to map CMS specialties to related specialties. For example, the CMS specialty of Sleep Medicine is included in General Practice in the policy impact table. In general, we used this mapping of CMS specialties, reported in Table 8.A, to broader groups reported on the impact table to identify source specialties for imputation. As shown in Table 8.C.1, General Practice/No Surgery is the source for Sleep Medicine/All, meaning we have used the General Practice/No Surgery rate as that for Sleep Medicine in filings that did not explicitly report a Sleep Medicine premium.

Partial imputation is only done for CMS specialties that are sensibly related to a larger, more commonly reported specialty. While it is reasonable to assume that Sleep Medicine specialists face premiums like those reported for General Practice in the same filing, it is not clear what rate a "Multispecialty Clinic/Other Phys" would face in a filing that did not include it, so it is not

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eligible for partial imputation. Specialties omitted from partial imputation are typically included in the "other" category on the impact table, so there is not a natural alternative specialty to serve as a source for these CMS specialties.

After this partial imputation step, we calculated the share of the U.S. population implicitly covered by each specialty as the sum of the product of population share times market share for each specialty across all filings. For those CMS specialties for which this population share was below 20 percent or that were not included in *any* filings we used 'total' imputation, setting the specialty's premiums equal to those of another specialty as shown in Table 8.C.2. Of the 24 CMS specialties that were subject to total imputation, eight reflect specialty-specific relationships that continue to reflect the principle of trying to identify the premium that an individual in the specialty would be charged. The other 16 specialties are mapped to Allergy/Immunology (03) as a matter of necessity, not clinical relationship. As described below, the Allergy/Immunology national premium serves as the denominator for establishing specialty/service risk group RFs, so any specialty with premiums equal to those of Allergy/Immunology will end up with an RF of 1.00. Consistent with previous RF definition, 1.00 is the default value for specialties for which no (or insufficient) data were available and that are not clearly likely to face premiums similar to those of another group for which data are available. Including these specialties in the analytic database for all filings with the Allergy/Immunology premiums (when available) supports the calculation of both the RFs and the MP GPCIs, as described later.

This two-step imputation approach results in values for the CMS specialties in Tables 8.C.1 and 8.C.2 for any filing that included premiums for the source specialty in one of the two tables. This imputation strategy allows us to develop as complete an analysis premium file as feasible based on the original premium data without imputing values *across* filings.

Premium data were developed for each filing based on imputing values for specialties that were incomplete across filings based on Tables 8.C.1 and 8.C.2 to produce a state/county/company/CMS specialty/service risk group-level analytic dataset of PLI rates. This serves as the key data input for the MP GPCIs, as described in Section 4, as well as the malpractice RFs described in Section 5. The market share captured by the premium data by state is shown in Table 7.A, while Table 7.B shows the share of the U.S. population covered by the filings in the database by CMS specialty and service risk group, based on premium data from the filings and after each of the two imputations steps.

The methodological refinements in the development of CMS specialty-specific premiums mean that it is difficult to compare the raw premiums directly between the 2015 and 2020 files due to differences in the way that CMS specialty was assigned to the premium data in the filings. Therefore, it is not feasible to distinguish between changes in final premium files that are due to changes in the raw premiums themselves versus changes in the way that missing data, subgroups, and specialties were mapped from the filings to the final premium structure of the analysis file.

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4 Update of the CY 2020 GPCIs

The update of the CY 2020 GPCIs comprises the following components: data collection and acquisition, data development, measure creation and post-measure creation adjustments. Data collection involves acquiring the most recently available data from various sources that are needed to update and calculate the CY 2020 GPCIs. Data development includes the process of converting the data collected from CMS and public use files into county-level data that can be used to create the GPCIs. The measure creation component is the step in which the raw GPCIs are calculated at the locality level using the developed data from the prior step. Finally, post-measure creation adjustments required by current law are made to the raw values to finalize the GPCIs. Each component is described in more detail below.

A. Data Collection and/or Acquisition

Collecting the data underlying development of the GPCIs involves downloading and acquiring the data from a variety of sources. ARC updated several data elements through publicly available Department of Labor data and Census Department data as shown in Table 4.A.1, along with utilization data from CMS and malpractice premium data collected as described above.[22]

Table 4.A.1: Summary of Elements Required for GPCI Calculation

COMPONENT	MEANING	SOURCE	COST SHARE WEIGHT (%)
Physician Work	Measures regional variation in physician wages	Bureau of Labor Statistics Occupational Employment Statistics Wage Data (BLS OES)	50.866
Practice Expense – Employee Wages	Measures regional variation in the cost of hiring physician practice staff, excluding outsourced services	BLS OES	16.553
Practice Expense – Office Rents	Measures regional variation in the cost to rent physician offices	Census Bureau's American Community Survey (ACS)	10.223

[22] See Section 9 for a more detailed description of how to access the various public data resources referred to in this section.

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COMPONENT	MEANING	SOURCE	COST SHARE WEIGHT (%)
Practice Expense – Purchased Services	Measures regional variation in the cost of contracted services typically purchased by physicians	BLS OES, CMS labor-related classification, MEI	8.095
Practice Expense – Equipment and Supplies	Measures practice expenses associated with capital goods ranging from chemicals and rubber, to telephone and postage	No data required; 1.0 for all counties	9.968
Practice Expense – Total	Sum of employee wages, office rents, purchased services, and equipment and supplies	Component cost shares as shown above	44.839
Malpractice	Measures regional variation in cost of malpractice insurance	Malpractice premiums	4.295

To develop the WORK GPCI, ARC used the most recently available Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) wage data.

The PE GPCI comprises four distinct components and incorporates various data sources. The first component of the PE GPCI, Employee Wages (EW), is updated using the BLS OES wage data. The second component, Purchased Services, is updated using BLS OES wage data and CMS labor-related classification data. Additionally, the Medicare Economic Index (MEI) provided by CMS is used to determine the share of contracted services that physician practices purchase from different industries. ARC used the most recently available 5-year data from the American Community Survey (ACS) to update the third PE GPCI component, Office Rent. The final component of the PE GPCI, Equipment and Supplies, does not vary by geographic area and therefore does not require a review of external data sources under the current methodology. CMS assumes a national market for such items and therefore assigns a value of 1.00 for this component in each PFS locality.

The MP GPCI is calculated using the malpractice premium data described above in Section 3 along with PFS WORK RVUs and clinic labor relative costs from the PE ratesetting algorithm.

1. BLS OES Wage Data

The Bureau of Labor Statistics publishes OES data annually. The OES data include estimates of employment and wages for over 800 occupations at the national, state, metropolitan and

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nonmetropolitan area level. These data are used for the WORK GPCI and two components of the PE GPCI: Employee Wage Index and Purchased Service Index. For the CY 2020 update, ARC downloaded the most recently available BLS OES data (May 2017).[23] The May 2017 data file includes "responses from six semiannual panels collected over a 3-year period: May 2017, November 2016, May 2016, November 2015, May 2015, and November 2014." [24] Additional information on the scope of the survey, the survey sample and estimation methodology can be found on BLS' website,[25] and additional details on BLS OES data acquisition can be found in Section 9 of the report.

2. ACS Data

As has been discussed in previous GPCI reports, there is not a comprehensive public data resource for office rents in every U.S. county. As a result, the Office Rent Index of the PE GPCI has been based on geographically complete data on residential rents. The United States Census Bureau conducts the ACS each year. This survey includes data on various topics including social, housing, economic and demographic population characteristics. From this survey, ARC collected the 2017 ACS 5-year, county-level estimates on the median gross rent for 2-bedrooms for the CY 2020 update of the Office Rent Index.[26] Section 9 of the report includes additional details on ACS data acquisition.

3. RVU Data

The CY 2017 RVU data is provided by CMS. The data file is based on Medicare claims and includes Total RVUs, Total Physician Work RVUs, Total Practice Expense RVUs, and Total Malpractice RVUs at the zip code level. State and county codes are also included on the file.[27]

4. MEI Cost Share Weights

The MEI cost share weights are also provided by CMS. There have been no updates to the MEI cost share weights used in the previous GPCI update; therefore, ARC used the same MEI cost share weights that were used in the previous update for the CY 2020 update, shown above in Table 4.A.1.

5. CMS Labor-Related Classification

Finally, the CMS labor-related classification data is provided by CMS. Similar to the MEI cost share weights, there have been no updates to the CMS labor-related classification data since the

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[23] The OES May 2017 data can be found here: https://www.bls.gov/oes/tables.htm

[24] United States Department of Labor, Bureau of Labor Statistics. Occupational Employment Statistics. (2008). Technical Notes for May 2017 OES Estimates. Accessed: https://www.bls.gov/oes/current/oes_tec.htm

[25] Ibid.

[26] The 2017 ACS 5-year data can be found here: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

[27] Preparing the RVU data for use in the GPCI measure creation entailed dropping observations where MTUS <= 0 or TRVUWRK<=0 or TRVUPE<=0 or TRVUMP<=0. This is a change from previous GPCI updates and allows for the removal of implied negative volume/utilization.

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previous GPCI update. The same CMS labor-related classification data that was used in the previous update is used for the CY 2020 update.

B. Data Development and Measure Creation

The GPCIs are intended to capture geographic variation. The underlying data are used to create these measures based on weights that combine the information about variation in a way that can be used to adjust PFS payments in the Medicare Fee Schedule areas. Therefore, the key elements of data development and measure creation, in addition to the data collection/acquisition process described above, are weights and geographic definitions.

ARC created a database of geographic crosswalks and potential weights, including population and Medicare PFS RVUs and payments. The key geographic measures include counties, states, Medicare payment localities, and various definitions of metropolitan area. This geographic data base is designed to facilitate the creation of the GPCIs and can be used as a resource to examine changes to the weights and to the definition of localities. Additional details on acquiring the geographic data is in Section 9 of the report. The sections below provide details on the data development and measure creation processes for each of the GPCIs, which follow previous policies except as noted.

1. Physician Work GPCI

The WORK GPCI captures the relative cost of physician and non-physician provider labor in different Medicare payment localities. A set of occupation groups representing a variety of professionals are used in the calculation. These seven occupation groups include (1) Architecture and Engineering, (2) Computer, Mathematical, Life and Physical Science, (3) Social Science, Community and Social Service and Legal, (4) Education, Training and Library, (5) Registered Nurses, (6) Pharmacists and (7) Art, Design, Entertainment, Sports and Media. Table 8.D.1-Table 8.D.4 list the occupation codes included in each of the seven occupation groups.

a) Physician Work GPCI Data Development

The source data for calculating the WORK GPCI is the BLS OES wage data, which includes counts of employment and various statistics on wages by occupation code. In order to develop the data needed to create the WORK GPCI, ARC created a national level (all U.S. as a whole and all industries combined) file with the BLS OES wage data for the list of occupations included in the WORK GPCI. Median wages from this file are used to impute missing median wages at the county level. Next, a metropolitan statistical area (MSA)-level wage file was created for the WORK GPCI occupation codes that maps MSAs to counties, using BLS area definitions. Since the occupation wage can vary by industry within a county, ARC computed county median wages for each WORK GPCI occupation code as the total employment weighted average of the median industry-occupation code level wage. This is a change in the methodology from the previous update; the former methodology did not weight by total employment. In the final data development step, the national median wage for a given occupation code is used to impute missing county-level median wage values.

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b) Physician Work GPCI Measure Creation

The calculation of the WORK GPCI starts with county-level average hourly earnings by occupation. National average hourly earnings for each occupation are then calculated by weighting the county-level average with physician work RVUs in each county. By taking the ratio of the county average to the national average, a wage index is constructed for each occupation at the county level. The occupation-specific wage index is then weighted by each occupation's share of the total national wage bill and synthesized into a county-level wage index. When calculating the final county-level wage index, ARC used a weighted average, which differs from the methodology used in the previous update. A weighted average was used because the occupation group national share did not add up to 100 within counties for which one or more of the occupations did not have earnings data. This improved method eliminates the possibility that the county index will essentially imply a wage of zero for any occupation group not present in the county, as occurred under the previous methodology.

The next step is to calculate the Medicare locality level wage index by weighting the county-level wage index with total physician work RVUs in the county. By law, the maximum variation in the WORK GPCI incorporated in the PFS is 25 percent of the full variation, so the locality-level wage index is adjusted accordingly.

2. Practice Expense GPCI

The PE GPCI captures the relative cost of operating a physician practice by Medicare locality. It is the weighted average of four components: the cost of employee wages, purchased services, equipment and supplies, and office rent. The weights for each index are based on their shares reported in Table 4.A.1 above. These indices are described in more detail below.

a) Employee Wage Index Data Development

The data development needed to construct the EW Index follows a pattern that is similar to the data development steps for the WORK GPCI. ARC created a national level file with the BLS OES wage data for the occupations that comprise the total non-physician wages in the Offices of Physicians industry. Next, an MSA-level wage file was created for the EW occupation codes that maps MSAs to counties, using BLS area definitions. Since the occupation wage data are not unique at the county level, ARC computed the total employment weighted average of the county median wages. If the median wage is missing, then the national median wage for a given occupation code is used.

b) Employee Wage Index Measure Creation

The EW Index is created in a way that is similar to the WORK GPCI. A national average hourly wage is constructed for each occupation by weighting the county-level average hourly earnings by occupation with county-level PE RVUs. The county-level average hourly earnings by occupation are then indexed to the national average. The occupation-specific wage index is then weighted by each occupation's share of the total wage bill and synthesized into a county-level wage index. Similar to the WORK GPCI measure creation, ARC modified this calculation, using a weighted average when calculating the final county-level wage index. The final step is to

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calculate the Medicare locality level wage index by weighting the county-level wage index with total PE RVUs in the county.

c) Purchased Services Index Data Development

The data development for the Purchased Services Index is similar to the process described above for the data development for the Employee Wage Index, but the occupations include contracted services/occupations typically purchased by physicians, such as accounting, information technology, and legal services. ARC created a national level file with the BLS OES wage data for the occupations that are considered purchased services. Next, an MSA-level wage file was created for the EW occupation codes that maps MSAs to counties, using BLS area definitions. Since the occupation wage data are not unique at the county level, ARC computed the total employment weighted average of the county median wages. If the median wage was missing, then the national median wage for a given occupation code was used.

d) Purchased Services Index Measure Creation

The measure creation for the Purchased Services Index follows a methodology similar to the Employee Wage Index, but the calculation uses a slightly different approach for weighting.

