

Responses to Comments on RAND Global Services Reports

Andrew W. Mulcahy, Ateev Mehrotra, Courtney A. Gidengil,
Susan L. Lovejoy



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Preface

In July 2019, as part of a contract with the Centers for Medicare & Medicaid Services (CMS), the RAND Corporation published three complementary reports that focused on post-operative visits bundled into Medicare payment for many procedures. CMS invited comments on these reports in the calendar year 2020 Physician Fee Schedule Proposed Rule and several organizations expressed concerns about the content of the reports. In this follow-up report, RAND researchers respond to those criticisms. This report was initially published in 2019; this update was published in 2021 and includes clarification on RAND's definition of *clean procedures*.

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RAND Health Care Communications

1776 Main Street

P.O. Box 2138

Santa Monica, CA 90407-2138

(310) 393-0411, ext. 7775

RAND_Health-Care@rand.org

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Abbreviations

AMA	American Medical Association
CMS	Centers for Medicare & Medicaid Services
CY	calendar year
E&M	evaluation and management
HCPCS	Healthcare Common Procedure Coding System
MACRA	Medicare Access and CHIP Reauthorization Act of 2015
NP	nurse practitioner
PA	physician assistant
RUC	American Medical Association/Specialty Society Relative Value Scale Update Committee
RVU	relative value unit

1. Background

For many surgeries and other types of procedures, payment from Medicare covers the procedures themselves and related services delivered within either 10 or 90 days of the procedure, during what is called the *global period*. Congress, as part of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), mandated that the Centers for Medicare & Medicaid Services (CMS) collect data on the number and level of post-operative visits provided in global periods and use these data—along with other available data—to improve the accuracy of valuation of surgical services under the Medicare Physician Fee Schedule.

CMS contracted with the RAND Corporation to (1) analyze patterns of the number of post-operative visits provided during the global period, (2) field a practitioner survey designed to capture the level of post-operative visits that take place during the global period, and (3) describe how the newly collected claims-based data on the number of post-operative visits could be used to adjust valuation for procedures with 10- and 90-day global periods.

The RAND team published three reports (Kranz et al., 2019; Gidengil et al., 2019; Mulcahy et al., 2019) summarizing our findings for each of these tasks, and CMS invited comments on those reports from stakeholders in the calendar year (CY) 2020 Physician Fee Schedule Proposed Rule (CMS, 2019). We identified several letters responding to the rule that included comments directly related to the content of the three reports (see examples in Appendix A). A few of the letters were supportive of CMS’s claims-based data collection and some highlighted the findings from the RAND claims-based report. Others, including those from surgical specialty societies, the American Medical Association (AMA), and the AMA/Specialty Society Relative Value Scale Update Committee (RUC), were critical of the reports.

In this report, we respond to the criticisms of our three earlier reports. In Chapter 2, we briefly summarize the reports to provide context. Chapters 3 through 5 are devoted to our responses for each of the reports. Instead of reproducing verbatim comments from organizations’ comment letters, we summarize related comments and then provide our response. In Chapter 6, we provide our conclusions.

2. Summaries of the RAND Reports

In this chapter, we provide a brief summary of the three reports that were published in July 2019.

Summary of the Claims-Based Report

The RAND team's first report was titled *Claims-Based Reporting of Post-Operative Visits for Procedures with 10- or 90-Day Global Periods: Final Report* (Kranz et al., 2019). It is also known as the “claims-based report.” Beginning on July 1, 2017, CMS required certain practitioners in nine randomly selected states to report on post-operative visits after specific procedures with 10- or 90-day global periods. These post-operative visits were reported using Healthcare Common Procedure Coding System (HCPCS) code 99024 (this code had no associated payment). The claims-based report summarizes the reporting of these post-operative visits based on analysis of fee-for-service Medicare claims data for procedures furnished from July 1, 2017, to June 30, 2018. Across the nine states in which CMS required reporting of post-operative visits, only 46 percent of practitioners who were expected to report post-operative visits did so.¹ This rate varied widely across specialties and was generally much higher for surgical specialties.²

When examining what we defined as *clean procedures*³ linked to post-operative visits, we found that 3.7 percent of the 961,006 procedures with 10-day global periods had any post-operative visits reported. Of the 457,256 procedures with 90-day global periods, 70.9 percent had any associated post-operative visits reported.

We compared the number of post-operative visits for each procedure reported in the claims data with the number of expected post-operative visits for each procedure. The number of expected post-operative visits comes from the RUC physician surveys, which are used to inform the number of visits that CMS assumes when valuing procedures and which are reported in the Physician Time File posted alongside the Medicare Physician Fee Schedule. During the first 12 months of reporting post-operative visits, we found that a very small percentage of procedures

¹ Practitioners were expected to report post-operative visits if they performed one or more procedures within a global period.

² More than 85 percent of practitioners expected to report did so in the following specialties: hand surgery, orthopedic surgery, vascular surgery, ophthalmology, neurosurgery, urology, plastic and reconstructive surgery, dermatology, and general surgery.

³ *Clean procedures* are billed procedures (one billed unit of service) that do not occur in the global period of another procedure with a 10- or 90-day global period. In the claims-based report, we discuss how we captured this and how clean procedures compare with other procedures.

with 10-day global periods had an associated post-operative visit and the ratio of observed to expected post-operative visits provided was 4 percent. Approximately two-thirds of procedures with 90-day global periods had one or more associated post-operative visits; however, the ratio of observed to expected post-operative visits provided for 90-day global period procedures was only 39 percent. To address the concern that these low rates were driven by some practitioners not reporting visits, we identified a set of practitioners—*robust reporters*—who appeared to be engaged in reporting post-operative care in a sensitivity analysis.⁴ Among this subset of practitioners, we found that the number of post-operative visits was only modestly higher.

