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Analysis of Disparities in Physician Compensation

*A report by the Urban Institute and SullivanCotter for the
Medicare Payment Advisory Commission*

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Subject: Analysis of disparities in physician compensation

Executive Summary

The Urban Institute and SullivanCotter update previous analyses of disparities in physician compensation using data from SullivanCotter’s 2018 Physician Compensation and Productivity Survey, a survey of compensation physicians received in 2017. More specifically, the purpose of this report is to describe physician compensation and productivity by specialty in 2017 in terms of total cash compensation, work relative value units (RVUs), and compensation per work RVU; describe trends in physician compensation over the past five years (2013-2017); and to compute standardized physician compensation as if all physicians were paid at the same rate per RVU as primary care physicians. This analysis is motivated by the understanding that current physician compensation methods may undervalue primary care services, deterring future physicians from pursuing careers in primary care. This report finds that total median cash compensation is higher for all other specialty groups relative to primary care in 2017, though differences in work RVUs and compensation per work RVU by specialty group relative to primary care tend to be somewhat smaller. Overall, total cash compensation for physicians grew 16.1 percent from 2013 to 2017, with variation by specialty over time. Standardizing physician compensation to the rate of primary care physicians per work RVU would yield significant decreases in total cash compensation for some specialties relative to current compensation and reduce, though not eliminate, disparities in physician compensation relative to primary care.

Introduction

A primary goal of the 1992 Medicare physician payment reforms based on a resource-based relative value scale (RBRVS) was to create an economically neutral fee schedule (i.e. one that rewards all physician work equally). When developing that fee schedule—now referred to as the Medicare Physician Fee Schedule (MPFS)—the Centers for Medicare and Medicaid Services (CMS) refined and expanded William Hsiao and colleagues’ estimates of the work required to perform physician services. Payment for each service in the fee schedule is based on its work relative value unit (RVU), which reflects the time and intensity of clinical effort associated with delivering the service, as well as expenses related to maintaining a practice

(practice expense RVUs), and professional liability insurance costs (PLI RVUs). The MPFS increased evaluation and management (E&M) service payments and reduced procedure and test payments relative to historical levels. Policymakers expected that these changes would raise per service Medicare payments for primary care and reduce per service Medicare payments for most other specialties (Hogan 1993).

At the time of the MPFS' creation, "resource-based" applied to work but not practice expenses. From 1998 to 2004, policymakers extended "resource-based" to include practice expenses; with these changes, the MPFS is now considered resource-based and designed as neutral across specialties (i.e. payment is supposed to reflect the underlying resource costs associated with reimbursable services). Per hour compensation differences are supposed to only reflect differences in practice expenses and the work associated with each specialty's service mix.

Research has found a lack of redistribution beyond what occurred just after the initial implementation period during which resource-based relative value units were reduced for procedures and tests and increased for E&M services (Maxwell, et al. 2007). Accelerated service volume growth has counterbalanced modest increases in the relative value units (RVUs) assigned to many E&M services—with tests (e.g., imaging) and minor procedures increasing at a faster rate than E&M services and major procedures. Additionally, few of the services newly approved for payment under the MPFS fell under the E&M category, further increasing the differential volume growth of reimbursable services (Maxwell, et al. 2007).

The Medicare Payment Advisory Commission (MedPAC) has a longstanding concern that the MPFS and the nature of fee-for-service (FFS) payment has contributed to an undervaluing of primary care and an overvaluing of specialty care. The resource-based relative value scale (RBRVS), which forms the basis for the fee schedule, includes mispriced services that can widen the income disparity between primary care and specialty physicians. Payment rates can overestimate the time and effort involved in delivering mispriced services. For example, technological advances have allowed providers to perform some procedures more efficiently over time, yet updates to the work RVUs in some cases do not fully reflect these productivity gains (Zuckerman et al, 2015). Additionally, FFS payment allows some specialties to more easily increase their service volume and therefore their Medicare revenue. Such increases are less likely for other specialties, particularly those that spend most of their time providing E&M services.