A national average hourly wage is constructed for each occupation included in the Purchased Services Index by weighting the county-level average hourly earnings by occupation with county-level PE RVUs. The county-level average hourly earnings by occupation is then indexed to the national average. The occupation-specific wage index is then weighted by each occupation's share of the total wage bill and synthesized into a county-level wage index. The Medicare locality level wage index is calculated by weighting the county-level wage index with total PE RVUs in the county.

e) Equipment and Supplies Index Data Development

No data development is needed for the Equipment and Supplies Index. The final component of the PE GPCI, Equipment and Supplies, does not vary by geographic area and therefore does not require updating.

f) Equipment and Supplies Index Measure Creation

The Equipment and Supplies Index is set to 1.0 because CMS assumes that these inputs are purchased on a national market and that any geographic variation is negligible.

g) Office Rent Index Data Development

To develop the data needed to create the Office Rent Index, ARC used the 2017 ACS 5-year, county-level estimates on the median gross rent for 2-bedrooms. The ACS data file does not have estimates for the median gross rent for 2-bedrooms for select counties. ARC contacted the U.S. Census Bureau to request data for the list of missing estimates but were informed that there were no additional values available for release. Therefore, in the data development process, ARC imputed county-level rent estimates using the average value for a given county's MSA. Table 8.E includes the list of the counties that are missing estimates and their imputed values.

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h) Office Rent Index Measure Creation

The Office Rent Index is calculated as the ratio of the median gross rent for 2-bedrooms in a county to the average median gross rent for 2-bedrooms nationally. The denominator is calculated as the median gross rent for 2-bedrooms across all counties, weighted by each county's total Practice Expense RVUs. The county-level rent index is then consolidated to Medicare payment locality level using Practice Expense RVUs as weights.

3. Malpractice GPCI

The MP GPCI captures differences in malpractice insurance premiums, which vary by specialty and surgical category.

a) Malpractice GPCI Data Development

As described in the previous section, ARC created a new PLI premium dataset that includes data for multiple insurers for many specialties in each county. For the purpose of GPCI creation, these data are summarized to one value per county. This was accomplished in two steps:

1) A state/county/specialty summary of PLI rates was created as the weighted average of filing rates in each county, where the weights are the company's share of the state's PLI market at the specialty level[28];
2) A single county-level PLI rate was created in each county as the weighted average of the specialty rates within the county, with the weight given by the specialty's share of malpractice RVUs in the state as captured in a previous year's claims data, based on data provided by CMS.

The resulting file has a single rate for each state and county, as required for calculating the MP GPCI.

b) Malpractice GPCI Measure Creation

The county-level MP premiums are weighted by the county's total malpractice RVUs to establish the national average premium. The county-level MP index is constructed as the ratio of the county-level value to the national average premium. Because PFS payments are determined by Medicare payment locality, which covers one or more counties, the county-level MP index is then aggregated to the Medicare locality level with total MP RVUs in each county used as weights.

[28] We apportioned the known group-level market share to the company/specialty level based on how many cases for the specialty were included across the group's filings. So, for example, if a group had two companies, its market share was divided by two for any specialty included in both companies' filings but was given entirely to any specialty that was only included on one of the filings. This process ensured that the group's market share was consistent in aggregate across all specialties ever reported by a company of the group.

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4. Geographic Adjustment Factor

The Geographic Adjustment Factor (GAF), as shown in Equation 4.B.4 synthesizes the WORK, PE, and MP GPCIs and illustrates the overall price differences over time and across geographic areas.

Eq 4.B.4: For each locality, L:

$$GAF_L = \left(GPCI_{WORK,L} \times 0.50866\right) + \left(GPCI_{PE,L} \times 0.44839\right) + \left(GPCI_{MP,L} \times 0.04295\right)$$

It is calculated as the weighted average of the three GPCIs (WORK, PE, and MP), essentially representing the net geographic adjustment of "the typical service." The weights used in calculating the GAF are the MEI cost share weights shown in Table 4.A.1 above. The GAF is not used for payment under the PFS but is a useful measure to understand the overall effect of geographic adjustment across Medicare payment areas.

C. Post-Measure Creation Adjustments

After the raw GPCIs are calculated, a number of adjustments are applied. These include an adjustment for territories, budget neutrality, a blend of the current and newly updated GPCIs, other legislative adjustments, and transitions for select California localities. These are presented in the order in which they are calculated, since the results are order-dependent.

1. Adjustments for Territories

Consistent with previous updates, Puerto Rico and the Virgin Islands are assigned the average GPCI value of 1.00 for each index. The Pacific island territories are assigned the Hawaii locality value.

2. Budget Neutrality

The WORK, PE and MP GPCIs are subject to a budget neutrality adjustment. This ensures that total PFS payments do not change as the result of the updated GPCIs. Budget neutrality is achieved by creating a base pool of total RVUs adjusted by current GPCIs and a new pool of RVUs adjusted by updated GPCIs, and then multiplying the newly-calculated GPCIs by the ratio of the base to new pool. For this calculation, CMS has provided WORK, PE, and MP RVUs from CY 2017 which have been used to scale the GPCIs so that they result in the same RVU-weighted sum as the current GPCIs for each of the three relative value scales (WORK, PE, and MP).

3. 50/50 Blend

The final 2020 GPCIs are calculated as two-year transition values using a 50/50 blend of the current GPCIs and the GPCIs based on the updated data. This two-year transition is designed to avoid large changes when data are updated, as required by Section 1848(e)(1)(C) of the Social Security Act.

4. Other Legislative Adjustments

Section 1848(e)(1) of the Social Security Act requires two additional adjustments, both of which are performed after budget neutrality. Specifically, Section 1848(e)(1)(G) of the Act sets a floor

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of 1.5 for the WORK GPCI in Alaska, and Section 1848(e)(1)(I) of the Act sets a floor of 1.0 for the PE GPCI in frontier states, which include Montana, Nevada, North Dakota, South Dakota and Wyoming.[29] The law notes that the PE GPCI floor in frontier states is "not applied in a budget neutral manner."[30] The updated CY 2020 GPCIs reflect these two adjustments as required by current law.

5. California Localities

The definition of California's payment areas was modified by Section 220 (h) of the Protecting Access to Medicare Act (PAMA) of 2014, moving to an MSA-based set of areas and increasing the total number of areas in the state from 9 to 27.[31] The law also described a process of transitioning payments for some areas in the state over a five-year period from 2017 to 2021 to avoid large abrupt payment changes due to the redefinition. This transition policy applies to the new CA localities (areas located in prior localities 03 Marin/Napa/Solano and 99 Rest of California) as indicated in Table 8.F.

For each transition area, the GPCI value is the sum of the current law component and the MSA-based component. For CY 2020, the current law component is 1/3 of the GPCIs that would be in effect if the areas were not redefined, and the MSA-based component is 2/3 times the GPCI computed for the newly defined areas. We created GPCIs for the historic localities to be budget neutral relative to the new MSA-based values before implementing this transition policy. The law also includes a hold harmless provision, so the value in a transition area cannot be less than the value that would have been in force absent the change in locality definition. These values for the California transition areas override the values calculated in the previous step, for payment purposes, to comply with the requirements of Section 220 (h) of the PAMA of 2014.

D. Updated CY 2020 GPCI Values by Locality and Expected Effect on Distribution of Payments

The transition GPCIs for 2020 based on updated source data produce fairly modest changes to the GAF, as shown in Table 4.D.1. The GAF changed by less than half of a percent in 44 localities that collectively account for 44 percent of total RVUs, and no locality had a GAF change of more than 4 percent. The WORK and PE GPCIs had similar distributions of change while that for MP shows much more change. Twenty-eight localities had MP GPCI changes of

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[29] The definition of frontier state is based on 2010 Census data and remains unchanged from the current GPCI calculations. As of 2015, the states which qualified as frontier states were: Montana, Nevada, North Dakota, South Dakota, and Wyoming.

[30] Section 1848(e)(1)(I) of the Act

[31] While the number of localities increases from 9 to 27 under the MSA-based structure, "for the purposes of payment, the actual number of localities under the MSA-based locality structure would be 32." See https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/Locality.html for additional details on the locality configuration.

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10 percent or more, accounting for just under three-tenths of total MP RVUs. Table 7.D.1 presents all of the updated 2020 GPCIs and GAF by locality.

Table 4.D.1: Distribution of Change under Updated GPCIs and GAF, by Count of Localities and Share of RVUs

SIZE OF CHANGE IN MEASURE	WORK GPCI: N	WORK GPCI: %WORK RVUs	PE GPCI: N	PE GPCI: % PE RVUs	MP GPCI: N	MP GPCI: % MP RVUs	GAF: N	GAF: % Total RVUs
≤ -10%	0	0.00%	0	0.00%	18	14.69%	0	0.00%
> -10% to - 4%	0	0.00%	0	0.00%	17	15.86%	0	0.00%
> -4% to -1.5%	18	20.77%	3	2.17%	10	9.30%	8	6.29%
> -1.5% to -0.5%	23	30.71%	18	24.60%	8	7.49%	26	33.21%
> -0.5% to 0.5%	37	37.23%	50	47.67%	3	1.06%	44	44.18%
> 0.5% to 1.5%	32	11.16%	32	23.09%	8	11.16%	28	15.24%
> 1.5% to 4%	2	0.13%	8	2.47%	22	11.51%	6	1.08%
> 4% to 10%	0	0.00%	1	0.01%	16	14.63%	0	0.00%
>10%	0	0.00%	0	0.00%	10	14.30%	0	0.00%

Another way to examine the effect of the new data on the GPCIs is by examining whether there have been big shifts in relative rankings of localities by GPCI and GAF. This can be done fairly simply by comparing the quintile placement of localities under current values to that which they would have under the updated values. As shown in Table 4.D.2, 100 (the sum of the diagonal cells) of the 112 localities have GAFs that are relatively unchanged. Of the remaining 12, none moved more than one quintile. The 100 localities that remain in the same quintile under the updated GAF account for about 84 percent of total RVUs under the PFS.

Table 4.D.2: Distribution of Localities by Current GAF Quintiles by Updated GAF Quintiles

# OF STATE/ LOCALITIES		2020 GAF				
		1ST QUINT.	2ND QUINT.	3RD QUINT.	4TH QUINT.	5TH QUINT.
2019 GAF	1ST QUINT.	21	1	0	0	0
	2ND QUINT.	1	19	2	0	0
	3RD QUINT	0	2	23	0	0
	4TH QUINT.	0	0	2	16	2
	5TH QUINT.	0	0	0	2	21

Note: Quintiles are defined from lowest to highest, so the lowest GAFs are in the 1st quintile.

Each of the three GPCIs exhibited a similar pattern of very little change in quintile rank. In the case of the MP, this lack of movement across quintiles suggests that the larger changes shown in the distribution of MP GPCI changes in Table 4.D.1 above did not result in large changes in positions of localities relative to one another with regard to MP GPCI.

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5 Update of the Malpractice Risk Factors

The malpractice premium data are the basis from which specialty-specific RFs are calculated for use in developing MP RVUs. As described in Section 3 above, the base malpractice premium file includes rates for CMS specialties and service risk groups from multiple insurers in each county of the country. Creating RFs requires summarizing each specialty's rates across the country and then creating the RFs that reflect the relativity of these national rates across CMS specialties (and service risk group, as appropriate). Two policy changes are reflected in the data and RFs described below from the previous update. First, for CY 2020 CMS has harmonized data development and refinement decisions for the MP RVUs consistent with those of the PE RVUs. As a result, those CMS specialties that are excluded from the PE algorithm will also be excluded from the calculation of MP RVUs. Therefore, we have not developed RFs for these specialties, which were excluded from the analytical premium database regardless of the presence of raw premium data. Second, as the result of stakeholder comments and other considerations, CMS has set the risk factor for technical services (TCs) to a value of 1.00. This section describes the process of creating updated risk factors with the updated premium data and examines their effect on MP RVUs.

A. County-level Specialty/Class Price-adjusted Rates

The base rate data includes rates for multiple insurers in each county, so the first step in developing RFs is to create a single county-level rate for each CMS specialty/class. For each specialty/class, the weighted mean premium is calculated in each county, where the weight is the company's market share. The resulting rates are then adjusted for geographic variation as captured by the MP GPCI. The current GPCI (i.e., CY 2019 MP GPCI) is used for this adjustment.

B. National Specialty/Class Rates

A single set of national rates by specialty/class is calculated as the weighted mean of the county-level specialty/class rates, with the weights given by the county's population.

C. Calculating Specialty/Class Risk Factors

Following previous policy, the RF for each specialty is expressed as the ratio of the specialty's national premium to the national premium of a single referent specialty. Historically, this referent was selected as the specialty/service risk groups with the lowest premium which was Allergy/Immunology (03). For the CY 2020 update, Allergy/Immunology is still the referent. The use of the same referent makes comparisons of RFs over time feasible, although it does not perfectly reflect changes in premiums since the referent premium value is subject to change as

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well.[32] Those specialties that had total imputation based on Allergy/Immunology (Table 8.C.2) all have a RF of 1.00, as will TC services.

D. Comparison of New CY 2020 Risk Factors to Existing Values and Their Effect on MP RVUs

Table 7.C shows the specialty/service risk group standardized national premiums and RFs calculated from the new, expanded data collection and development process described above. The table makes clear the structural changes described above with regard to changes in which specialties are subdivided. Consider, for example, OB/GYN (16), which is currently broken into two groups—surgery and OB—but under this approach includes three service risk groups: non-surgery, surgery, and OB. The national premiums for non-surgery and surgery are $16,464 and $39,528, respectively, a range which spans the previous value for surgery of $29,027. Similarly, as mentioned above, we have created surgery and non-surgery risk groups for Podiatry, based on the prevalence of insurers' reported premiums in that structure. However, Podiatry had a single rate in the previous update. The table includes two rows for the updated 2020 approach, so the current single premium and RF are repeated in the two rows and labeled "ALL*" and therefore are not directly comparable to the new values which differ by service risk group.