Summary of the Survey Report

The RAND team’s second report was titled *Survey-Based Reporting of Post-Operative Visits for Select Procedures with 10- or 90-Day Global Periods: Final Report* (Gidengil et al., 2019). As noted earlier, as part of the MACRA legislation, Congress mandated that CMS collect data on the level of post-operative visits delivered to Medicare beneficiaries. CMS chose to pursue multiple avenues to collect this information, including a practitioner survey. CMS asked RAND to develop a survey to collect information on the level of post-operative visits that occur as part of the global period for surgical procedures. Initially, we had planned to sample and survey respondents about *all* surgical procedures with a 10- or 90-day global period. However, given issues with response rates, we focused on three procedures—cataract surgery, hip arthroplasty, and complex wound repair. For post-operative visits associated with these three procedures, we collected information on visit characteristics (for example, if the visit was planned or unexpected); practitioner time (including between visits); staff time; types of post-operative activities performed; and the physician’s views on reported work in the visit.

Using data reported via our practitioner survey, we found that reported physician time and work for cataract surgery and hip replacement post-operative visits were generally similar, although slightly lower, than the levels CMS used when valuing these procedures. Reported physician time and work for complex wound repair post-operative visits were higher than the levels CMS used when valuing these procedures.⁵

Summary of the Revaluation Report

The RAND team’s third report was titled *Using Claims-Based Estimates of Post-Operative Visits to Revalue Procedures with 10- and 90-Day Global Periods* (Mulcahy et al., 2019). The

⁴ *Robust reporters* were defined as practitioners who performed ten or more clean procedures with 90-day global periods beginning July 1, 2017, and reported at least one post-operative visit for at least half of these procedures.

⁵ Although we selected the complex wound repair procedures for the survey because they were among the 10-day global periods with the highest rates of reported post-operative visits, visits for each of the complex wound repair procedures were reported less than half of the time.

analyses in the claims-based report found that the number of post-operative visits actually provided during global periods was substantially lower than the number of visits expected when the procedure was valued. In the revaluation report, we describe how CMS could use the reverse building block approach to revalue procedures with 10- and 90-day global periods using these newly collected data on the number of post-operative visits performed.⁶ Depending on which statistic describing the number of observed visits was used (e.g., mean, median), the resulting updated work relative value units (RVUs) were 18 to 30 percent lower for procedures with 90-day global periods and 38 to 40 percent lower for procedures with 10-day global periods compared with current work RVUs. Revaluing procedures with 10- and 90-day global periods also resulted in substantial reductions in *total* RVUs across all Physician Fee Schedule services for proceduralist specialties and slight increases in RVUs for some specialties, such as primary care and cardiology. Changes in total Physician Fee Schedule payments by specialty ranged from an 18.4-percent reduction for cardiac surgery to a 3.0-percent increase for neurology.

⁶ The reverse building block approach involves revaluing procedures starting with the current number of work relative value units (RVUs) and then removing RVUs associated with one or more components (i.e., “building blocks”) that contribute to the valuation of the overall procedure. In the case of our analysis, we removed RVUs associated with post-operative visits that do not typically appear to occur. See Mulcahy et al., 2019, for more detail.

3. Claims-Based Report Comments and Response

There were numerous comments on the RAND team’s claims-based report (Kranz et al., 2019). In some cases, commenters also alluded to the revaluation report (Mulcahy et al., 2019). When that is the case, we respond to both in this chapter.

Concerns That the Results Are Outdated

The authors of one letter observed that the claims-based report is now outdated. As an example, they noted that the RUC recently revisited the valuation of cataract surgery code 66984 and that the changes were accepted by CMS and will be implemented in 2020.

Response

The new valuation closely aligned with the findings in our claims-based and revaluation reports. For example,

- previously, the number of post-operative visits associated with the procedure of cataract surgery with intraocular lens 1 stage (CPT code 66984) was 4.5. After the revaluation, the number of visits for the same procedure was reduced to 3.5 (three visits and 0.5 discharge code). In our claims-based report, the median number of post-operative visits reported by physicians using code 99024 was three.
- previously, the work RVUs allocated for this procedure were 8.52. After the revaluation, work RVUs were reduced to 7.35. In our revaluation report, the estimated new work RVUs was nearly identical (7.34 RVUs).

Although this is just one procedure, the alignment in terms of visits supports the idea that physicians were aware of the requirement to report post-operative visits and were able to submit these no-pay claims successfully. The similarity in the revaluations also supports the underlying assumptions the RAND team made in estimating RVUs in the revaluation report.

Given the revaluation of cataract surgery, it is possible that the revaluations conducted across all procedures by the RUC and CMS in the past several years already have addressed most major misvaluations. Therefore, the observed-to-expected ratios of post-operative visits could be much higher now than the ratios in the claims-based report. To address this possibility, we conducted a new sensitivity analysis in which we calculated the observed-to-expected visits ratios in a different way. We used the same observed number of visits, but we used a different expected number of visits. The number of post-operative visits used in the valuation process is reported by CMS in the Physician Time File. Instead of using the Physician Time File valuation appropriate to the year in which the procedure was performed (either 2017 or 2018), as we did in our main analysis, in this sensitivity analyses, we used the number of visits in the proposed 2020 Physician Time File—the valuations that will go into effect on January 1, 2020 (see Table 3.1). If the RUC

and CMS already had addressed problems with valuation, we would see a large increase in the observed-to-expected ratio. Instead, we see no change in the ratio of observed to expected visits for 10-day procedures and only a slight increase for 90-day procedures.