To address these concerns, MedPAC engaged the Urban Institute to analyze physician compensation using 2007 data from the Medical Group Management Association 's (MGMA) Physician Compensation and Production Survey (Berenson, et al. 2010). That analysis suggested that the MPFS (specifically, its relative value units (RVUs)) is an important source of the disparities in physician compensation; the disparities among specialties persisted when compensation was simulated as if all physician services were

paid under the MPFS. This reinforces that the MPFS serves as a base for other fee schedules. The Urban Institute updated that analysis, using 2010 and 2012 data, and produced similar results.

In 2017, the Urban Institute and SullivanCotter were tasked with determining whether more recent data from an alternative source (SullivanCotter's 2017 Physician Compensation and Productivity Survey, describing compensation in 2016) could be used to assess disparities in physician compensation across specialties using a different data source and revised methods from the prior simulations.¹ The proof-of-concept project showed a strong positive correlation between compensation and cumulative work RVUs, which is the sum of each physician's units of service by billing code multiplied by the respective code's work RVUs. The results suggest the SullivanCotter data is well-suited to update previous analyses of physician compensation.

The goal of the present task is to use the SullivanCotter data to assess disparities in physician compensation by physician specialty and specialty group. In addition to describing physician compensation, work RVUs, and compensation per work RVU in 2017 and recent trends in total compensation, this analysis computes a standardized compensation for physicians. This approach holds constant the compensation rate per RVU across physicians—using primary care physicians' median rate as the standard—to isolate the relative contributions of physician work volume and compensation per RVU to disparities in total compensation across specialties.

Data and Methods

We used data from the 2014 through 2018 editions of SullivanCotter's Physician Compensation and Productivity Survey Report. These reports surveyed compensation and productivity covering the previous calendar years 2013 to 2017. Survey participants report data for employed physicians at the individual physician level. The survey collects physician position level, organization classification, specialty, full-time equivalent (FTE) status, total cash compensation, and annual work RVUs (but not total RVUs). The database includes 167,383 physicians from 749 organizations in 191 specialties. Participants consist of large health systems, hospitals and medical groups. While participation is open to independent practices, they are not a significant source of data. Compensation and productivity for records with less than 1.0 FTE is annualized to reflect 1.0 FTE status.

Participants report position level (chair, chief, program director, staff physician) for each physician. Our analysis focuses on staff physicians whose primary work effort is on clinical patient care as opposed to program directors, chiefs and chairs. The other position levels have significant work effort dedicated to

¹ Previous simulations used MGMA data on total RVUs. The SullivanCotter data include work RVUs but not total RVUs.

administrative work, and their clinical work effort varies, so work RVUs are not a primary factor in determining compensation for people in these positions.

Our analysis is restricted to large specialties with at least 500 physicians. After aggregating similar specialties and subspecialties so that we have sufficient sample size for analysis (i.e., at least 500 physicians), we have 28 specialties. To observe compensation and productivity trends across broad specialty groups, we further aggregate these specialties into six specialty groups: primary care; nonsurgical, nonprocedural specialties; nonsurgical, procedural specialties; surgical specialties, radiology; and pathology (see Table 1).

With these position level and specialty restrictions, we have 76,336 physicians from 418 organizations with total cash compensation data. Total cash compensation includes base salary, incentive compensation and other cash compensation. Other cash compensation may include honoraria, longevity bonuses, retention bonuses, profit-sharing, sign-on bonuses, long-term incentive payments and the like, but does not include on-call pay or pay for extra work such as moonlighting. Work RVUs are reported for 44,605 physicians in 295 organizations.