Overall, premiums fell about 8 percent across the 2020 specialties/service risk groups, with premiums for surgical risk classes falling more than non-surgical rates. There was relatively little change in relative premiums, based on a comparison of quintiles of current and 2020 standardized national premiums by specialty/service risk factor, as shown in Table 5.D.1. Sixty-nine (sum of the diagonal cells) of the 82 specialty/service premiums that can be directly compared between 2015 and 2020[33] are in the same quintile both years; these specialties account for nearly 94 percent of the physician work RVUs provided by the providers included in the table. All but 2 of the remaining 13 shifted into an adjacent quintile. Two specialty/service risk groups —CRNAs and Anesthesiologist assistants—had 2015 premiums in the 3rd quintile but have values in the 1st quintile in the 2020 data. The reason their premiums dropped so much is that the 2020 data reflect actual premiums from filings, while in the previous update these specialties were assigned the same premiums as anesthesiologists.

[32] The availability of premium data for a wider array of specialties means that we have data for a number of non-physician provider specialties that have lower premiums. The use of a significantly lower referent premium would have led to RFs that are much higher than the current ones.

[33] Specialties/service risk groups that were restructured were omitted from this analysis, since the premiums are not comparable between the two data sets.

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Table 5.D.1: Distribution of Specialty/Service Risk Group National Premiums by Quintiles for Current National Premiums by Those for Updated National Premium

# SPECIALTY / RISK SERVICE GROUPS		UPDATED 2020 NATIONAL PREMIUM				
		1ST QUINT.	2ND QUINT.	3RD QUINT.	4TH QUINT.	5TH QUINT.
CURRENT NATIONAL PREMIUM	1ST QUINT.	19	0	0	0	0
	2ND QUINT.	0	10	3	0	0
	3RD QUINT	2	1	14	2	0
	4TH QUINT.	0	0	0	12	2
	5TH QUINT.	0	0	0	2	15

Note: Quintiles are defined from lowest to highest, so the lowest premiums are in the 1st quintile.

The RFs themselves had a larger overall drop than the premiums themselves due to the slight increase in the referent Allergy/Immunology (03) premium from $8,398 to $8,874. This increase, combined with the decline in standardized national premiums for many specialties/service risk groups, results in a compression of the variance of RFs across the groups. This is one of the challenges of defining the RFs relative to a specific value rather than as a more standard index construct with a weighted mean of one and it complicates analysis of RFs over time. Since the RFs affect the calculation of MP RVUs, it may be more useful to examine the effect of these new RFs on MP RVUs rather than to analyze them themselves.

We recalculated MP RVUs using these new RFs[34] and all of the same input files as used to create the values for the 2019 Correction Notice. The impact on MP RVUs from updated premiums and RFs is small. MP RVUs did not change for most specialties compared with pre-update values, and for specialties that did experience a change, the change was no more than 1 percent. The standard impact table CMS uses to report the effect of changes in PFS values shows impacts of 1 percent in MP RVUs for five specialties (table not shown):

- Four impact specialties had overall MP RVU decrease of 1 percent in the impact table: Chiropractor, Dermatology, Neurosurgery, and Oral/maxillofacial surgery.
- One impact specialty—Emergency Medicine—showed a 1 percent increase.

Among these specialties, one—Chiropractor—is now based on actual premiums from filings, while it had formerly been based on values from another specialty. The relative change in MP RVUs for the other specialties reflect relative changes in the underlying premium data.

Another way to examine the effect of the new RFs on MP RVUs is to see if there were major shifts in relative RVUs from current values to those that were obtained with the new RFs. Instead of comparing quintiles, as we did with the premium data, we have categorized current and updated MP RVUs into deciles, producing the distribution shown in Table 5.D.2. Overall, the MP RVUs of over 90 percent (the sum of diagonal cells) of services stayed in the same decile

[34] We removed the extensive recoding of RFs included in the MP RVU data preparation process that was associated with the previous RFs, so the values used are exactly those presented in the RF table.

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after the update of risk factors. For services with MP RVUs moving out of their pre-update decile, no service moved up or down by more one decile. Among all services with MP RVUs remaining in the same decile, their volume-weighted MP RVUs account for 98.9 percent and 99.2 percent of total MP RVUs before and after the update, respectively (data not shown). The relatively stable ranking of MP RVUs before and after the risk factor update is consistent with what is shown in the modest specialty impacts described above and suggests that the methodological changes and data updates in the calculation of risk factors for 2020 have measurable but moderate effects on MP RVUs.

Table 5.D.2: Distribution of CY2019 MP RVUs, by Decile, by MP RVUs Based on Updated RFs, by Decile

DECILES OF MP RVUs from CY2019 Correct Notice	DECILES OF MP RVUs CALCULATED WITH UPDATED RISK FACTORS										
	ALL	1ST DEC.	2ND DEC.	3RD DEC.	4TH DEC.	5TH DEC.	6TH DEC.	7TH DEC.	8TH DEC.	9TH DEC.	10TH DEC.
ALL	100	10	10	10	10	10	10	10	10	10	10
1ST DECILE	10	9.78	0.21	0	0	0	0	0	0	0	0
2ND DEC.	10	0.2	9.45	0.35	0	0	0	0	0	0	0
3RD DEC.	10	0	0.34	9.29	0.38	0	0	0	0	0	0
4TH DEC.	10	0	0	0.36	9.16	0.47	0	0	0	0	0
5TH DEC.	10	0	0	0	0.46	8.96	0.58	0	0	0	0
6TH DEC.	10	0	0	0	0	0.57	8.87	0.57	0	0	0
7TH DEC.	10	0	0	0	0	0	0.56	8.94	0.49	0	0
8TH DEC.	10	0	0	0	0	0	0	0.48	9.11	0.41	0
9TH DEC.	10	0	0	0	0	0	0	0	0.4	9.33	0.28
10TH DEC.	10	0.01	0	0	0	0	0	0	0	0.27	9.71

Note: Deciles are defined from lowest to highest, so the lowest MP RVUs are in the 1st decile.

6 Conclusions

This report describes the process used to collect malpractice premium data and then update the GPCIs and MP RFs for 2020, as required by law. We collected a broader set of premium filings than the previous update and refined the method for matching them to CMS specialty and service risk group. The resulting changes in MP RF are primarily the result of both updated raw premium data and improvements to the way that the data were developed into an analytic premium data set for measure calculation. Unfortunately, given differences in the data development processes between the previous and this update, it is difficult to compare the raw and final premium data to identify the role of updated data versus revised data development methods in the differences in final values. Changes in GPCIs come from updated raw wage and rent data, improved treatment of malpractice premium data, and modified methodology for the construction of the indices.

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In addition to capturing a broader set of filings, another key change was to develop CMS specialty/service risk group premiums at the premium filing level before summarizing across filings. This approach led to changes in the way that seven specialties were subdivided into subgroups. In addition, we were able to obtain data for 16 specialties that in the last update were previously assigned values from other specialties. Ultimately, the importance of the new data and the way they were used to develop final standardized national premiums by specialty and service risk group is demonstrated through changes, if any, in the MP RVUs and MP GPCI that are derived from them.

With regard to the MP RVUs, only a few specialties experience a drop of 1 percent or more in total PFS payments due to introduction of MP RVUs based on RFs derived from these new premium data. One of them (Chiropractor) is a specialty for which we were able to obtain data from filings, while in last update its premiums were imputed from another specialty.

Most localities do not experience large shifts under the updated GPCIs and GAFs. The GAF in 44 localities (accounting for approximately 44 percent of PFS payments) moved by less than a half of a percent. In general, the WORK and PE GPCIs show very modest changes as a result of their updated data, but the MP GPCI, when compared at the locality level, exhibits changes of over 10 percent in 28 of the 112 localities, a degree of change that has occurred in previous updates. However, these changes in locality-level values do not appear to have significantly shifted the relative relationship of the MP GPCI across localities.

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7 Data tables

This section reports locality-level and specialty-level measures of data characteristics and the final measures of interest.

A. Malpractice Insurance Market Share of Filings Captured, by State

The state market share data are reported at the insurance group level, so we have reported the number of groups for which we obtained filings. Many groups offer policies under more than one company within a state, and some companies file more than one filing with different combinations of specialties, for example. Therefore, we obtained many more filings per state than the number of groups.

TABLE 7.A: Number of Insurer Groups and Total Market Share of PLI Filings Captured in Updated Premium Data, by State

STATE	# OF INSURER GROUPS	MARKET SHARE CAPTURED
AL	2	59%
AK	2	60%
AZ	3	61%
AR	4	57%
CA	4	50%
CO	3	64%
CT	4	30%
DE	3	55%
DC*	4	57%
FL*	5	55%
GA*	3	59%
HI*	3	50%
ID	4	56%
IL	3	50%
IN	4	56%
IA	2	53%
KS	3	54%
KY*	2	37%
LA	1	52%
ME	1	73%
MD	4	51%
MA*	3	32%
MI	4	43%
MN	4	20%
MS	4	40%
MO	4	52%
MT	5	55%
NE	4	44%
NV	4	54%
NH	4	64%
NJ	2	53%
NM	4	53%
NY	3	32%
NC	2	51%
ND	2	60%
OH*	3	52%
OK	1	54%
OR	3	61%
PA	4	27%
RI	3	55%
SC	3	57%
SD*	1	63%
TN	2	59%
TX	4	51%
UT	2	58%
VT	2	70%
VA	4	43%
WA*	3	52%
WV	4	54%
WI	3	60%
WY	3	54%
PR*	2	46%

Note: Asterisk (*) denotes non-SERFF states.

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B. Share of U.S. Population Covered by Included Malpractice Filings, by Specialty and Service Risk Group

To understand the completeness of specialty/service risk groups included in malpractice filings, we developed a measure of the share of the U.S. population included in a filing, defined as the product of the covered population as a share of the U.S. total and the company's market share. This measure is reported below at three different stages of data development: (1) the raw filings we collected; (2) after partial imputation as described in the report; and (3) final premium values. Specialty/service risk groups that had a value of less than 20 percent after partial imputation were then subject to total imputation, so their final population share is equal to that of the source specialty from which premium data were mapped in the final imputation step.

TABLE 7.B: Share of U.S. Population Covered by Included Malpractice Filings Underlying Updated Risk Factors and MP GPCIs, by Specialty and Service Risk Group

CMS SPECIALTY	SERVICE RISK GROUP	% U.S. POP - RAW FILINGS	% U.S. POP - AFTER PARTIAL IMPUTATION	% U.S. POP - FINAL
01-General practice	NO SURG	40.7%	43.1%	43.1%
01-General practice	SURG	39.9%	42.2%	42.2%
01-General practice	OB	33.4%	37.3%	37.3%
02-General surgery	ALL	43.2%	43.2%	43.2%
03-Allergy/immunology	ALL	42.9%	42.9%	42.9%
04-Otolaryngology	NO SURG	32.0%	32.0%	32.0%
04-Otolaryngology	SURG	43.2%	43.2%	43.2%
05-Anesthesiology	ALL	43.6%	43.6%	43.6%
06-Cardiology	NO SURG	34.3%	34.3%	34.3%
06-Cardiology	SURG	43.1%	43.1%	43.1%
07-Dermatology	NO SURG	39.4%	39.4%	39.4%
07-Dermatology	SURG	42.8%	42.8%	42.8%
08-Family practice	NO SURG	41.5%	43.1%	43.1%
08-Family practice	SURG	40.6%	42.2%	42.2%

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CMS SPECIALTY	SERVICE RISK GROUP	% U.S. POP - RAW FILINGS	% U.S. POP - AFTER PARTIAL IMPUTATION	% U.S. POP - FINAL
08-Family practice	OB	33.1%	37.3%	37.3%
09-Interventional pain management	ALL	13.9%	35.0%	35.0%
10-Gastroenterology	NO SURG	37.0%	37.0%	37.0%
10-Gastroenterology	SURG	41.7%	41.7%	41.7%
11-Internal medicine	ALL	43.6%	43.7%	43.7%
12-Osteopathic manipulative therapy	ALL	1.4%	1.4%	42.9%
13-Neurology	NO SURG	39.9%	39.9%	39.9%
13-Neurology	SURG	42.9%	42.9%	42.9%
14-Neurosurgery	ALL	42.7%	42.9%	42.9%
15-Speech language pathology	ALL	10.9%	14.8%	42.9%
16-Obstetrics/gynecology	NO SURG	28.6%	28.6%	28.6%
16-Obstetrics/gynecology	SURG	43.7%	43.7%	43.7%
16-Obstetrics/gynecology	OB	42.1%	42.1%	42.1%
17-Hospice and palliative care	ALL	3.8%	3.8%	42.9%
18-Ophthalmology	NO SURG	42.9%	42.9%	42.9%
18-Ophthalmology	SURG	43.4%	43.4%	43.4%
19-Oral surgery (dentists only)	ALL	23.4%	23.4%	23.4%
20-Orthopedic surgery	ALL	43.2%	43.2%	43.2%
21-Cardiac electrophysiology	NO SURG	0.0%	0.0%	34.3%
21-Cardiac electrophysiology	SURG	0.0%	0.0%	43.1%
22-Pathology	ALL	43.3%	43.3%	43.3%
23-Sports medicine	ALL	4.2%	41.5%	41.5%
24-Plastic and reconstructive surgery	ALL	42.3%	42.3%	42.3%
25-Physical medicine and rehabilitation	ALL	42.0%	42.0%	42.0%
26-Psychiatry	ALL	45.0%	45.0%	45.0%