Table 3.1. Sensitivity Analysis of the Observed-to-Expected Ratios for Post-Operative Visits Using the 2020 Physician Time File

Specific Analysis	10-Day Observed-to- Expected Ratio (%)	90-Day Observed-to- Expected Ratio (%)
Results reported in the claims-based report	4.4	39.6
Sensitivity analysis using the 2020 Physician Time File valuations for all procedures	4.4	41.3

Concerns About Potential Underreporting of Visits

There were numerous concerns about potential underreporting of visits using the 99024 code. Commenters emphasized that a large percentage of practitioners who performed a procedure with a global procedure code did not report a 99024 visit. They also noted that a minority of practitioners were defined as robust reporters. Commenters suggested that one driver of this low reporting was that practitioners were simply not aware of the requirement because of a lack of outreach by CMS. Furthermore, they noted that 99024 is a no-payment code and, therefore, health care facilities (such as hospitals) and billing companies might have rejected the code, causing it not to be reported to CMS.

Response

The low reporting rate among eligible practitioners in the CMS data collection was driven largely by several specialties, such as primary care physicians, physician assistants (PAs), and nurse practitioners (NPs). On average, the practitioners in these specialties perform relatively few procedures per practitioner but make up a large percentage of all eligible practitioners. If we focus on procedure-based specialties, we see a very different picture. As presented in the claims-based report, such specialties had much higher rates of reporting (see Table 3.2).

Table 3.2. Claims-Based Reporting Rates for Select Procedure-Based Specialties

Specialty	Reporting Rate (%)
Orthopedic surgery	95
Vascular surgery	92
Ophthalmology	91
Neurosurgery	91
Urology	90
Plastic and reconstructive surgery	89
Dermatology	87

SOURCE: CMS Integrated Data Repository (December 13, 2018) (CMS, 2018).

These data suggest that, despite the barriers commenters describe, a large percentage of practitioners in procedure-focused specialties knew about the reporting requirement and successfully submitted claims for post-operative visits. Additionally, among more-complicated surgeries represented by 90-day global procedures, the issue was not that no post-operative visits were reported but rather that fewer visits were reported than expected. Together, this pattern of post-operative visit reporting is inconsistent with a scenario in which physicians were unaware or unable to report on the visits.

To further address concerns about underreporting, we conducted a new sensitivity analysis in which we identified *never reporters*. Consistent with other sensitivity analyses conducted in the claims-based report, we focused on practitioners who performed ten or more 90-day procedures (*high-volume practitioners*) in the 12-month period.⁷ We focused only on 90-day global period procedures for our sensitivity analyses. We did not include all procedures with global periods because only a small share of procedures with 10-day global periods had any post-operative visits. It appears that many practitioners do not provide any post-operative visits for 10-day procedures during the global period,⁸ which raises the possibility that such visits are not needed. In contrast, most 90-day procedures likely require at least one post-operative visit.

Among all high-volume practitioners, 5.2 percent did not report a single 99024 visit. These practitioners were labeled as never reporters. These practitioners might not have been aware of the reporting requirement or might have had colleagues perform their post-operative care. We then compared the observed-to-expected ratios for 10- and 90-day global procedures in two scenarios: high-volume practitioners including never reporters and high-volume practitioners excluding never reporters. The observed-to-expected ratios were quite similar across these two cases. The results of this sensitivity analysis do not support the idea that there was no awareness

⁷ High-volume practitioners accounted for 57.0 percent of practitioners who billed a 90-day global period procedure and performed 95.1 percent of 90-day global period procedures.

⁸ Practitioners can provide post-operative care after the global period ends. These post-operative visits would be billed separately. This issue is discussed in more depth in the section titled “Concerns About Our Link of Post-Operative Visits to Procedures.”

of this reporting requirement among practitioners or facilities or that billing companies are rejecting the code (see Table 3.3).

It is important to emphasize that this analysis is not directly comparable to the overall results of the claims-based report because high-volume practitioners perform a different mix of procedures. For example, only a small percentage of dermatologists meet the definition of high-volume practitioners because many dermatologists do not perform procedures with a 90-day global period. The higher 10-day observed-to-expected ratio observed in this sensitivity analysis is driven by the mix of 10-day global procedures performed by high-volume practitioners, which is quite different.

Table 3.3. Sensitivity Analysis Among High-Volume Practitioners Including Versus Excluding Never Reporters

Practitioners	10-Day Observed-to- Expected Ratio (%)	90-Day Observed-to- Expected Ratio (%)
All high-volume practitioners	12.0	39.7
High-volume practitioners excluding never reporters	12.8	40.9

NOTE: *High-volume practitioners* are practitioners who performed ten or more procedures with a 90-day global period during the first 12 months of reporting. *Never reporters* are high-volume practitioners who never submitted a 99024 visit during these 12 months.

Concerns About the Exclusion of Some Procedures

Commenters raised issues about our exclusion of multiple procedures (i.e., cases in which multiple procedures were performed at the same time), those with “assistant at surgery” modifiers from our analysis (i.e., cases in which a second surgeon assists the primary surgeon and is paid at a lower rate), and procedures with “add-on” codes (e.g., a cardiac procedure in which a practitioner submits an additional code for each coronary vessel).

Response

For analyses utilizing post-operative visits linked to procedures, we limited our analysis in the claims-based report to *clean procedures*, which we define as billed procedures with a single procedure (one billed unit of service) that does not occur within the global period of another procedure with a 10- or 90-day global period. We excluded procedures that might have unusual patterns of post-operative care, such as demonstration claims and clinical research trials.