In this report, we are examining the role of physician productivity, measured by work RVUs, on compensation across specialties. We focus on staff physicians and compute descriptive statistics by specialty and specialty group for total cash compensation, work RVUs, and total cash compensation per work RVU. These data are adjusted to a 1.0 FTE basis prior to being analyzed for physicians working less than full time. We tabulated total cash compensation statistics for two different samples—all records and only those records which reported work RVUs—because we can compute total cash compensation per work RVU only for those records with work RVU data. For consistency, this report includes total cash compensation estimates for the latter sample, physicians with work RVU data. We assess each physician's compensation, work RVUs, and compensation per RVU and report the 25th percentile, mean, median, 75th, and the standard deviation in values, aggregating individual estimates by specialty group and separately for individual specialty. We used median values to compute ratios comparing individual specialties to family medicine and specialty groups to the primary care group. The closer a ratio is to 1.0, the smaller the differential; individual specialties or specialty groups with ratios greater than 1.0 have higher median total cash compensation, work RVUs, or total cash compensation per work RVU, relative to primary care or family medicine physicians (and vice versa).

To explore trends in total compensation, we tabulated sample size and total cash compensation from 2013 to 2017 for each specialty and specialty group. We also computed the five-year cumulative percent change and the annual percent change in median annual compensation for all physicians, for each specialty, and for each specialty group. After tabulating estimates for all records, it appeared that individual specialties experienced unexpected or inconsistent changes in some years that could potentially

be related to differences in survey respondents from year to year. To eliminate this potential factor, we also assessed trends in compensation using a cohort approach that included only those organizations and physicians in both the 2014 and 2018 surveys (for five-year trends) and two-year periods (e.g. 2014 and 2015) for annual changes in compensation.

Our final task involved computing standardized physician compensation. Each individual physician's compensation was decomposed into the product of their work RVUs and compensation per work RVU. Using the lowest specialty group's median total cash compensation per work RVU (i.e., primary care) in place of the individual physician's total cash compensation per work RVU, we computed a standardized compensation value for each physician. We tabulated summary statistics (mean, median, and quartiles) of this standardized compensation, aggregating individual physician values by specialty and specialty group. As above, we computed ratios that compared the median standardized compensation values for specialties and specialty groups to family medicine and primary care, respectively. We also compared median actual total cash compensation with median standardized total cash compensation to illustrate the change in compensation each specialty and specialty group would experience under a reimbursement scenario in which physicians were paid a standard rate per work RVU.

Results

Tables 1 and 2 present physician total cash compensation overall in 2017, by specialty group, and by specialty. Table 1 includes compensation data from all physicians who met the position level and specialty size criteria specified above; Table 2 presents compensation data for only those physicians who also had annual work RVU data. Our estimates of total compensation, compensation per work RVUs, and the computation of standardized compensation are based on the physicians in Table 2. Among the six specialty groups included in this analysis, radiologists have the highest median compensation (\$481,335) and primary care physicians have the lowest median compensation (\$241,687). The ratio of median compensation for radiologists relative to primary care physicians is 1.99, meaning radiologists typically make twice as much as primary care physicians. Looking at individual specialties, general pediatricians have a slightly lower compensation than family medicine physicians (\$236,855 versus \$238,343). All other specialties have higher annual total cash compensation than family medicine physicians, with neurological surgeons having the highest median total cash compensation (\$747,613) followed by cardiovascular and cardiothoracic surgeons (\$710,000) and orthopedic surgeons (\$569,911).

Table 3 presents physician annual work RVUs overall, by specialty group, and by specialty. Among the six specialty groups, radiologists have the highest volume of work RVUs, with a median of 8,862 work RVUs per year. The median value for work RVUs among primary care physicians is 4,833. Nonsurgical, nonprocedural physicians have a lower median volume of work RVUs than primary care physicians (4,554,

ratio 0.94); the other specialty groups all have higher median work RVU volume. Among individual specialties included in this analysis, cardiovascular and cardiothoracic surgeons generate the most work RVUs, with a median of 9,822; psychiatrists have the fewest work RVUs, with a median of 3,689. There are nine specialties with a median work RVU volume that is lower than the median volume for family medicine (4,835).