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CMS SPECIALTY	SERVICE RISK GROUP	% U.S. POP - RAW FILINGS	% U.S. POP - AFTER PARTIAL IMPUTATION	% U.S. POP - FINAL
27-Geriatric psychiatry	ALL	0.0%	0.0%	45.0%
28-Colorectal surgery	ALL	41.6%	41.6%	41.6%
29-Pulmonary disease	ALL	41.3%	41.3%	41.3%
30-Diagnostic radiology	ALL	43.6%	43.6%	43.6%
31-Intensive cardiac rehab	ALL	0.0%	0.0%	34.3%
32-Anesthesiologist assistants	ALL	12.0%	28.7%	28.7%
33-Thoracic surgery	ALL	41.3%	41.3%	41.3%
34-Urology	NO SURG	21.1%	21.1%	21.1%
34-Urology	SURG	43.5%	43.5%	43.5%
35-Chiropractic	ALL	23.4%	23.4%	23.4%
36-Nuclear medicine	ALL	35.0%	35.0%	35.0%
37-Pediatric medicine	ALL	43.7%	43.7%	43.7%
38-Geriatric medicine	NO SURG	25.0%	43.1%	43.1%
38-Geriatric medicine	SURG	25.5%	42.1%	42.1%
39-Nephrology	NO SURG	29.4%	29.4%	29.4%
39-Nephrology	SURG	33.4%	33.4%	33.4%
40-Hand surgery	ALL	40.1%	40.1%	40.1%
41-Optometry	ALL	21.5%	21.5%	21.5%
42-Certified nurse midwife	ALL	20.7%	20.7%	20.7%
43-CRNA	ALL	27.9%	28.7%	28.7%
44-Infectious disease	ALL	32.0%	32.0%	32.0%
45-Mammography screening center	ALL	0.0%	0.0%	42.9%
46-Endocrinology	NO SURG	27.3%	27.3%	27.3%
46-Endocrinology	SURG	29.7%	29.7%	29.7%
47-Independent diagnostic testing facility	ALL	0.0%	0.0%	42.9%

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CMS SPECIALTY	SERVICE RISK GROUP	% U.S. POP - RAW FILINGS	% U.S. POP - AFTER PARTIAL IMPUTATION	% U.S. POP - FINAL
48-Podiatry	NO SURG	35.3%	35.3%	35.3%
48-Podiatry	SURG	36.8%	36.8%	36.8%
62-Psychologist	ALL	16.6%	16.6%	42.9%
63-Portable x-ray supplier	ALL	0.0%	0.0%	42.9%
64-Audiologist	ALL	14.2%	14.2%	42.9%
65-Physical therapist	ALL	14.8%	15.3%	42.9%
66-Rheumatology	ALL	34.2%	34.2%	34.2%
67-Occupational therapist	ALL	14.5%	15.3%	42.9%
68-Clinical psychologist	ALL	5.4%	16.6%	42.9%
69-Clinical laboratory	ALL	0.0%	0.0%	42.9%
70-Multispecialty clinic or group practice	ALL	0.0%	0.0%	21.9%
71-Registered dietician/nutrition professional	ALL	14.0%	14.0%	42.9%
72-Pain management	ALL	31.9%	35.0%	35.0%
75-Slide preparation facilities	ALL	0.0%	0.0%	42.9%
76-Peripheral vascular disease	ALL	1.2%	34.1%	34.1%
77-Vascular surgery	ALL	34.1%	34.1%	34.1%
78-Cardiac surgery	ALL	42.0%	43.1%	43.1%
79-Addiction medicine	ALL	7.5%	7.5%	42.9%
80-Licensed clinical social worker	ALL	14.3%	14.3%	42.9%
81-Critical care (intensivists)	ALL	30.5%	30.5%	30.5%
82-Hematology	ALL	26.8%	35.3%	35.3%
83-Hematology/oncology	ALL	20.0%	35.3%	35.3%
84-Preventive medicine	ALL	32.0%	43.6%	43.6%
85-Maxillofacial surgery	ALL	25.7%	25.7%	25.7%
86-Neuropsychiatry	ALL	0.0%	0.0%	45.0%

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CMS SPECIALTY	SERVICE RISK GROUP	% U.S. POP - RAW FILINGS	% U.S. POP - AFTER PARTIAL IMPUTATION	% U.S. POP - FINAL
90-Medical oncology	ALL	18.6%	30.0%	30.0%
91-Surgical oncology	ALL	8.9%	43.2%	43.2%
92-Radiation oncology	ALL	22.3%	22.3%	22.3%
93-Emergency medicine	NO SURG	35.9%	35.9%	35.9%
93-Emergency medicine	SURG	43.1%	43.1%	43.1%
94-Interventional radiology	ALL	22.8%	22.8%	22.8%
98-Gynecologist/oncologist	ALL	0.0%	0.0%	43.7%
99-Unknown physician specialty	ALL	21.9%	21.9%	21.9%
C0-Sleep medicine	ALL	7.0%	40.9%	40.9%
C3-Interventional cardiology	ALL	2.5%	43.1%	43.1%
C6-Hospitalist	ALL	31.8%	43.6%	43.6%
C7-Advanced heart failure and transplant cardiology	ALL	0.0%	0.0%	0.0%

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C. Malpractice Premiums and RFS by Specialty and Service Risk group, Current and Final 2020

The final normalized national premium and PLI risk factors by CMS specialty and service risk group are reported in Table 7.C. Changes in the number and type of categories within a specialty are evident by either the absence of a value in the current risk factor and premium columns, indicating that there is not a comparable value available for our new service risk groups, or by groups labelled "ALL*", indicating that a single specialty-specific value is being repeated to align with multiple groups in the specialty for comparison purposes.

TABLE 7.C: National PLI Premiums and Malpractice Risk Factors, by CMS Specialty and Service Risk Group

SPECIALTY	2020 SERVICE RISK GROUP	2020 RISK FACTOR	2020 NATIONAL PREMIUM	CURRENT SERVICE RISK GROUP	CURRENT RISK FACTOR	CURRENT NATIONAL PREMIUM
01-General practice	NO SURG	1.628	$ 14,451	NO SURG	1.745	$ 14,657
01-General practice	SURG	3.476	$ 30,844	SURG	4.029	$ 33,836
01-General practice	OB	3.708	$ 32,906	-	-	-
02-General surgery	ALL	6.876	$ 61,015	ALL	7.180	$ 60,299
03-Allergy/immunology	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
04-Otolaryngology	NO SURG	1.642	$ 14,570	NO SURG	1.943	$ 16,314
04-Otolaryngology	SURG	3.867	$ 34,312	SURG	4.254	$ 35,730
05-Anesthesiology	ALL	2.204	$ 19,558	ALL	2.310	$ 19,403
06-Cardiology	NO SURG	1.895	$ 16,813	NO SURG	1.931	$ 16,216
06-Cardiology	SURG	6.368	$ 56,507	SURG	6.982	$ 58,634
07-Dermatology	NO SURG	1.090	$ 9,670	NO SURG	1.393	$ 11,696
07-Dermatology	SURG	2.626	$ 23,307	SURG	4.458	$ 37,442
08-Family practice	NO SURG	1.628	$ 14,445	NO SURG	1.723	$ 14,471
08-Family practice	SURG	3.616	$ 32,088	SURG	4.010	$ 33,676
08-Family practice	OB	3.700	$ 32,835	OB	4.965	$ 41,696
09-Interventional pain management	ALL	2.996	$ 26,587	ALL	2.310	$ 19,403

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SPECIALTY	2020 SERVICE RISK GROUP	2020 RISK FACTOR	2020 NATIONAL PREMIUM	CURRENT SERVICE RISK GROUP	CURRENT RISK FACTOR	CURRENT NATIONAL PREMIUM
10-Gastroenterology	NO SURG	1.814	$ 16,099	NO SURG	2.091	$ 17,563
10-Gastroenterology	SURG	3.011	$ 26,720	SURG	3.830	$ 32,166
11-Internal medicine	ALL	1.783	$ 15,819	ALL	1.893	$ 15,896
12-Osteopathic manipulative therapy	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
13-Neurology	NO SURG	2.246	$ 19,928	NO SURG	2.467	$ 20,715
13-Neurology	SURG	10.433	$ 92,582	SURG	12.266	$ 103,010
14-Neurosurgery	ALL	10.433	$ 92,582	ALL	12.266	$ 103,010
15-Speech language pathology	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
16-Obstetrics/gynecology	NO SURG	1.855	$ 16,464	-	-	-
16-Obstetrics/gynecology	SURG	4.454	$ 39,528	SURG	3.456	$ 29,027
16-Obstetrics/gynecology	OB	7.819	$ 69,387	OB	7.615	$ 63,952
17-Hospice and palliative care	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
18-Ophthalmology	NO SURG	1.169	$ 10,369	NO SURG	1.193	$ 10,019
18-Ophthalmology	SURG	2.098	$ 18,620	SURG	2.148	$ 18,038
19-Oral surgery	ALL	2.412	$ 21,401	ALL	5.035	$ 42,283
20-Orthopedic surgery	ALL	5.612	$ 49,797	ALL	6.073	$ 51,005
21-Cardiac electrophysiology	NO SURG	1.895	$ 16,813	NO SURG	1.931	$ 16,216
21-Cardiac electrophysiology	SURG	6.368	$ 56,507	SURG	6.982	$ 58,634
22-Pathology	ALL	1.514	$ 13,437	ALL	1.627	$ 13,666
23-Sports medicine	ALL*	1.671	$ 14,826	NO SURG	1.745	$ 14,657
23-Sports medicine	ALL*	1.671	$ 14,826	SURG	4.029	$ 33,836
24-Plastic and reconstructive surgery	ALL	4.981	$ 44,205	ALL	5.035	$ 42,283
25-Physical medicine and rehabilitation	ALL	1.382	$ 12,261	ALL	1.452	$ 12,196
26-Psychiatry	ALL	1.021	$ 9,060	ALL	1.124	$ 9,443
27-Geriatric psychiatry	ALL	1.021	$ 9,060	ALL	1.124	$ 9,443

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SPECIALTY	2020 SERVICE RISK GROUP	2020 RISK FACTOR	2020 NATIONAL PREMIUM	CURRENT SERVICE RISK GROUP	CURRENT RISK FACTOR	CURRENT NATIONAL PREMIUM
28-Colorectal surgery	ALL	3.586	$ 31,824	ALL	4.265	$ 35,817
29-Pulmonary disease	ALL	2.060	$ 18,282	ALL	2.216	$ 18,611
30-Diagnostic radiology	ALL	2.266	$ 20,105	ALL	2.558	$ 21,481
31-Intensive cardiac rehab	ALL	1.895	$ 16,813	-	-	-
32-Anesthesiologist assistants	ALL	0.605	$ 5,364	ALL	2.310	$ 19,403
33-Thoracic surgery	ALL	6.452	$ 57,260	ALL	7.024	$ 58,988
34-Urology	NO SURG	1.673	$ 14,849	NO SURG	1.622	$ 13,625
34-Urology	SURG	3.242	$ 28,767	SURG	3.278	$ 27,529
35-Chiropractic	ALL	0.519	$ 4,603	ALL	1.000	$ 8,398
36-Nuclear medicine	ALL	1.236	$ 10,966	ALL	1.379	$ 11,577
37-Pediatric medicine	ALL	1.818	$ 16,131	ALL	1.889	$ 15,867
38-Geriatric medicine	NO SURG	1.490	$ 13,220	NO SURG	1.675	$ 14,071
38-Geriatric medicine	SURG	3.555	$ 31,550	SURG	4.486	$ 37,671
39-Nephrology	NO SURG	1.672	$ 14,833	NO SURG	1.642	$ 13,787
39-Nephrology	SURG	2.907	$ 25,794	SURG	3.701	$ 31,080
40-Hand surgery	ALL	4.449	$ 39,481	ALL	4.708	$ 39,539
41-Optometry	ALL	0.173	$ 1,539	ALL	1.000	$ 8,398
42-Certified nurse midwife	ALL*	2.057	$ 18,256	SURG, NO OB	3.456	$ 29,027
42-Certified nurse midwife	ALL*	2.057	$ 18,256	SURG W/OB	7.615	$ 63,952
43-CRNA	ALL	0.683	$ 6,061	ALL	2.310	$ 19,403
44-Infectious disease	ALL	2.109	$ 18,713	ALL	2.260	$ 18,980
45-Mammography screening center	ALL	1.000	$ 8,874	ALL	0.871	$ 7,306
46-Endocrinology	NO SURG	1.594	$ 14,148	NO SURG	1.697	$ 14,252
46-Endocrinology	SURG	3.271	$ 29,030	SURG	3.543	$ 29,754

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SPECIALTY	2020 SERVICE RISK GROUP	2020 RISK FACTOR	2020 NATIONAL PREMIUM	CURRENT SERVICE RISK GROUP	CURRENT RISK FACTOR	CURRENT NATIONAL PREMIUM
47-Independent diagnostic testing facility	ALL	1.000	$ 8,874	ALL	0.871	$ 7,306
48-Podiatry	NO SURG	1.268	$ 11,253	ALL*	2.024	$ 16,994
48-Podiatry	SURG	2.180	$ 19,346	ALL*	2.024	$ 16,994
62-Psychologist	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
63-Portable x-ray supplier	ALL	1.000	$ 8,874	ALL	0.871	$ 7,306
64-Audiologist	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
65-Physical therapist	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
66-Rheumatology	ALL	1.634	$ 14,499	ALL	1.690	$ 14,192
67-Occupational therapist	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
68-Clinical psychologist	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
69-Clinical laboratory	ALL	1.000	$ 8,874	ALL	0.871	$ 7,306
70-Multispecialty clinic or group practice	ALL	2.246	$ 19,929	-	-	-
71-Registered dietician/nutrition professional	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
72-Pain management	ALL	2.968	$ 26,342	ALL	2.310	$ 19,403
75-Slide preparation facilities	ALL	1.000	$ 8,874	ALL	0.871	$ 7,306
76-Peripheral vascular disease	ALL	6.797	$ 60,318	ALL	6.841	$ 57,451
77-Vascular surgery	ALL	6.797	$ 60,318	ALL	6.841	$ 57,451
78-Cardiac surgery	ALL	6.368	$ 56,507	ALL	6.971	$ 58,540
79-Addiction medicine	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
80-Licensed clinical social worker	ALL	1.000	$ 8,874	ALL	1.000	$ 8,398
81-Critical care (intensivists)	ALL	2.278	$ 20,215	ALL	2.920	$ 24,525
82-Hematology	ALL	1.788	$ 15,870	ALL	1.787	$ 15,009
83-Hematology/oncology	ALL	1.848	$ 16,398	ALL	1.832	$ 15,385
84-Preventive medicine	ALL	1.379	$ 12,237	ALL	1.345	$ 11,294
85-Maxillofacial surgery	ALL	2.617	$ 23,228	ALL	5.035	$ 42,283