To address confusion among commenters, we clarify several points regarding our exclusion criteria. First, we excluded procedures with multiple procedures that have a global period. Therefore, the use of add-on codes, which do not have a global period, did not result in exclusion. Second, in the case of procedures with “assistant at surgery” claims, two or more practitioners will perform a procedure together and submit separate claims. We therefore

included the claim submitted by the primary surgeon and excluded the claim for the procedure(s) with an “assistant at surgery” modifier.

When beneficiaries receive multiple procedures on the same day or over a 10- or 90-day period, it is unclear how to attribute post-operative visits to specific procedures. By focusing on single procedures in our analysis, we are confident that the post-operative visits were linked to the appropriate procedure. We also applied additional exclusion criteria in creating our analytic sample. The underlying motivation was to create a set of clean procedures where the linkage of post-operative visits and procedures was more straightforward. In the claims-based report, we quantified how many procedures were excluded.

The key question is whether these exclusions created bias in the observed-to-expected ratios. In a letter to the editor of the *Annals of Surgery* commenting on our published article (Kranz et al., 2018), Barney and Senkowski (2019) hypothesized that the procedures that were excluded were more complicated or that the beneficiaries who received excluded procedures were systematically sicker and therefore required more post-operative care than those who received the procedures that we analyzed. This could potentially bias the results such that we underestimated the observed-to-expected ratio.

We do not think that this is the case and, if there is bias, we believe that it is toward an overestimation of the observed-to-expected ratio. In unpublished analyses, we found that those who receive the excluded multiple procedures in a day are slightly *less* sick (as captured by the number of comorbidities and 30-day mortality post-procedure) than those who receive a single procedure. Also, the vignettes used by the RUC to develop expected counts of post-operative visits are not specific to Medicare patients. We analyzed the patterns of Medicare patients, who are generally sicker than the rest of the population and therefore likely would require more post-operative care. Both of these issues would bias the results toward an overestimate of the use of post-operative care rather than an underestimate.

Concerns About Our Link of Post-Operative Visits to Procedures

Commenters expressed concerns with our methods for matching procedures to HCPCS code 99024 and, specifically, whether certain post-operative visits were excluded. Commenters highlighted our finding that 99024 was reported 15,955 times for 10-day global services in the five days after the end of the global period (days 11 through 15). They reported believing that if these visits were included in our main analysis of clean procedures they would increase the observed to-expected ratio. Additionally, several organizations reported believing that we did not count post-operative visits that were submitted with comanagement modifiers or those submitted by a practitioner other than the operating physician, thereby decreasing the count of post-operative visits.

Response

In the claims-based report, we linked procedures and post-operative visits if the date of service for the post-operative visit was during the global period of the procedure. Because the link was based on the beneficiary and dates, the process was inclusive. We included visits performed by the practitioner who furnished the procedure and someone other than the practitioner, including those in another practice. We did not exclude post-operative visits with a modifier for comanagement visits or any other modifier.

In the claims-based report, we also explored how many post-operative visits occur soon after the global period ended. Although the commenters are correct that there were 15,955 visits soon after the 10-day global period, the visits occurred outside of the global period and are therefore billed to Medicare as separate services. It is unclear why commenters believe that they should be included within the 10-day global period. In a new sensitivity analysis in which we included these additional visits, the impact on the observed-to-expected ratio was minimal. Given that so few post-operative visits appear to be provided after 10-day global procedures, adding these post-operative visits increased the observed-to-expected ratio from 4 percent to 6 percent. In both of these cases, the rate is extremely low.

Concerns Related to the Robust Reporter Sensitivity Analysis

Commenters took issue with our categorization of some practitioners as robust reporters for a sensitivity analysis and, particularly, that we did not include 10-day procedures in the definition.

Response

Most 90-day procedures likely require at least one post-operative visit. Therefore, we felt more confident using 90-day procedures to identify a group of providers that routinely are providing post-operative care. In contrast, less than 5 percent of 10-day global procedures had any post-operative visits. It appears that for most 10-day procedures, a post-operative visit is not needed or provided during the global period. Defining robust reporters using procedures with 10-day global periods would therefore be flawed.

Commenters also worried that practitioners who started reporting late in the reporting period could still be counted as robust reporters, resulting in an undercount of visits. The pattern of reporting post-operative visits we observed in the 12-month reporting period is not consistent with the idea that many new providers began reporting later in the reporting period (see Figure 3.1 in Kranz et al., 2019). Reporting increased significantly during the initial weeks of required reporting and then plateaued.

Concerns About Generalizability

Commenters also raised concerns about the generalizability of our analysis, given that the reporting was limited to practices with ten or more practitioners in nine states. On the issue of practice size, they pointed to an AMA survey that indicates that 54 percent of physicians are in practices with fewer than ten physicians and, for surgical specialties, 64 percent are in practices with fewer than ten physicians.

Response

CMS chose to exclude practices with fewer than ten practitioners to address concerns from the physician community about reporting burden, particularly for smaller practices. Although the results in our claims-based report obviously are limited to those with ten or more practitioners, it is not clear why practitioners in smaller or larger practices would have substantially different clinical care patterns. The idea that care patterns should not vary based on practice size is reflected in the RUC's use of typical language when valuing a service. The use of "typical" implies a standard of care that does not depend on the size of the practice. Furthermore, the valuation of a given procedure does not vary based on the size of the practice. CMS reimburses the same amount.

The idea that the number of post-operative visits does not vary substantively based on the size of the practice also is supported in our analyses. As seen in the claims report, when we compared practices of ten to 24 practitioners with practices of more than 100 practitioners, the percentage of practitioners reporting post-operative visits and the percentage of procedures with a reported post-operative visit were similar (for example, among 10-day global procedures it was 3.3 percent and 4.1 percent, respectively). This does not support the idea that the use of post-operative care would be different in different-sized practices.