Table 4 shows physician compensation per work RVU overall, by specialty group, and by specialty. Nonsurgical, procedural specialists have a median compensation per work RVU of \$68.90; their compensation per work RVU is the highest of the six specialty groups included in this analysis. Primary care physicians have the lowest compensation per work RVU among the specialty groups, \$51.22. We use this rate as the standard compensation per work RVU in subsequent analyses. For individual specialties, family medicine physicians earn a median of \$50.37 per work RVU. Three specialties (pediatrics, nephrology, and ophthalmology) have median compensation per RVU that is lower than the median among family medicine physicians. The median compensation per work RVU for oncologists is \$96.45, the highest among individual specialties, followed by neurological surgeons at \$81.73 per work RVU. Oncologists receive a significant share of compensation from Part B drugs like chemotherapy, which are not paid on the basis of work RVUs. As a result, they have a lower volume of work RVUs and a higher compensation per work RVU.

Figure 1 summarizes data from Tables 2-4 for specialty groups to show the relationships between median work RVUs, compensation per work RVU, and total compensation. Primary care physicians have both relatively low work RVUs and low compensation per work RVU compared to the other specialty groups, and their median total cash compensation is smaller (reflected in the area of the circle for primary care). Nonsurgical, procedural specialists, surgeons, and radiologists both have higher work RVUs, TCC/work RVU, and TCC than primary care. The higher TCC for nonsurgical, procedural specialists reflects much higher compensation per RVU while TCC for radiologists reflects a much higher volume of work RVUs.

Table 5 shows trends in physician total cash compensation between 2013 and 2017 for physicians overall, by specialty group, and specialty. In table 5, we include all physicians in each survey who meet the sample eligibility criteria with total cash compensation data, including those without work RVU data (the same group of physicians as in Table 1, with identical sample sizes for 2017 in both tables). Overall, compensation increased 16.1 percent for physicians between 2013 and 2017, ranging from a 4.8 percent increase for radiologists to a 16.8 percent increase for nonsurgical, nonprocedural specialists. Primary care specialists experienced a 15.1 percent increase in compensation over the five-year period. Several individual specialties experienced particularly high increases in compensation—the three specialties with the highest increases over the five-year period were emergency medicine (21.9 percent), psychiatry (19.0

percent), and pulmonology (19.0 percent). The year-to-year changes in compensation fluctuated across specialties. For example, pathologists reported a -4.0 percent decrease in compensation from 2015 to 2016 followed by a 7.1 percent increase from 2016 to 2017.

Tables 6 and 7 present results for changes in compensation over time using a cohort approach where we restrict the sample to those organizations and physicians who were present in both the 2014 and 2018 surveys (for 5-year trends in Table 6, reflecting compensation data from 2013 and 2017) and consecutive surveys (e.g. 2014 and 2015) for two-year trends in Table 7. This is intended to eliminate the effect of differences in survey respondents each year on compensation estimates. However, this approach reduces the sample size of organizations and physicians and ultimately the generalizability of estimates. For example, table 1 and table 5 include observations for 418 organizations and 76,336 physicians, but table 6 only has estimates for the 11,272 physicians present at the same 88 organizations in both the 2014 and 2018 survey samples. This cohort approach yields estimates of changes over five years that are consistent overall with the full dataset—a 15.9 percent increase in compensation for all physicians (versus 16.1 percent using the full dataset)—though the ranking of increases across specialties differs. The two-year cohorts in table 7 do appear to reduce the fluctuations in changes in compensation, but we do still observe some variability. For example, rheumatologists experienced a 0.6 percent increase in TCC between 2013 and 2014 followed by a 6.5 percent increase between 2014 and 2015. Pulmonologists had a 3.9 percent increase in TCC between 2014-2015 followed by a 10.1 percent increase between 2015-2016. Median total cash compensation for radiologists actually decreased between 2013 and 2014, then increased by almost 5 percent the next year. Likewise, several other specialties (physical medicine and rehabilitation, cardiology, oncology, orthopedic surgery, cardiovascular surgery and pathology) experience an increase of less than 1.5 percent in one year followed by more than a 5 percent increase in TCC in the next year.