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SPECIALTY	2020 SERVICE RISK GROUP	2020 RISK FACTOR	2020 NATIONAL PREMIUM	CURRENT SERVICE RISK GROUP	CURRENT RISK FACTOR	CURRENT NATIONAL PREMIUM
86-Neuropsychiatry	ALL	1.021	$ 9,060	ALL	1.124	$ 9,443
90-Medical oncology	ALL	1.860	$ 16,506	ALL	1.832	$ 15,385
91-Surgical oncology	ALL	6.552	$ 58,146	ALL	7.180	$ 60,299
92-Radiation oncology	ALL	2.029	$ 18,007	ALL	2.119	$ 17,797
93-Emergency medicine	NO SURG	2.997	$ 26,592	NO SURG	2.837	$ 23,825
93-Emergency medicine	SURG	5.763	$ 51,137	SURG	4.742	$ 39,821
94-Interventional radiology	ALL	2.764	$ 24,532	ALL	2.558	$ 21,481
98-Gynecologist/oncologist	ALL	4.454	$ 39,528	ALL	7.180	$ 60,299
99-Unknown physician specialty	ALL*	2.246	$ 19,929	NO SURG	1.745	$ 14,657
99-Unknown physician specialty	ALL*	2.246	$ 19,929	SURG	4.029	$ 33,836
C0-Sleep medicine	ALL	1.614	$ 14,326	NO SURG	1.745	$ 14,657
C0-Sleep medicine	ALL	1.614	$ 14,326	SURG	4.029	$ 33,836
C3-Interventional cardiology	ALL	6.211	$ 55,119	-	-	-
C6-Hospitalist	ALL	2.133	$ 18,932	-	-	-
C7-Advanced heart failure and transplant cardiology	ALL	6.368	$ 56,507	-	-	-

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D. GPCIs, GAFs, and Related Data

TABLE 7.D.1: CY 2020 GPCIs and GAF Based on Updated Data, by Payment Locality

STATE	LOC. CODE	STATE/LOCALITY NAME	WORK GPCI	PE GPCI	MP GPCI	GAF	% CHANGE - WORK GPCI	% CHANGE - PE GPCI	% CHANGE - MP GPCI	% CHANGE GEOGRAPHIC ADJUSTED - TOTAL RVUS
AL	00	ALABAMA	0.985	0.889	0.707	0.930	-1.5%	-0.1%	43.6%	0.1%
AK	01	ALASKA	1.500	1.118	0.661	1.293	0.0%	0.1%	-6.7%	-0.1%
AZ	00	ARIZONA	0.991	0.961	0.846	0.971	-0.9%	-1.0%	1.4%	-0.9%
AR	13	ARKANSAS	0.976	0.859	0.521	0.904	-2.4%	-1.5%	-9.6%	-2.2%
CA	05	SAN FRANCISCO-OAKLAND-HAYWARD (SAN FRANCISCO CNTY)	1.076	1.327	0.440	1.161	0.1%	0.1%	4.4%	0.2%
CA	06	SAN FRANCISCO-OAKLAND-HAYWARD (SAN MATEO CNTY)	1.076	1.327	0.440	1.161	0.1%	0.1%	4.4%	0.2%
CA	07	SAN FRANCISCO-OAKLAND-HAYWARD (ALAMEDA/CONTRA COSTA CNTY)	1.076	1.327	0.440	1.161	0.1%	0.1%	4.4%	0.2%
CA	09	SAN JOSE-SUNNYVALE-SANTA CLARA (SANTA CLARA CNTY)	1.089	1.369	0.401	1.185	0.6%	1.1%	3.4%	0.9%
CA	17	OXNARD-THOUSAND OAKS-VENTURA	1.026	1.178	0.700	1.080	0.2%	0.1%	3.9%	0.2%
CA	18	LOS ANGELES-LONG BEACH-ANAHEIM (LOS ANGELES CNTY)	1.047	1.176	0.725	1.091	0.1%	-0.1%	4.5%	0.1%
CA	26	LOS ANGELES-LONG BEACH-ANAHEIM (ORANGE CNTY)	1.047	1.176	0.725	1.091	0.1%	-0.1%	4.5%	0.1%

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STATE	LOC. CODE	STATE/LOCALITY NAME	WORK GPCI	PE GPCI	MP GPCI	GAF	% CHANGE - WORK GPCI	% CHANGE - PE GPCI	% CHANGE - MP GPCI	% CHANGE GEOGRAPHIC ADJUSTED - TOTAL RVUS
CA	51	NAPA	1.064	1.284	0.490	1.138	0.8%	2.3%	6.9%	1.7%
CA	52	SAN FRANCISCO-OAKLAND-HAYWARD (MARIN CNTY)	1.072	1.314	0.461	1.154	0.7%	1.8%	0.6%	1.2%
CA	53	VALLEJO-FAIRFIELD	1.064	1.284	0.490	1.138	0.8%	2.3%	6.9%	1.7%
CA	54	BAKERSFIELD	1.033	1.084	0.674	1.041	1.3%	0.9%	9.1%	1.3%
CA	55	CHICO	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	56	FRESNO	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	57	HANFORD-CORCORAN	1.027	1.084	0.571	1.033	0.6%	0.9%	1.6%	0.8%
CA	58	MADERA	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	59	MERCED	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	60	MODESTO	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	61	REDDING	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	62	RIVERSIDE-SAN BERNARDINO-ONTARIO	1.027	1.084	0.827	1.044	0.6%	0.9%	9.8%	1.0%
CA	63	SACRAMENTO--ROSEVILLE--ARDEN-ARCADE	1.034	1.084	0.571	1.037	0.7%	-0.7%	1.6%	0.0%
CA	64	SALINAS	1.052	1.117	0.571	1.060	2.5%	1.4%	1.6%	2.0%
CA	65	SAN JOSE-SUNNYVALE-SANTA CLARA (SAN BENITO CNTY)	1.073	1.284	0.571	1.146	2.0%	5.7%	1.6%	3.7%
CA	66	SANTA CRUZ-WATSONVILLE	1.039	1.164	0.571	1.075	0.9%	0.3%	1.6%	0.6%
CA	67	SANTA ROSA	1.039	1.146	0.571	1.067	1.4%	1.4%	1.6%	1.4%
CA	68	STOCKTON-LODI	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	69	VISALIA-PORTERVILLE	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%

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STATE	LOC. CODE	STATE/LOCALITY NAME	WORK GPCI	PE GPCI	MP GPCI	GAF	% CHANGE - WORK GPCI	% CHANGE - PE GPCI	% CHANGE - MP GPCI	% CHANGE GEOGRAPHIC ADJUSTED - TOTAL RVUS
CA	70	YUBA CITY	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CA	71	EL CENTRO	1.027	1.084	0.603	1.034	0.7%	0.9%	5.9%	0.9%
CA	72	SAN DIEGO-CARLSBAD	1.033	1.135	0.604	1.060	1.0%	1.7%	5.9%	1.5%
CA	73	SAN LUIS OBISPO-PASO ROBLES-ARROYO GRANDE	1.027	1.087	0.571	1.034	0.7%	0.3%	1.6%	0.5%
CA	74	SANTA MARIA-SANTA BARBARA	1.036	1.145	0.571	1.065	0.4%	1.7%	1.6%	1.1%
CA	75	REST OF CALIFORNIA	1.027	1.084	0.571	1.033	0.7%	0.9%	1.6%	0.8%
CO	01	COLORADO	1.000	1.033	0.905	1.011	0.0%	1.4%	-13.2%	0.0%
CT	00	CONNECTICUT	1.029	1.113	1.094	1.069	0.8%	0.1%	-12.8%	-0.2%
DE	01	DELAWARE	1.006	1.021	1.023	1.013	-0.1%	0.2%	-8.6%	-0.4%
DC	01	DC + MD/VA SUBURBS	1.049	1.221	1.277	1.136	0.4%	1.3%	1.3%	0.9%
FL	03	FORT LAUDERDALE	0.990	1.006	1.828	1.033	-1.0%	-0.6%	1.7%	-0.6%
FL	04	MIAMI	0.992	1.026	2.598	1.076	-0.8%	-0.3%	1.2%	-0.4%
FL	99	REST OF FLORIDA	0.985	0.946	1.396	0.985	-1.5%	-0.7%	2.8%	-0.9%
GA	01	ATLANTA	1.000	0.998	0.996	0.999	0.0%	0.1%	-8.4%	-0.4%
GA	99	REST OF GEORGIA	0.987	0.889	0.989	0.943	-1.3%	-1.1%	-7.9%	-1.5%
HI	01	HAWAII	1.006	1.144	0.644	1.052	0.5%	-0.1%	4.9%	0.3%
ID	00	IDAHO	0.977	0.890	0.464	0.916	-2.3%	-1.4%	-9.4%	-2.1%
IL	12	EAST ST. LOUIS	0.993	0.939	1.723	1.000	-0.7%	0.3%	-3.5%	-0.5%
IL	15	SUBURBAN CHICAGO	1.008	1.057	1.535	1.053	-0.1%	0.4%	-1.9%	0.0%
IL	16	CHICAGO	1.009	1.039	1.898	1.061	0.1%	0.5%	-1.4%	0.1%
IL	99	REST OF ILLINOIS	0.987	0.916	1.195	0.964	-1.3%	-0.4%	-1.1%	-0.9%
IN	00	INDIANA	0.982	0.910	0.422	0.925	-1.8%	-1.0%	11.4%	-1.2%
IA	00	IOWA	0.984	0.907	0.424	0.926	-1.6%	0.0%	0.2%	-0.9%

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STATE	LOC. CODE	STATE/LOCALITY NAME	WORK GPCI	PE GPCI	MP GPCI	GAF	% CHANGE - WORK GPCI	% CHANGE - PE GPCI	% CHANGE - MP GPCI	% CHANGE GEOGRAPHIC ADJUSTED - TOTAL RVUS
KS	00	KANSAS	0.982	0.910	0.536	0.930	-1.8%	-0.2%	-12.8%	-1.4%
KY	00	KENTUCKY	0.985	0.874	0.823	0.928	-1.5%	-0.6%	0.5%	-1.1%
LA	01	NEW ORLEANS	0.989	0.947	1.400	0.987	-1.1%	-2.0%	10.0%	-0.8%
LA	99	REST OF LOUISIANA	0.981	0.879	1.253	0.947	-1.9%	-0.9%	4.5%	-1.1%
ME	03	SOUTHERN MAINE	0.995	1.002	0.661	0.984	-0.5%	-0.5%	-1.3%	-0.5%
ME	99	REST OF MAINE	0.982	0.910	0.661	0.936	-1.8%	-1.3%	-1.3%	-1.6%
MD	01	BALTIMORE/SURR. CNTYS	1.026	1.095	1.304	1.069	0.2%	0.0%	0.7%	0.2%
MD	99	REST OF MARYLAND	1.010	1.035	1.076	1.024	0.1%	0.2%	-0.5%	0.1%
MA	01	METROPOLITAN BOSTON	1.041	1.191	0.952	1.104	0.8%	1.0%	-10.3%	0.4%
MA	99	REST OF MASSACHUSETTS	1.023	1.064	0.952	1.038	0.3%	-0.3%	-10.3%	-0.4%
MI	01	DETROIT	0.995	0.993	1.657	1.022	-0.5%	0.4%	-2.0%	-0.3%
MI	99	REST OF MICHIGAN	0.986	0.915	0.999	0.955	-1.4%	-0.4%	-1.9%	-1.0%
MN	00	MINNESOTA	1.000	1.012	0.357	0.978	0.0%	0.1%	-1.3%	0.0%
MS	00	MISSISSIPPI	0.978	0.856	0.521	0.904	-2.2%	-1.6%	40.7%	-1.2%
MO	01	METROPOLITAN ST. LOUIS	0.994	0.968	0.971	0.981	-0.6%	0.9%	-7.8%	-0.3%
MO	02	METROPOLITAN KANSAS CITY	0.991	0.959	0.982	0.976	-0.9%	-0.4%	-8.5%	-1.1%
MO	99	REST OF MISSOURI	0.977	0.857	0.910	0.921	-2.3%	-0.7%	-8.3%	-1.9%
MT	01	MONTANA	0.975	1.000	1.304	1.000	-2.5%	0.0%	-20.0%	-2.8%
NE	00	NEBRASKA	0.986	0.909	0.277	0.921	-1.4%	-0.1%	-13.0%	-1.1%
NV	00	NEVADA	1.004	1.000	1.130	1.007	0.2%	-1.7%	24.3%	0.2%
NH	40	NEW HAMPSHIRE	0.999	1.042	0.984	1.018	-0.1%	-0.3%	-6.3%	-0.5%