Reporting also was limited to select high-volume, high-cost procedures and practitioners in nine states. Medicare's decision to limit reporting in this manner was consistent with specialty society recommendations. For example, in a letter when CMS first proposed reporting of post-operative visits, the American Urological Association argued that 99024 reporting should be from a representative sample of physicians and be limited to high-volume, high-cost procedures.

The nine states selected by CMS for reporting of post-operative visits were chosen randomly across two strata (size and region), and it is not clear why these states would not be representative of the rest of the country. Indeed, as described in detail in Appendix A of our claims-based report, in a subsection titled "Examining the Representativeness of the Nine-State Subsample," we found the mix of clean procedures and specialties to be similar in the nine states to that in the rest of the country.

In these nine states, the high-volume, high-cost procedure codes for which CMS required reporting accounted for a large majority of procedures with a global period: more than 96 percent

of all procedures with 10-day global periods and 86.6 percent of all procedures with 90-day global periods.

Concerns About the Methodology for Addressing Half Visits

During the valuation process, the number of post-operative visits is broken down by the type of visit (for example, inpatient visit, intensive care unit visit, and discharge visit from hospital). The number of post-operative visits estimated is usually a whole number. However, for many procedures, the valuation includes a half (i.e., 0.5) visit. Most of these half visits were discharge visits (i.e., HCPCS code 99238), although half visits also were used for other types of post-operative visits. Commenters objected to our inclusion of these half visits in the denominator when we generated the observed-to-expected ratios.

Response

Our understanding is that the half discharge visit is used in the valuation process for procedures that typically are done in the outpatient facility setting. The premise is that the amount of work required for such a “discharge” is half of what is required for a discharge from an inpatient setting.

Commenters believed that physicians would never report such a visit and, therefore, that our observed-to-expected ratios are too low. Whether this is the case is unclear; it also is possible that the opposite is occurring. When practitioners report on post-operative visits using HCPCS code 99024, they cannot indicate that they performed a half visit; they report whole visits only. If physicians are reporting these post-operative visits, then the observed-to-expected ratios are too high. When we calculated the ratio of observed-to-expected post-operative visits provided, we included half visits in the denominator.

In either case, it does not appear that the way in which these half visits are handled has any substantive impact on our findings. In a new sensitivity analysis, as recommended by commenters, we excluded all half visits from the denominator when we calculated the observed-to-expected ratio and the change was minimal (see Table 3.4).

Table 3.4. Sensitivity Analysis of Observed-to-Expected Ratio for Post-Operative Visits Including and Excluding Half Visits

Specific Analysis	10-Day Observed-to- Expected Ratio (%)	90-Day Observed- to-Expected Ratio (%)
Results reported in the claims-based report	4.4	39.6
Results excluding half visits from expected visits	4.6	41.5

Concern That a Small Number of Codes Drove the Findings

Commenters correctly pointed out that the top three 10-day global codes (17000, 17004, and 17110) are all dermatology codes and account for 65 percent of all 10-day visits reported. The commenters expressed concerns that the 10-day global findings are dominated by these three codes and, as a result, are not representative.

Response

We disagree with the idea of weighting each procedure the same when generating observed-to-expected ratios. To generate representative results, the norm is to use volume-weighted results. If we treated each code equally, it would not be representative of the care that Medicare beneficiaries receive.

To address the concern that these codes, or dermatological codes in general, are driving the findings, we conducted a new sensitivity analysis in which we excluded these three codes and all other dermatological codes with a global period (see Table 3.5). Although there is a slight change in the observed-to-expected ratios, the overall pattern is quite similar. Therefore, it does not appear that these three codes are driving the findings observed.

Table 3.5. Sensitivity Analysis Excluding Dermatology Codes with a Global Period

Specific Analysis	10-Day Observed-to- Expected Ratio (%)	90-Day Observed- to-Expected Ratio (%)
Results reported in claims-based report	4.4	39.6
Sensitivity analysis excluding all dermatological procedures with a global period (codes that are in the 10021–19499 range)	5.5	40.3

Comments About the Attribution of Procedures to Specialties

Commenters were unclear about how procedures and associated post-operative visits were attributed to specialties. Specifically, they noted that in the revaluation report, there were 10-day global procedures performed by cardiac or thoracic surgeons (see Table 4.5 in Mulcahy et al., 2019). The commenters argued that there are no 10-day global procedures on the list that those surgeons would typically perform.

Response

Specialty designation was determined by the specialty indicated in the claims data. The practitioner performing the visit had a specialty code of either cardiac or thoracic surgery. The top five 10-day procedures done by thoracic and cardiac surgeons seem quite consistent with the scope of their specialty; they involve central venous catheter placement, drainage of hematomas,

or complex wound drainages. Although it likely is correct that cardiac and thoracic surgeons perform only a small percentage of each of these procedures, we believe that performing these procedures would be consistent with the scope of care for their specialties.

The specialty of the performing practitioner has no impact on the valuation of a procedure. The data were broken down by specialty only for the interest of readers of these reports. It is common for specialty societies to request data broken down by specialty so that they can focus on the impact of a policy change on their membership.

4. Survey Report Comments and Response

CMS received several comments on the RAND team’s survey report (Gidengil et al., 2019). In this chapter, we respond to the comments about the survey report and group them by theme.

Potential Bias Because of the Provision of Complete Sample Surveys

One commenter raised a concern about the potential bias associated with providing hypothetical examples of completed surveys to help respondents understand the scope of what was being asked of them. The commenter suggested that blank surveys could have been provided instead, thus avoiding risk to the integrity of the survey data.