Table 8 compares median actual total cash compensation to median standardized compensation overall, by specialty, and specialty group. Overall, physicians would receive a 10.3 percent decrease in compensation if paid at the rate per work RVU of primary care physicians (\$51.22). There is a modest increase in the compensation for primary care physicians (2.4 percent). The reason that standardized TCC is slightly higher than actual TCC is because the distribution of compensation per work RVU among primary care physicians is skewed, with a long right tail. Primary care physicians with compensation rates above the median effectively receive a “pay cut” per RVU under standardization, while those currently below the median (particularly pediatricians) see a pay increase under standardization. The distribution of work RVUs is also slightly skewed. Primary care physicians with a pay increase per RVU under standardization also tend to have a higher volume of work RVUs, so the median standardized compensation for all primary care physicians is slightly higher as a result. Nonsurgical, procedural specialties would experience a sizeable decrease in compensation (-24.5 percent), followed closely by

nonsurgical, nonprocedural specialties (-18.6 percent). The individual specialties particularly affected by a shift to standardized compensation are oncologists (-45.5 percent decrease), followed by neurological surgeons (-36.1 percent decrease). Eleven of the 29 specialties would experience more than a 20 percent decrease in compensation.

Table 9 presents estimates of standardized total cash compensation overall, by specialty, and specialty group, computed by taking each physician's work RVUs multiplied by the compensation per RVU for primary care physicians (\$51.22). The patterns of standardized compensation relative to primary care (and family medicine) mimic those found in table 3 describing work RVUs; cardiovascular and cardiothoracic surgeons have a median standardized compensation of \$503,083, followed by neurological surgeons at \$478,027. Psychiatrists have the lowest median standardized compensation, with a value of \$188,958. Compensation based solely on work RVUs produces some different relativities than what we see in actual compensation for the nonsurgical, nonprocedural group (table 2). Median actual compensation for nonsurgical, nonproceduralist physicians is higher than that of primary care physicians (ratio of 1.19), while the standardized compensation for this specialty group is below that of primary care (ratio of 0.94). However, the other specialty groups have higher actual compensation and higher standardized compensation than the primary care group.

Figure 2 shows that disparities in compensation remain even when compensation per work RVU is held constant because of the variation in cumulative work RVUs across specialties. It shows ratios for median actual compensation for each specialty relative to family medicine (represented by circles) and ratios for median standardized compensation for each specialty relative to family medicine (represented by triangles), arranged by the specialty's median work RVUs. For the nine specialties² with median work RVU volume below the family medicine median (i.e., those that are to the left of the reference line and mentioned above in the Table 3 results), the standardized median TCC for each specialty is below the standardized median TCC for family medicine (i.e., the standardized median TCC ratio is less than 1.0). These nine specialties also experience a decrease in median total compensation after standardization because the standardized TCC per work RVU (\$51.22) is lower than each specialty's actual compensation per work RVU. However, the three specialties³ with a median actual TCC per work RVU that is lower than family medicine (presented in Table 4) would see an increase in median compensation under

² The nine specialties with median work RVU volume below the family medicine median are internal medicine, endocrinology and metabolism, hospitalist, neurology, physical medicine and rehabilitation, psychiatry, rheumatology, other internal medicine/pediatrics, and oncology and hematology/oncology,

³ The three specialties with median actual TCC per work RVU below family medicine are pediatrics-general, nephrology, and ophthalmology.

standardization (i.e., the triangle is higher than the circle). The remaining fifteen specialties⁴ have both a higher volume of actual work RVUs and a higher median actual compensation rate per RVU than family medicine before standardization (i.e., their circles are to the right of the reference line and above 1.0). For these specialties, median standardized TCC is lower than median actual TCC, but it remains higher than median standardized TCC for family medicine (i.e. the triangle is lower than the circle, but still above 1.0).