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NJ	01	NORTHERN NJ	1.045	1.190	0.949	1.106	0.4%	0.8%	1.1%	0.6%
NJ	99	REST OF NEW JERSEY	1.030	1.132	0.949	1.072	0.6%	0.8%	1.1%	0.7%
NM	05	NEW MEXICO	0.990	0.908	1.207	0.963	-1.0%	-1.4%	-3.2%	-1.3%
NY	01	MANHATTAN	1.054	1.192	1.823	1.149	0.2%	1.0%	12.9%	1.3%
NY	02	NYC SUBURBS/LONG ISLAND	1.044	1.214	2.425	1.179	0.2%	0.7%	12.9%	1.3%
NY	03	POUGHKPSIE/N NYC SUBURBS	1.022	1.087	1.479	1.071	0.5%	1.6%	12.7%	1.6%
NY	04	QUEENS	1.054	1.214	2.391	1.183	0.2%	1.2%	12.7%	1.4%
NY	99	REST OF NEW YORK	0.995	0.952	0.673	0.962	-0.5%	0.2%	13.2%	0.2%
NC	00	NORTH CAROLINA	0.989	0.930	0.757	0.952	-1.1%	-0.1%	8.9%	-0.4%
ND	01	NORTH DAKOTA	0.985	1.000	0.485	0.970	-1.5%	0.0%	-10.1%	-1.1%
OH	00	OHIO	0.992	0.915	1.049	0.960	-0.8%	-0.2%	4.4%	-0.3%
OK	00	OKLAHOMA	0.979	0.886	0.868	0.933	-2.1%	-0.5%	-9.0%	-1.8%
OR	01	PORTLAND	1.016	1.059	0.659	1.020	0.6%	0.4%	-15.9%	-0.1%
OR	99	REST OF OREGON	0.992	0.957	0.659	0.962	-0.8%	-1.0%	-15.9%	-1.4%
PA	01	METROPOLITAN PHILADELPHIA	1.022	1.079	1.289	1.059	0.0%	0.4%	-6.5%	-0.2%
PA	99	REST OF PENNSYLVANIA	0.993	0.937	0.960	0.967	-0.7%	0.1%	-7.0%	-0.7%
RI	01	RHODE ISLAND	1.024	1.049	0.990	1.034	-0.3%	-0.1%	-0.9%	-0.2%
SC	01	SOUTH CAROLINA	0.985	0.907	0.624	0.935	-1.5%	-0.5%	12.8%	-0.7%
SD	02	SOUTH DAKOTA	0.975	1.000	0.368	0.960	-2.5%	0.0%	-5.4%	-1.5%
TN	35	TENNESSEE	0.986	0.897	0.509	0.925	-1.4%	-0.5%	-3.3%	-1.0%
TX	09	BRAZORIA	1.026	1.010	0.695	1.004	0.6%	1.3%	-17.2%	0.3%
TX	11	DALLAS	1.018	1.020	0.657	1.003	0.6%	0.6%	-14.5%	0.1%

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TX	15	GALVESTON	1.026	1.019	0.695	1.008	0.6%	0.8%	-17.2%	0.0%
TX	18	HOUSTON	1.026	1.020	0.918	1.019	0.6%	0.8%	-1.9%	0.6%
TX	20	BEAUMONT	0.994	0.934	0.695	0.954	-0.6%	1.1%	-17.2%	-0.4%
TX	28	FORT WORTH	1.011	0.991	0.643	0.986	0.4%	0.5%	-13.9%	0.0%
TX	31	AUSTIN	1.000	1.040	0.643	1.003	0.0%	1.9%	-13.9%	0.5%
TX	99	REST OF TEXAS	0.996	0.947	0.690	0.961	-0.4%	0.9%	-13.3%	-0.3%
UT	09	UTAH	0.985	0.923	0.982	0.957	-1.5%	-0.5%	-15.7%	-1.8%
VT	50	VERMONT	0.991	1.008	0.582	0.981	-0.9%	-0.7%	-2.2%	-0.8%
VA	00	VIRGINIA	0.999	0.991	0.903	0.991	-0.1%	0.5%	-0.6%	0.2%
WA	02	SEATTLE (KING CNTY)	1.031	1.170	0.854	1.086	0.4%	2.1%	-8.3%	0.8%
WA	99	REST OF WASHINGTON	1.000	1.012	0.823	0.998	0.0%	0.1%	-8.8%	-0.3%
WV	16	WEST VIRGINIA	0.980	0.857	1.247	0.937	-2.0%	0.0%	-3.8%	-1.3%
WI	00	WISCONSIN	0.990	0.949	0.322	0.943	-1.0%	-0.8%	-7.3%	-1.0%
WY	21	WYOMING	0.985	1.000	0.860	0.986	-1.5%	0.0%	-2.2%	-0.8%
PR	20	PUERTO RICO	0.999	1.008	0.988	1.002	-0.1%	0.1%	-0.2%	0.0%
VI	50	VIRGIN ISLANDS	0.999	1.008	0.988	1.002	-0.1%	0.1%	-0.2%	0.0%

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TABLE 7.D.2: Components of Updated PE GPCI Calculation, by Payment Locality

STATE	LOCALITY CODE	STATE/LOCALITY NAME	INDEX - EMPLOYEE WAGES	INDEX - OFFICE RENTS	INDEX - PURCHASED SERVICES
AL	00	ALABAMA	0.9110	0.7064	0.8928
AK	01	ALASKA	1.1330	1.1489	1.1457
AZ	00	ARIZONA	0.9450	0.8924	0.9366
AR	13	ARKANSAS	0.8377	0.6961	0.8289
CA	05	SAN FRANCISCO-OAKLAND-HAYWARD (SAN FRANCISCO CNTY)	1.2903	1.7251	1.2532
CA	06	SAN FRANCISCO-OAKLAND-HAYWARD (SAN MATEO CNTY)	1.2903	1.7251	1.2532
CA	07	SAN FRANCISCO-OAKLAND-HAYWARD (ALAMEDA/CONTRA COSTA CNTY)	1.2903	1.7251	1.2532
CA	09	SAN JOSE-SUNNYVALE-SANTA CLARA (SANTA CLARA CNTY)	1.3233	1.9020	1.2622
CA	17	OXNARD-THOUSAND OAKS-VENTURA	1.0995	1.5143	1.0876
CA	18	LOS ANGELES-LONG BEACH-ANAHEIM (LOS ANGELES CNTY)	1.1115	1.4613	1.1066
CA	26	LOS ANGELES-LONG BEACH-ANAHEIM (ORANGE CNTY)	1.1115	1.4613	1.1066
CA	51	NAPA	1.1779	1.4534	1.1592
CA	52	SAN FRANCISCO-OAKLAND-HAYWARD (MARIN CNTY)	1.2903	1.7251	1.2532
CA	53	VALLEJO-FAIRFIELD	1.1220	1.1826	1.1273
CA	54	BAKERSFIELD	1.0434	0.8239	1.0427
CA	55	CHICO	0.9615	0.9196	0.9786
CA	56	FRESNO	0.9923	0.8529	1.0007
CA	57	HANFORD-CORCORAN	1.0005	0.7997	1.0067
CA	58	MADERA	1.0067	0.8403	1.0194
CA	59	MERCED	1.0279	0.7533	1.0088
CA	60	MODESTO	1.0099	0.9196	1.0129

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STATE	LOCALITY CODE	STATE/LOCALITY NAME	INDEX - EMPLOYEE WAGES	INDEX - OFFICE RENTS	INDEX - PURCHASED SERVICES
CA	61	REDDING	0.9926	0.8664	1.0085
CA	62	RIVERSIDE-SAN BERNARDINO-ONTARIO	1.0415	1.0940	1.0393
CA	63	SACRAMENTO--ROSEVILLE--ARDEN-ARCADE	1.0974	1.0870	1.0942
CA	64	SALINAS	1.1269	1.2552	1.1074
CA	65	SAN JOSE-SUNNYVALE-SANTA CLARA (SAN BENITO CNTY)	1.3233	1.9020	1.2622
CA	66	SANTA CRUZ-WATSONVILLE	1.1202	1.5762	1.1068
CA	67	SANTA ROSA	1.1418	1.4050	1.1290
CA	68	STOCKTON-LODI	1.0540	0.9428	1.0419
CA	69	VISALIA-PORTERVILLE	0.9855	0.7775	0.9850
CA	70	YUBA CITY	1.0216	0.8291	1.0426
CA	71	EL CENTRO	0.9823	0.7514	0.9940
CA	72	SAN DIEGO-CARLSBAD	1.0988	1.4311	1.0903
CA	73	SAN LUIS OBISPO-PASO ROBLES-ARROYO GRANDE	1.0229	1.2677	1.0615
CA	74	SANTA MARIA-SANTA BARBARA	1.1094	1.4708	1.1007
CA	75	REST OF CALIFORNIA	0.9931	0.9429	1.0105
CO	01	COLORADO	1.0480	1.0687	1.0305
CT	00	CONNECTICUT	1.1152	1.1807	1.1166
DE	01	DELAWARE	1.0290	1.0020	1.0161
DC	01	DC + MD/VA SUBURBS	1.1827	1.5838	1.1425
FL	03	FORT LAUDERDALE	0.9457	1.0976	0.9471
FL	04	MIAMI	0.9427	1.2082	0.9348
FL	99	REST OF FLORIDA	0.9117	0.9210	0.9018
GA	01	ATLANTA	0.9934	1.0008	0.9599
GA	99	REST OF GEORGIA	0.8797	0.7273	0.8783
HI	01	HAWAII	1.0561	1.4514	1.0565
ID	00	IDAHO	0.8802	0.7229	0.8758

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STATE	LOCALITY CODE	STATE/LOCALITY NAME	INDEX - EMPLOYEE WAGES	INDEX - OFFICE RENTS	INDEX - PURCHASED SERVICES
IL	12	EAST ST. LOUIS	0.9843	0.7644	0.9670
IL	15	SUBURBAN CHICAGO	1.0391	1.1420	1.0364
IL	16	CHICAGO	1.0500	1.0337	1.0507
IL	99	REST OF ILLINOIS	0.9276	0.7483	0.9396
IN	00	INDIANA	0.8972	0.7789	0.8965
IA	00	IOWA	0.9209	0.7490	0.9263
KS	00	KANSAS	0.9063	0.7951	0.9021
KY	00	KENTUCKY	0.8699	0.7009	0.8783
LA	01	NEW ORLEANS	0.8772	0.9334	0.8901
LA	99	REST OF LOUISIANA	0.8543	0.7586	0.8542
ME	03	SOUTHERN MAINE	0.9581	1.0495	0.9621
ME	99	REST OF MAINE	0.9007	0.7612	0.8991
MD	01	BALTIMORE/SURR. CNTYS	1.0669	1.2378	1.0461
MD	99	REST OF MARYLAND	1.0420	1.0399	1.0255
MA	01	METROPOLITAN BOSTON	1.1484	1.4889	1.1485
MA	99	REST OF MASSACHUSETTS	1.0762	1.0512	1.0689
MI	01	DETROIT	1.0147	0.9297	0.9979
MI	99	REST OF MICHIGAN	0.9353	0.7433	0.9254
MN	00	MINNESOTA	1.0345	0.9392	1.0312
MS	00	MISSISSIPPI	0.8252	0.6981	0.8265
MO	01	METROPOLITAN ST. LOUIS	0.9921	0.8952	0.9732
MO	02	METROPOLITAN KANSAS CITY	0.9809	0.8248	0.9688
MO	99	REST OF MISSOURI	0.8534	0.6718	0.8546
MT	01	MONTANA	0.9143	0.7630	0.9001
NE	00	NEBRASKA	0.9122	0.7752	0.9129
NV	00	NEVADA	1.0134	0.9128	1.0138

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NH	40	NEW HAMPSHIRE	1.0230	1.0805	1.0173
NJ	01	NORTHERN NJ	1.1971	1.3812	1.1651
NJ	99	REST OF NEW JERSEY	1.1410	1.2471	1.1289
NM	05	NEW MEXICO	0.8975	0.7578	0.8976
NY	01	MANHATTAN	1.2190	1.3538	1.1789
NY	02	NYC SUBURBS/LONG ISLAND	1.1816	1.5114	1.1632
NY	03	POUGHKPSIE/N NYC SUBURBS	1.1049	1.1783	1.0921
NY	04	QUEENS	1.2190	1.4631	1.1789
NY	99	REST OF NEW YORK	0.9761	0.8212	0.9810
NC	00	NORTH CAROLINA	0.9490	0.7904	0.9317
ND	01	NORTH DAKOTA	0.9853	0.7778	0.9784
OH	00	OHIO	0.9355	0.7414	0.9361
OK	00	OKLAHOMA	0.8761	0.7490	0.8751
OR	01	PORTLAND	1.0675	1.0809	1.0622
OR	99	REST OF OREGON	0.9631	0.8277	0.9577
PA	01	METROPOLITAN PHILADELPHIA	1.0985	1.1192	1.0605
PA	99	REST OF PENNSYLVANIA	0.9547	0.8153	0.9451
RI	01	RHODE ISLAND	1.0794	1.0020	1.0559
SC	01	SOUTH CAROLINA	0.8911	0.8066	0.8897
SD	02	SOUTH DAKOTA	0.9220	0.7367	0.9015
TN	35	TENNESSEE	0.8903	0.7703	0.8781
TX	09	BRAZORIA	1.0698	0.9254	1.0317
TX	11	DALLAS	1.0548	0.9776	1.0156
TX	15	GALVESTON	1.0698	0.9409	1.0317
TX	18	HOUSTON	1.0698	0.9525	1.0317
TX	20	BEAUMONT	0.9628	0.8016	0.9731

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TX	28	FORT WORTH	1.0061	0.9506	0.9790
TX	31	AUSTIN	1.0195	1.2049	0.9836
TX	99	REST OF TEXAS	0.9592	0.8846	0.9393
UT	09	UTAH	0.9036	0.8406	0.9066
VT	50	VERMONT	0.9775	1.0347	0.9642
VA	00	VIRGINIA	0.9939	0.9679	0.9842
WA	02	SEATTLE (KING CNTY)	1.1852	1.3818	1.1630
WA	99	REST OF WASHINGTON	1.0423	0.9218	1.0440
WV	16	WEST VIRGINIA	0.8622	0.6780	0.8626
WI	00	WISCONSIN	0.9614	0.8065	0.9585
WY	21	WYOMING	0.9852	0.7871	0.9740
PR	20	PUERTO RICO	1.0000	1.0000	1.0000
VI	50	VIRGIN ISLANDS	1.0000	1.0000	1.0000

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8 Reference Tables

This section includes details data and policy constructs referenced in this report.