Response

We carefully weighed the benefits and drawbacks of providing a completed survey as an example. The rationale for providing completed sample surveys came from specific feedback received during both the pilot phase and final fielding of the survey. Respondents wanted to better understand the scope of what they would be asked to do. Although this could, in theory, affect survey responses, we have no evidence to indicate that responses were affected.

Accounting for Nurse Practitioner and Physician Assistant Time

Commenters identified an issue with counting NP and PA survey data as staff time. Specifically, the concern was that under the “incident to” and split/shared evaluation and management (E&M) services Medicare rules, NP/PA time should be used with the work of the physician to select the level of the visit if the requirements for “incident to” are met and the patient is an established patient. One commenter stated that, if NP/PA time were included with physician time, the estimates for hip arthroplasty and wound repair would have been closer to the CMS Physician Time File estimates.

Response

The way in which we addressed NP/PA time is a limitation of our study. We included visits where a patient was seen by a physician and excluded those where only an NP/PA was involved. NP/PA time could be considered with physician time when selecting the level of the visit. We did not include NP/PA time with physician time for multiple reasons. First, we relied on physician report of NP/PA time, which could be difficult to estimate during the times that the NP/PA was not with the physician. Second, we could not easily measure in a survey how much NP/PA time overlapped with physician time. For example, if, during a single visit, an NP saw the

patient both without the physician and with the physician, it is unclear whether the NP time that overlaps with the physician time should be counted. Given that this survey included only visits in which the physician personally saw the patient, we believe that physicians and NPs/PAs might have seen a patient at the same time more often than in a typical visit in which NP/PAs are involved. In such instances, there is no clear guidance on how to calculate the level of the visit because time is not the sole determinant of the level.

In light of these complexities, we included NP/PA time under staff time. Given how little is known about the provision of post-operative surgical care during the global period, the information collected about NP/PA contributions was an important first step. As the role of NP/PAs in the provision of surgical care evolves, this would be a key area for future study.

Concern About Not Including Pre- and Postservice Times in the CMS Physician Time File Comparison Analysis

One commenter identified a concern related to how we analyzed time spent by the respondent on the patient's care before and after the date of the encounter. Although we included all time spent on the day of the visit (regardless of whether it occurred before or after seeing the patient), the commenter stated that "the current pre-service and post-service CMS times are not specific to the day of service." The commenter suggested that it would have been more appropriate to include the time before and after the visit in the comparison with the CMS Physician Time File.

Response

There is ambiguity as to how the timing of pre- and postservice work should be considered. Intraservice time is quite clear: It is time spent face-to-face with the patient and/or family on the day of the visit. However, the time horizon for preservice and immediate postservice work for E&M visits is unclear (e.g., on the same date of service, within a window of one day, or three days from the visit date of service). Without a clearer description of the timing of pre- and postservice work, there is a risk that time could be double-counted (i.e., time spent between visits could count as a postvisit to the first visit and a previsit to the second visit). Therefore, we assumed that pre-, intra-, and postservice time took place on the day of the visit. Given the relatively small share of total minutes that are for preservice work and immediate postservice work and the types of activities that fall into these categories (e.g., reviewing notes), we assume that a large share of preservice and immediate postservice effort is on the day of the visit itself. Based on feedback from physicians during interviews we conducted when developing the survey, we also collected data on the non-face-to-face time spent on the days prior to and after the encounter to gain a better understanding of time spent caring for the patient, even if not on the day of service. With the proposed change in defining intraservice time for E&M visits from

the RUC (to include three days prior to the visit and seven days afterward), future surveys might need to restructure how information about time is collected (see AMA, 2019).

Potential for Disproportionate Reporting of Certain Types of Visits

Respondents were asked to provide survey data on five post-operative visits. Another concern raised was that these five visits could have been disproportionately representative of only one or two types of visits (e.g., the first hospital visit or first office visit) and therefore not representative.

Response

We put a great deal of thought into how we approached asking respondents to report on visits because we wanted the reported visits to be as representative as possible. Each respondent was asked to provide information on five post-operative visits during the survey window starting on a particular day. Respondents could choose to submit information on consecutive post-operative visits (e.g., during a clinic session or inpatient rounds) or on every second or third post-operative visit, depending on what was most convenient for them and their staff. Regardless of whether the respondent chose to report on consecutive visits or every second or third post-operative visit, we asked that they report on visits as they happened over the course of their day(s), not the visits over a particular patient's post-operative course. We asked respondents to report in this way to ensure that they could report on visits in a timely way within the survey window (versus following a patient for weeks to ensure enough visits). We also wanted respondents to report on as random a sample as possible (both in terms of patients and time of day) while balancing the complexity of the survey effort. If visits are distributed randomly over the course of a day or days, then the five visits should be representative. For more detail, we refer any interested readers to "Survey Refinement and Final Structure" in Chapter 3 of the survey report (Gidengil et al., 2019).

Concerns About the Usefulness of the Report's Findings

Several commenters raised concerns about the usefulness of the findings summarized in the report. Two commenters stated that the new E&M office visit coding structure will render the report's findings less useful. Another stated that the limitations we acknowledged in the report mean that no conclusions can be drawn from the work.

Response

We believe that our findings are an important contribution to CMS's understanding of post-operative visits for the three procedures included in our study. We agree that the new coding structure might have implications for related surveys to be fielded in the future. However, for our

study, it would have been impossible to ask respondents to provide information relative to the new E&M office visit coding structure because this coding structure did not exist at the time of the survey. Furthermore, the valuation of the procedures included in our study was under the existing E&M office visit structure and RVU values.

5. Revaluation Report Comments and Response

Commenters also expressed concerns about RAND’s revaluation report (Mulcahy et al., 2019). We address those concerns in the following sections.

Concerns Related to Source Data

Several organizations repeated comments related to the claims-based data when expressing criticism of the revaluation report. To the extent that post-operative visits were underreported to CMS, the use of summary statistics based on data collected via claims-based reporting could result in reductions in valuations that are too large. Commenters asserted that because “no specialty achieved a 100-percent participation rate, all codes included in the study would have been undercounted in the study to some extent.”

Response

In Chapter 2 of this report, we address these comments in detail. In brief, our extensive sensitivity analyses suggest that most proceduralists actively reported post-operative visits. Furthermore, our main finding that a large share of expected post-operative visits was not reported holds, even after making extensive allowances to exclude potential nonreporters and underreporters.

Even with potential underreporting, we believe that the claims-based data offer a more robust and objective view into the number of post-operative visits actually furnished within global periods compared with information available via RUC surveys. We do not believe that any data collection effort could have expected a 100-percent reporting rate. CMS decided to require reporting from only relatively larger practices in a sample of nine states and not to impose a payment penalty to limit the burden on respondents.

In discussing criticisms of the underlying claims data, it is important to compare those data with the primary form of data collection used in the current valuation process—the physician surveys used by the RUC. In these physician surveys, the sample sizes are sometimes quite small and the median response rate across these surveys is less than 3 percent (U.S. Government Accountability Office, 2015). The much larger sample sizes and much higher response rates in claims-based reporting and the RAND survey support their importance in informing the valuation process.

Overarching Concerns with the Reverse Building Block Approach

Some commenters disagreed with our valuation methodology based on the reverse building block approach. The organizations noted the potential conflict between the reverse building

block approach and estimates of total work obtained via magnitude estimation, the process used by the RUC and specialty societies where survey respondents are asked to provide work estimates for the entire global surgery (including post-operative visits) rather than build a valuation from the bottom up based on individual components under the building block approach.

Response

We used a reverse building block approach to develop updated valuations for procedures with 10- and 90-day global periods based on the number of observed rather than assumed post-operative visits. This approach involved two steps:

1. determining the work RVUs and practice expense inputs associated with post-operative visits given current assumptions (i.e., the number of visits listed in the Physician Time File) on the number of post-operative visits
2. subtracting a share of these work RVUs and practice expense inputs in proportion to the share of post-operative visits that were assumed to occur under the current valuation but were not reported.

We think that any discussion of valuation must consider both the reverse building block and magnitude estimation frameworks. Chapter 3 of the revaluation report includes a thorough discussion of both approaches, in which we note the intrinsic disconnect between the building block approach and estimates of total work from magnitude estimation (Mulcahy et al., 2019).

Although the RUC and other organizations oppose the reverse building block approach to reduce valuations, they appear to support the building block framework as an approach to *add* rather than *subtract* work RVUs to global service valuation. For example, the RUC's and other organizations' comments on the 2019 Physician Fee Schedule Proposed Rule strongly recommended that CMS increase valuations for global services with bundled post-operative visits to reflect increases to the valuation for individual E&M visits. If total work RVUs estimated through magnitude estimation are accurate, there should be no need to update valuations in this way.

Relatedly, we believe that the reverse building block approach is already applied by CMS in practice. CMS receives information related to estimated total work RVUs determined through magnitude estimation and other information on components of total work (for example, the number of post-operative visits that typically occur and the time involved) from the RUC. Using this component information, CMS adjusts total work prior to publishing the Physician Fee Schedule. When this occurs, we assume that CMS is using the building block framework.

In the revaluation report, we stressed that our results should be used as a starting point for further discussion on revaluation. We noted in Chapter 6 of the revaluation report that CMS should consider hybrid approaches that only partially implement the reverse building block approach (Mulcahy et al., 2019). We also noted that, regardless of approaches that CMS

considers in the future, the RUC could revalue procedures for which the resulting work RVUs appeared incorrect.

A broad revaluation of *all* procedures using the current RUC approach likely would require significant time and effort. Furthermore, as described earlier, the outcome of the recent RUC revaluation of cataract surgery was very close to the outcome from our application of the reverse building block approach. Rather than broadly revaluing all procedures, the RUC could focus on individual cases where the reverse building block approach results in work RVUs that are clearly problematic.

Concerns Related to the RAND Team’s Use of Median Visits

Some specialty societies questioned why we used the median post-operative visit counts rather than means for our main results.

Response

We used the median rather than the mean of reported post-operative visits intentionally because the median as a summary statistic is less sensitive to outliers. The median of reported post-operative visits is likely to be affected by outlier procedures with very few (or no) visits or with many post-operative visits. Our report includes adjusted work RVU results using a variety of other summary statistics. We found that the results were broadly similar regardless of which statistic was used (for example, we estimated reductions in work RVUs of 68, 71, and 73 percent using the modal count of visits, median visits, and mean visits).

We believe that the AMA and RUC mistakenly assumed that we applied the overall result from the claims-based report—that 4 percent of post-operative visits for procedures with 10-day global periods and 39 percent of post-operative visits for procedures with 90-day global periods were reported—to revalue procedures. In reality, we did not use the aggregate, summary statistics but rather used procedure code–specific statistics on the share of visits that were reported (rather than expected) for our analyses.

Concern About Not Using Robust Reporters for the Analysis

The AMA, RUC, and other commenters questioned why we did not use the robust reporter group from the claims-based report for this analysis and why we did not exclude practitioners and procedures for which there were no reported visits. They argued that there should always be at least one post-operative visit for procedures with 90-day global periods in particular, and, by including cases in which there were no reported visits in our analysis, our revaluation results are biased downward.