A. CMS Specialties and Their Impact Specialty

The regulatory impact table included in all PFS Federal Register notices groups CMS specialties (present on Medicare claims) into clusters of related specialties (IMPACT specialties) when CMS examines the potential impact of PFS payment policies on the distribution of payments by providers. The relationship of CMS specialties and Impact specialties as shown in Table 8.A was used to identify sources for imputing malpractice premium data for CMS specialties that were not included in a filing.

Table 8.A CMS Specialty Map into Impact Specialty

CMS SPECIALTY	IMPACT SPECIALTY
01-General practice	General practice
02-General surgery	General surgery
03-Allergy/immunology	Allergy/immunology
04-Otolaryngology	Otolaryngology
05-Anesthesiology	Anesthesiology
06-Cardiology	Cardiology
07-Dermatology	Dermatology
08-Family practice	Family practice
09-Interventional pain management	Interventional pain management
10-Gastroenterology	Gastroenterology
11-Internal medicine	Internal medicine
12-Osteopathic manipulative therapy	Multispecialty clinic/other physician
13-Neurology	Neurology
14-Neurosurgery	Neurosurgery
15-Speech language pathology	Physical/occupational therapy
16-Obstetrics/gynecology	Obstetrics/gynecology
17-Hospice and palliative care	Multispecialty clinic/other physician
18-Ophthalmology	Ophthalmology
19-Oral surgery (dentists only)	Oral/maxillofacial surgery
20-Orthopedic surgery	Orthopedic surgery
21-Cardiac electrophysiology	Cardiology
22-Pathology	Pathology
23-Sports medicine	Family practice
24-Plastic and reconstructive surgery	Plastic surgery
25-Physical medicine and rehabilitation	Physical medicine
26-Psychiatry	Psychiatry
27-Geriatric psychiatry	Psychiatry

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CMS SPECIALTY	IMPACT SPECIALTY
28-Colorectal surgery	Colon and rectal surgery
29-Pulmonary disease	Pulmonary disease
30-Diagnostic radiology	Radiology
31-Intensive cardiac rehab	Other
32-Anesthesiologist assistants	Nurse anesthetist / anesthesiologist assistants
33-Thoracic surgery	Thoracic surgery
34-Urology	Urology
35-Chiropractic	Chiropractor
36-Nuclear medicine	Nuclear medicine
37-Pediatric medicine	Pediatrics
38-Geriatric medicine	Geriatrics
39-Nephrology	Nephrology
40-Hand surgery	Hand surgery
41-Optometry	Optometry
42-Certified nurse midwife	Obstetrics/gynecology
43-CRNA	Nurse anesthetist / anesthesiologist assistants
44-Infectious disease	Infectious disease
45-Mammography screening center	Diagnostic testing facility
46-Endocrinology	Endocrinology
47-Independent diagnostic testing facility	Diagnostic testing facility
48-Podiatry	Podiatry
62-Psychologist	Clinical psychologist
63-Portable x-ray supplier	Portable x-ray supplier
64-Audiologist	Audiologist
65-Physical therapist	Physical/occupational therapy
66-Rheumatology	Rheumatology
67-Occupational therapist	Physical/occupational therapy
68-Clinical psychologist	Clinical psychologist
69-Clinical laboratory	Independent laboratory
70-Multispecialty clinic or group practice	Multispecialty clinic/other physician
71-Registered dietician/nutrition professional	Other
72-Pain management	Interventional pain management
75-Slide preparation facilities	Independent laboratory
76-Peripheral vascular disease	Vascular surgery
77-Vascular surgery	Vascular surgery
78-Cardiac surgery	Cardiac surgery
79-Addiction medicine	Other
80-Licensed clinical social worker	Clinical social worker
81-Critical care (intensivists)	Critical care
82-Hematology	Hematology/oncology

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CMS SPECIALTY	IMPACT SPECIALTY
83-Hematology/oncology	Hematology/oncology
84-Preventive medicine	Internal medicine
85-Maxillofacial surgery	Oral/maxillofacial surgery
86-Neuropsychiatry	Psychiatry
90-Medical oncology	Hematology/oncology
91-Surgical oncology	General Surgery
92-Radiation oncology	Radiation oncology and radiation therapy centers
93-Emergency medicine	Emergency medicine
94-Interventional radiology	Interventional radiology
98-Gynecologist/oncologist	Obstetrics/gynecology
99-Unknown physician specialty	Multispecialty clinic/other physician
C0-Sleep medicine	General practice
C3-Interventional cardiology	Cardiology
C6-Hospitalist	Internal medicine
C7-Advanced heart failure and transplant cardiology	Cardiology

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B. Distribution of Physician Work RVUs by Service Risk Group by PLI Filing Specialty

As described in Section 3.G in the report, in some cases premiums as reported on filings had to be combined or split across service risk groups to match our final set of specialty/service risk groups. That process requires a measure to weight different service groups within each PLI Filing Specialty, for which we used these physician work shares by specialty based on 2017 Medicare claims. Specialties that were subject to total imputation or that were *always* reported on PLI rate filings with a single risk group and have a single MP RF are not listed here since weights for combining or splitting reported rates were not needed.

Table 8.B Volume-weighted Distribution of 2017 Physician Work RVUs by Service Risk Type by CMS Specialty

PLI FILING SPECIALTY	ASSOCIATED CMS SPECIALTY CODES	TOTAL WORK RVUS - ALL SERVICES	SHARE OF TOTAL WORK RVUS - OBSTETRICS	SHARE OF TOTAL WORK RVUS - SURGERY	SHARE OF TOTAL WORK RVUS - NO SURGERY
General practice	01	4,613,527	0.01%	9.21%	90.79%
General surgery	02	28,426,128	0.00%	65.07%	34.93%
Allergy/immunology	03	1,012,672	0.00%	1.43%	98.57%
Otolaryngology	04	9,485,997	0.00%	56.05%	43.95%
Anesthesiology	05	7,794,848	0.00%	52.84%	47.16%
Cardiology	06, 78	64,295,007	0.00%	19.77%	80.23%
Dermatology	07	30,575,902	0.00%	78.91%	21.09%
Family practice	08	73,451,792	0.02%	3.25%	96.74%
Interventional pain management	09	4,067,522	0.00%	44.61%	55.39%
Gastroenterology	10	27,694,439	0.00%	57.87%	42.13%
Internal medicine	11	147,448,283	0.00%	1.93%	98.07%
Neurology	13, 14	31,772,870	0.00%	30.39%	69.61%
Obstetrics/gynecology	16	6,168,650	4.99%	46.78%	48.23%
Ophthalmology	18	55,793,394	0.00%	44.24%	55.76%
Oral surgery	19	446,921	0.00%	69.74%	30.26%
Orthopedic surgery	20	45,385,243	0.00%	72.67%	27.33%

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PLI FILING SPECIALTY	ASSOCIATED CMS SPECIALTY CODES	TOTAL WORK RVUS - ALL SERVICES	SHARE OF TOTAL WORK RVUS - OBSTETRICS	SHARE OF TOTAL WORK RVUS - SURGERY	SHARE OF TOTAL WORK RVUS - NO SURGERY
Pathology	22	16,985,469	0.00%	0.65%	99.35%
Sports medicine	23	1,032,691	0.00%	52.90%	47.10%
Plastic and reconstructive surgery	24	4,703,365	0.00%	80.55%	19.45%
Physical medicine and rehabilitation	25	14,858,378	0.00%	12.76%	87.24%
Psychiatry	26	19,974,718	0.00%	0.05%	99.95%
Colorectal surgery	28	2,216,113	0.00%	77.55%	22.45%
Pulmonary disease	29	24,546,929	0.00%	4.90%	95.10%
Diagnostic radiology	30	69,962,090	0.00%	8.04%	91.96%
Anesthesiologist assistants	32	7,710	0.00%	96.70%	3.30%
Thoracic surgery	33	5,562,108	0.00%	82.14%	17.86%
Urology	34	19,290,317	0.00%	53.80%	46.20%
Chiropractic	35	12,633,442	0.00%	0.00%	100.00%
Nuclear medicine	36	701,063	0.00%	1.60%	98.40%
Pediatric medicine	37	792,136	0.01%	8.39%	91.60%
Geriatric medicine	38	2,968,862	0.00%	0.65%	99.35%
Nephrology	39	34,520,915	0.00%	2.42%	97.58%
Hand surgery	40	2,452,697	0.00%	70.81%	29.19%
Optometry	41	13,559,237	0.00%	2.88%	97.12%
Certified nurse midwife	42	61,910	23.11%	12.44%	64.45%
CRNA	43	302,690	0.00%	83.98%	16.01%
Infectious disease	44	11,129,293	0.00%	0.58%	99.42%
Endocrinology	46	6,164,562	0.00%	1.14%	98.86%
Podiatry	48	19,019,898	0.00%	63.71%	36.29%
Rheumatology	66	5,037,025	0.00%	8.66%	91.34%

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PLI FILING SPECIALTY	ASSOCIATED CMS SPECIALTY CODES	TOTAL WORK RVUS - ALL SERVICES	SHARE OF TOTAL WORK RVUS - OBSTETRICS	SHARE OF TOTAL WORK RVUS - SURGERY	SHARE OF TOTAL WORK RVUS - NO SURGERY
Pain management	72	4,128,902	0.00%	44.53%	55.47%
Peripheral vascular disease	76	168,047	0.00%	43.41%	56.59%
Vascular surgery	77	9,815,440	0.00%	65.16%	34.84%
Critical care (intensivists)	81	5,593,244	0.00%	7.97%	92.03%
Hematology	82	787,973	0.00%	0.99%	99.01%
Hematology/oncology	83	13,128,557	0.00%	0.67%	99.33%
Preventive medicine	84	180,937	0.00%	12.82%	87.18%
Maxillofacial surgery	85	213,799	0.00%	67.56%	32.44%
Medical oncology	90	3,994,655	0.00%	0.56%	99.44%
Surgical oncology	91	1,210,164	0.00%	71.91%	28.09%
Radiation oncology	92	13,462,889	0.00%	0.92%	99.08%
Emergency medicine	93	54,945,496	0.00%	3.03%	96.97%
Interventional radiology	94	3,664,723	0.00%	56.38%	43.62%
Unknown physician specialty	99	731,016	0.03%	20.60%	79.37%
Sleep medicine	C0	498,017	0.00%	1.38%	98.62%
Interventional cardiology	C3	11,070,131	0.00%	38.05%	61.95%
Hospitalist	C6	6,659,557	0.00%	0.26%	99.74%

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C. Source for Specialty for Imputation

Development of the analytic premium data required imputing premiums on filings that did not include CMS specialties. For 32 CMS specialties that were reported on some filings but missing from others, we used partial imputation based on the source specialty/service risk groups in Table 8.C.1. For 23 CMS specialties that were never included on filings or that were still incomplete (under 20 percent of U.S. population covered) after partial imputation, we used total imputation according to the source specialty/service risk groups in Table 8.C.2.

Table 8.C.1 Source Specialty/Service Risk Group for Partial Imputation for Updated PLI Premium Data

CMS SPECIALTY/SERVICE RISK GROUP	CMS SPECIALTY/SERVICE RISK GROUP USED AS SOURCE FOR IMPUTATION
01-General practice (NO SURG)	08-Family practice (NO SURG)
01-General practice (OB)	08-Family practice (OB)
01-General practice (SURG)	08-Family practice (SURG)
06-Cardiology (SURG)	78-Cardiac surgery (ALL)
08-Family practice (NO SURG)	01-General practice (NO SURG)
08-Family practice (OB)	01-General practice (OB)
08-Family practice (SURG)	01-General practice (SURG)
09-Interventional pain management (ALL)	72-Pain management (ALL)
11-Internal medicine (ALL)	08-Family practice (NO SURG)
13-Neurology (SURG)	14-Neurosurgery (ALL)
14-Neurosurgery (ALL)	13-Neurology (SURG)
15-Speech language pathology (ALL)	65-Physical therapist (ALL)
23-Sports medicine (ALL)	08-Family practice (NO SURG)
32-Anesthesiologist assistants (ALL)	43-CRNA (ALL)
38-Geriatric medicine (NO SURG)	08-Family practice (NO SURG)
38-Geriatric medicine (SURG)	08-Family practice (SURG)
43-CRNA (ALL)	32-Anesthesiologist assistants (ALL)
62-Psychologist (ALL)	68-Clinical psychologist (ALL)
65-Physical therapist (ALL)	67-Occupational therapist (ALL)
67-Occupational therapist (ALL)	65-Physical therapist (ALL)
68-Clinical psychologist (ALL)	62-Psychologist (ALL)
72-Pain management (ALL)	09-Interventional Pain Management (ALL)
76-Peripheral vascular disease (ALL)	77-Vascular surgery (ALL)
78-Cardiac surgery (ALL)	06-Cardiology (SURG)
82-Hematology (ALL)	83-Hematology/oncology (ALL)
83-Hematology/oncology (ALL)	82-Hematology (ALL)
84-Preventive medicine (ALL)	11-Internal medicine (ALL)
90-Medical oncology (ALL)	83-Hematology/oncology (ALL)

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CMS SPECIALTY/SERVICE RISK GROUP	CMS SPECIALTY/SERVICE RISK GROUP USED AS SOURCE FOR IMPUTATION
91-Surgical oncology (ALL)	02-General surgery (ALL)
C0-Sleep medicine (ALL)	01-General practice (NO SURG)
C3-Interventional cardiology (ALL)	06-Cardiology (SURG)
C6-Hospitalist (ALL)	11-Internal medicine (ALL)

Note: Some specialties listed here are ultimately subject to total imputation because of limited premium coverage, so they are also included in Total Imputation Table 8.C.2 below.