Response

We pursued the robust reporter sensitivity analysis primarily as a way to assess whether there were systematic concerns with underreporting of post-operative visits. Although our observed-to-expected ratios (i.e., the share of expected post-operative visits that were reported to CMS) increased when we limited our analysis to robust reporters, this increase was expected because our approach to select robust reporters excluded practitioners that reported no or few post-operative visits. We believe that it would be inappropriate to use this robust reporter cohort for the broader purpose of the revaluation report. As noted earlier in our response to comments on the claims-based report, the majority of procedure-focused practitioners reported some post-operative visits to CMS and the number of visits reported to CMS was relatively constant over time after reporting was required.

A 90-day procedure without any reported post-operative visits does not necessarily mean that no post-operative care occurred. Post-operative care might have been provided by another practitioner (e.g., one in another specialty in the same practice or another practice) and the post-operative visit might have been billed separately as an E&M visit. The key issue from the perspective of CMS is whether a visit occurred that would have fallen under Medicare's global payment policy.

Calculation of Post-Operative Times

The RUC raised the concern that we calculated post-operative times incorrectly. They noted that we stated that we “computed the total post-operative visit time by subtracting pre- and intraservice time from the total physician time.”

Response

This was an error in the text of the report that has been fixed; it was not an error in our methods. We did, in fact, calculate post-operative time by subtracting preservice time, intraservice time, and immediate post-operative time from the total physician time reported in the Physician Time File.

6. Conclusions

We appreciate the careful review of our reports from organizations commenting on Medicare's Physician Fee Schedule Proposed Rule and the opportunity to respond to these comments. As noted in earlier chapters, we remain confident in our main conclusion that fewer post-operative visits were provided than expected.

We believe that CMS should consider approaches to revalue procedures with global periods in consideration of the newly available data on the number of post-operative visits actually provided under Medicare's global payment policy and that our reports serve as a starting point for further discussion and policy development. Our reports point to a significant disconnect between the number of post-operative visits that CMS assumes typically occur during global periods and the number of visits that actually occur under Medicare's global payment policy. There are several paths forward that CMS could consider, including implementing the reverse building block approach described in our report, and using a hybrid approach blending the reverse building block reductions in work RVUs with estimates of total work from magnitude estimation. CMS also could revisit its earlier proposal to unbundle post-operative visits from payment for procedures. Practitioners could then bill for and be paid for post-operative visits as they do for other E&M visits.

Appendix A. Organizations Providing Comments on the RAND Reports

All comment letters responding to the proposed rule are posted on regulations.gov. We provide the names of the organizations and a link to letters that commented specifically on our reports in Table A.1.

Table A.1. Organizations That Provided Comments

Organization	Letter Posting
American Association of Neurological Surgeons and the Congress of Neurological Surgeons	https://www.regulations.gov/document?D=CMS-2019-0111-6353
American Academy of Ophthalmology	https://www.regulations.gov/document?D=CMS-2019-0111-4787
American College of Surgeons	https://www.regulations.gov/document?D=CMS-2019-0111-6905
American Medical Association	https://www.regulations.gov/document?D=CMS-2019-0111-19703
American Medical Association/ Specialty Society RVS Update Committee	https://www.regulations.gov/document?D=CMS-2019-0111-2821
Alliance for Orthopedic Solutions	https://www.regulations.gov/document?D=CMS-2019-0111-19538
American Podiatric Medical Association	https://www.regulations.gov/document?D=CMS-2019-0111-4794
American Society of Breast Surgeons	https://www.regulations.gov/document?D=CMS-2019-0111-3714
Medicare Payment Advisory Commission	https://www.regulations.gov/document?D=CMS-2019-0111-6300
Society of Thoracic Surgeons	https://www.regulations.gov/document?D=CMS-2019-0111-2381
Society for Vascular Surgery	https://www.regulations.gov/document?D=CMS-2019-0111-13166

References

AMA—*See* American Medical Association.

American Medical Association, “AMA/Specialty Society RVS Update Committee Summary of Recommendations: Office Visits—Tab 9,” data file, April 2019. As of November 11, 2019: <https://www.ama-assn.org/system/files/2019-07/may-2019-ruc-recommendations-office-visits.pdf>

Barney, Linda, Christopher Senkowski, and Vinita Ollapally, “Comment on ‘Patterns of Postoperative Visits Among Medicare Fee-for-Service Beneficiaries,’” Letter to the Editor, *Annals of Surgery*, Vol. 270, No. 6, December 2019.

Centers for Medicare & Medicaid Services, “Integrated Data Repository,” webpage, May 31, 2018. As of November 11, 2019: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/IDR/index.html>

Centers for Medicare & Medicaid Services, “Revisions to Payment Policies under the Medicare Physician Fee Schedule, Quality Payment Program and Other Revisions to Part B for CY 2020,” CMS-1715-P, *Federal Register*, Vol. 84, No. 157, August 14, 2019.

CMS—*See* Centers for Medicare & Medicaid Services.

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Mulcahy, Andrew W., Harry H. Liu, Teague Ruder, Susan L. Lovejoy, Katie Merrell, and Ateev Mehrotra, *Using Claims-Based Estimates of Post-Operative Visits to Revalue Procedures with 10- and 90-Day Global Periods*, Santa Monica, Calif.: RAND Corporation, RR-3035-CMS, 2019. As of October 15, 2019:
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U.S. Government Accountability Office, *Medicare Physician Payment Rates: Better Data and Greater Transparency Could Improve Accuracy*, Washington, D.C., GAO-15-434, May 2015. As of July 25, 2009:
<https://www.gao.gov/assets/680/670366.pdf>