8.C.2 Source Specialty/Service Risk Group for Total Imputation for Updated PLI Premium Data

CMS SPECIALTY/SERVICE RISK GROUP	CMS SPECIALTY/SERVICE RISK GROUP USED AS SOURCE FOR IMPUTATION
12-Osteopathic manipulative therapy (ALL)	03-Allergy/immunology (ALL)
15-Speech language pathology (ALL)	03-Allergy/immunology (ALL)
17-Hospice and palliative care (ALL)	03-Allergy/immunology (ALL)
21-Cardiac electrophysiology (NO SURG)	06-Cardiology (NO SURG)
21-Cardiac electrophysiology (SURG)	06-Cardiology (SURG)
27-Geriatric psychiatry (ALL)	26-Psychiatry (ALL)
31-Intensive cardiac rehab (ALL)	06-Cardiology (NO SURG)
45-Mammography screening center (ALL)	03-Allergy/immunology (ALL)
47-Independent diagnostic testing facility (ALL)	03-Allergy/immunology (ALL)
62-Psychologist (ALL)	03-Allergy/immunology (ALL)
63-Portable x-ray supplier (ALL)	03-Allergy/immunology (ALL)
64-Audiologist (ALL)	03-Allergy/immunology (ALL)
65-Physical therapist (ALL)	03-Allergy/immunology (ALL)
67-Occupational therapist (ALL)	03-Allergy/immunology (ALL)
68-Clinical psychologist (ALL)	03-Allergy/immunology (ALL)
69-Clinical laboratory (ALL)	03-Allergy/immunology (ALL)
70-Multispecialty clinic or group practice (ALL)	99-Unknown physician specialty (ALL)
71-Registered dietician/nutrition professional (ALL)	03-Allergy/immunology (ALL)
75-Slide preparation facilities (ALL)	03-Allergy/immunology (ALL)
79-Addiction medicine (ALL)	03-Allergy/immunology (ALL)
80-Licensed clinical social worker (ALL)	03-Allergy/immunology (ALL)
86-Neuropsychiatry (ALL)	26-Psychiatry (ALL)
98-Gynecologist/oncologist (ALL)	16-Obstetrics/gynecology (SURG)
C7-Advanced heart failure and transplant cardiology (ALL)	06-Cardiology (SURG)

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D. Occupations Included in the Physician Work GPCI

Tables 8.D.1-8.D.4 below shows the list of occupation codes and titles that comprise the seven occupation groups used in the WORK GPCI calculation. The source is the BLS OES Wage Data. The Occupation Code is the 6-digit Standard Occupational Classification (SOC) code or OES-specific code for the occupation.

Based on changes in the May 2017 Occupation Profiles, the following occupation codes from the CY 2017 Update have been replaced in the CY 2020 Update:

- Occupation codes 15-1179 and 15-1799 have been replaced with 15-1199
- Occupation codes 15-2091 and 15-2099 have been replaced with 15-2090
- Occupation codes 21-1011 and 21-1014 have been replaced with 21-1018
- Occupation code 15-1150 have been replaced with 15-1151 and 15-1152

Table 8.D.1: List of Occupations Included in the Updated WORK GPCI – Architecture and Engineering

OCCUPATION CODE	OCCUPATION TITLE
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, Except Mining Safety Engineers and Inspectors
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

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Table 8.D.2: List of Occupations Included in the Updated WORK GPCI – Computer, Mathematical, Life and Physical Science

OCCUPATION CODE	OCCUPATION TITLE
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
15-1142	Network and Computer Systems Administrators
15-1151	Computer User Support Specialists
15-1152	Computer Network Support Specialists
15-1199	Computer Occupations, All Other
15-2011	Actuaries
15-2021	Mathematicians
15-2031	Operations Research Analysts
15-2041	Statisticians
15-2090	Miscellaneous Mathematical Science Occupations
19-1011	Animal Scientists
19-1012	Food Scientists and Technologists
19-1013	Soil 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

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Table 8.D.3: List of Occupations Included in the Updated WORK GPCI – Social Science, Community and Social Service and Legal

OCCUPATION CODE	OCCUPATION TITLE
19-3011	Economists
19-3022	Survey Researchers
19-3031	Clinical, Counseling, and School Psychologists
19-3032	Industrial-Organizational 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	Political Scientists
19-3099	Social Scientists and Related Workers, 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
19-4099	Life, Physical, and Social Science Technicians, All Other
21-1012	Educational, Guidance, School, and Vocational Counselors
21-1013	Marriage and Family Therapists
21-1015	Rehabilitation Counselors
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health 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

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OCCUPATION CODE	OCCUPATION TITLE
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

Table 8.D.4: List of Occupations Included in the Updated WORK GPCI – Other Occupation Groups

OCCUPATION GROUP	OCCUPATION CODE	OCCUPATION TITLE
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 Occupations

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E. Counties Missing County-Level Estimates of Median Gross Rent for 2-Bedrooms

ARC used the 2017 ACS 5-year, county-level estimates on the median gross rent for 2-bedrooms to develop the data needed to create the Office Rent Index. Since the ACS data file is missing estimates for the median gross rent for 2-bedrooms for select counties and Census was unable to provide additional values, ARC imputed county-level rent estimates using the average value for a given county's MSA. Table 8.E below includes a list of the counties that are missing estimates and these imputed values.

Table 8.E: Counties Missing County-Level Estimates of Median Gross Rent for 2-Bedrooms and Imputed Amount

COUNTY NAME	IMPUTED VALUE: MEDIAN GROSS RENT FOR 2-BEDROOMS
Alpine County, California	$1,016
Mineral County, Colorado	$669
San Juan County, Colorado	$828
Lafayette County, Florida	$632
Camas County, Idaho	$703
Stanton County, Kansas	$689
Cameron Parish, Louisiana	$772
Petroleum County, Montana	$615
Prairie County, Montana	$656
Grant County, Nebraska	$653
McPherson County, Nebraska	$653
Lander County, Nevada	$823
De Baca County, New Mexico	$725
Hyde County, North Carolina	$710
Douglas County, South Dakota	$578
Jones County, South Dakota	$578
McPherson County, South Dakota	$634
Borden County, Texas	$681
Edwards County, Texas	$672
Foard County, Texas	$681
Glasscock County, Texas	$681
King County, Texas	$681
Loving County, Texas	$681
McMullen County, Texas	$685
Schleicher County, Texas	$737
Stonewall County, Texas	$681
Daggett County, Utah	$744
Rich County, Utah	$1,173
Bath County, Virginia	$759

Source: Median Gross Rent by Bedrooms (B25031); 2017 ACS 5-year estimates (2013-2017)

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F. Current California Localities with Prior Locality and Transition Area Status

GPCIs in California are still in transition from values based on the prior 9 localities to the current set of 32 areas. Calculation of new GPCIs for California requires calculating values for the prior localities and developing transitioned values, as described in Section 4 of the report. Table 8.F shows the relationship between current and prior localities, along with the transition status of current areas.

Table 8.F: Current California Localities with Prior Locality and Transition Area Status

CURRENT LOCALITY CODE	CURRENT STATE/LOCALITY NAME	PRIOR LOCALITY CODE	PRIOR STATE/LOCALITY NAME	TRANSITION AREA?
05	SAN FRANCISCO-OAKLAND-HAYWARD (SAN FRANCISCO CNTY)	05	SAN FRANCISCO	N
06	SAN FRANCISCO-OAKLAND-HAYWARD (SAN MATEO CNTY)	06	SAN MATEO	N
07	SAN FRANCISCO-OAKLAND-HAYWARD (ALAMEDA/CONTRA COSTA CNTY)	07	OAKLAND/BERKELEY	N
09	SAN JOSE-SUNNYVALE-SANTA CLARA (SANTA CLARA CNTY)	09	SANTA CLARA	N
17	OXNARD-THOUSAND OAKS-VENTURA	17	VENTURA	N
18	LOS ANGELES-LONG BEACH-ANAHEIM (LOS ANGELES CNTY)	18	LOS ANGELES	N
26	LOS ANGELES-LONG BEACH-ANAHEIM (ORANGE CNTY)	26	ANAHEIM/SANTA ANA	N
51	NAPA	03	MARIN/NAPA/SOLANO	Y
52	SAN FRANCISCO-OAKLAND-HAYWARD (MARIN CNTY)	03	MARIN/NAPA/SOLANO	Y
53	VALLEJO-FAIRFIELD	03	MARIN/NAPA/SOLANO	Y
54	BAKERSFIELD	99	REST OF CALIFORNIA	Y

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CURRENT LOCALITY CODE	CURRENT STATE/LOCALITY NAME	PRIOR LOCALITY CODE	PRIOR STATE/LOCALITY NAME	TRANSITION AREA?
55	CHICO	99	REST OF CALIFORNIA	Y
56	FRESNO	99	REST OF CALIFORNIA	Y
57	HANFORD-CORCORAN	99	REST OF CALIFORNIA	Y
58	MADERA	99	REST OF CALIFORNIA	Y
59	MERCED	99	REST OF CALIFORNIA	Y
60	MODESTO	99	REST OF CALIFORNIA	Y
61	REDDING	99	REST OF CALIFORNIA	Y
62	RIVERSIDE-SAN BERNARDINO-ONTARIO	99	REST OF CALIFORNIA	Y
63	SACRAMENTO-ROSEVILLE-ARDEN-ARCADE	99	REST OF CALIFORNIA	Y
64	SALINAS	99	REST OF CALIFORNIA	Y
65	SAN JOSE-SUNNYVALE-SANTA CLARA (SAN BENITO CNTY)	99	REST OF CALIFORNIA	Y
66	SANTA CRUZ-WATSONVILLE	99	REST OF CALIFORNIA	Y
67	SANTA ROSA	99	REST OF CALIFORNIA	Y
68	STOCKTON-LODI	99	REST OF CALIFORNIA	Y
69	VISALIA-PORTERVILLE	99	REST OF CALIFORNIA	Y
70	YUBA CITY	99	REST OF CALIFORNIA	Y
71	EL CENTRO	99	REST OF CALIFORNIA	Y
72	SAN DIEGO-CARLSBAD	99	REST OF CALIFORNIA	Y
73	SAN LUIS OBISPO-PASO ROBLES-ARROYO GRANDE	99	REST OF CALIFORNIA	Y
74	SANTA MARIA-SANTA BARBARA	99	REST OF CALIFORNIA	Y
75	REST OF CALIFORNIA	99	REST OF CALIFORNIA	Y

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9 Acquiring Publicly Available Data for GPCI Development

This section includes additional details on acquiring the publicly available data for developing the updated GPCIs.

A. Bureau of Labor Statistics Occupational Employment Statistics

The 2017 BLS OES data is available through the U.S. Department of Labor's OES Data website.[35] The OES data on the website is organized by date, with the most recently available data shown at the top of the webpage. ARC downloaded the publicly available data under the headings "OES Data," "May 2017."[36] The data files are available in both HTML and XLS formats. Tables 8.D.1 – 8.D.4 in Section 8.D above list the specific occupation codes for the WORK GPCI calculation that we pulled from the OES data files. These occupation codes can be identified in the OES data files using the variable occ_code.

ARC also downloaded the May 2017 Metropolitan and Nonmetropolitan Area Definitions. This file is available as a Microsoft Excel file and can be found at https://www.bls.gov/oes/2017/may/msa_def.htm.

B. United States Census Bureau American Community Survey

The American Community Survey data is available through the U.S. Census Bureau's American Fact Finder Download Center. The first step in acquiring the ACS data is to navigate to the American Fact Finder website,[37] and choose Download Center. Then, select "I know the dataset or table(s) that I want to download." The remaining steps required to download the publicly available data file are shown in Table 9.B below.

Table 9.B.: Step-by-Step Guide to Downloading ACS Data File

Step Number	Data Element	Selection
1	Select a Program	American Community Survey
2	Select a dataset	2017 ACS 5-Year Estimates
3	Select a geographic type	County
4	Select one or more geographic areas	All Counties within United States and Puerto Rico
5	Refine search results	B25031: Median Gross Rent by Bedrooms

After following the step-by-step guide described in Table 9.B., the data can be downloaded and saved. The first row of the data file includes variable names, and the second row of the data file

[35] The OES May 2017 data can be found here: https://www.bls.gov/oes/tables.htm

[36] At the time of the GPCI data collection, May 2017 was the most recently available OES data.

[37] The American Fact Finder Download Center can be found here: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

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includes the variable descriptions. Descriptive data element names can also be downloaded to accompany the data file. The text file accompanying the data download (ACS_17_5YR_B25031.txt) is shown below.

Text File Accompanying Data Download (ACS_17_5YR_B25031.txt)

B25031

MEDIAN GROSS RENT BY BEDROOMS

Universe: Renter-occupied housing units paying cash rent

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

*An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.*

An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.

*An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.*

*An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.*

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An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

An '(X)' means that the estimate is not applicable or not available.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

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C. Geographic Crosswalks and Weights

ARC downloaded the following publicly available data to create a database of geographic crosswalks and weights that was used in developing the updated GPCIs.

Table 9.C.: List of Geographic Data Files Used in Developing Updated GPCIs

Description	Source	Link
CBSA, MSA, CSA Delineation file, August 2017	US Census Bureau	https://www2.census.gov/programs-surveys/metro-micro/geographies/reference-files/2017/delineation-files/list1.xls
Total US Population by County	2012-2016 American Community Survey 5-Year Estimates	https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml[38]
Total US Population by County Subdivision	2012-2016 American Community Survey 5-Year Estimates	https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml[39]
2019 Medicare PFS Locality Configuration, filename: 19LOCCO	CMS	https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/Downloads/RVU19D.zip

As previously mentioned in the report, the key geographic measures include counties, states, Medicare payment localities, and various definitions of metropolitan area. This geographic database facilitated the creation of the GPCIs and was used to cross-walk various geographic areas and create county-level population weights.

[38] Create table from Factfinder, Advanced Search: Topic = People -> Basic Count/Estimate -> Population Total; Geographies = County, then select "All Counties within United States and Puerto Rico"

[39] Create table from Factfinder, Advanced Search: Topic = People -> Basic Count/Estimate -> Population Total; Geographies = County Subdivision, then select the following states: CT, MA, ME, NH, RI, VT

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