Discussion

Reviewing Tables 1-4 shows that radiologists' median total compensation and work RVUs are almost double those of primary care specialists while radiologists' compensation per work RVU is close to that of primary care specialists—suggesting that radiologists' relatively high compensation is driven in part by their ability to generate a high volume of work RVUs. A similar trend is evident when comparing cardiovascular and cardiothoracic surgeons to family medicine physicians, with cardiovascular and cardiothoracic surgeons' median compensation almost triple that of family medicine physicians, median work RVU volume twice as large, and median compensation per work RVU only about a third larger than that of family medicine physicians.

The specialty differentials for other individual specialties or specialty groups indicate that their high median compensation relative to primary care or family medicine physicians is driven more by differentials in total cash compensation per work RVU than by differences in work RVU volume. For example, median total cash compensation for hematologists/oncologists is about 60 percent higher than that of family medicine physicians while their work RVU volume is slightly lower and median total cash compensation per work RVU is almost double that of family medicine physicians. This pattern suggests that TCC for hematologists/oncologists is greater than would be expected based solely on the volume of work RVUs. This specialty receives a large share of its compensation from Part B drugs, which are not paid on the basis of RVUs.

Whether using the full dataset or a cohort approach, physician compensation has increased about 16 percent over the past five years (tables 5-7). Looking at trends for all physicians, the relatively small increase for radiologists (4.8 percent) could reflect their relatively high base compensation in 2013 as well as attempts to rein in spending on unnecessary diagnostic and imaging services in recent years. Nephrology compensation was unchanged from 2016 to 2017 because of a large organization that pays physicians a flat base salary (Table 5). The organization reported compensation data for physicians in

⁴ These fifteen specialties are pulmonology, pathology, general surgery, obstetrics/gynecology, emergency medicine, dermatology, otolaryngology, other surgical specialties, cardiology, urology, gastroenterology, orthopedic surgery, radiology, neurological surgery, and cardiovascular and cardiothoracic surgery.

several pay grades in both years. While some physicians moved up pay grades from 2016 to 2017, the \$271,800 pay grade was the median in both years. Nephrology was also a new job category in the 2015 survey, which produced data for 2014; changes in nephrology compensation may be a result of new organizations reporting this specialty.

From 2014 to 2015, several specialties had large increases in compensation—for example, emergency medicine physicians, hospitalists, and oncologists each had increases in total compensation of over 6 percent in that time period (table 5). Emergency medicine—which had a 21.9 percent increase in payments over the five years—has shifted toward contract-based arrangements in which hospitals must negotiate with an outside company for their physicians. This dynamic has increased the bargaining power of emergency medicine physicians and likely allowed them to extract higher compensation rates for their services.

From 2015 to 2016, the overall increase in physician compensation was only 0.8 percent (table 5). In that time period, twelve specialties experienced no change or even a significant decrease in compensation. Looking at the participant mix in these years we see several large medical groups from California introduced in the 2015 survey (reflecting compensation in 2014), which is traditionally a high pay area for physicians. The number of physicians these California groups reported in 2015 and 2016 varies quite a bit. We believe that the change in organizations reporting data drove the changes in the 2015 data. While the cohort approach in Tables 6 and 7 does reduce variability in the respondent sample over time, the sample size is much smaller. Due to the limitations present in both these approaches, we have the most confidence in reported trends for all physicians and for aggregated specialty groups using the full sample (table 5).

In comparing median standardized compensation for primary care to other specialty groups and family medicine to individual specialties (Table 9 and Figure 2), we see identical patterns to those seen in Table 3, work RVUs by specialty. This is unsurprising, as we have effectively multiplied work RVUs by a constant value. As a result, specialties that are able to generate a high number of work RVUs such as neurological and cardiovascular surgeons continue to have higher median compensation relative to family medicine. Further, because there is variability in work RVUs across specialties, disparities in total compensation persist even under a standardized approach. Standardizing lessens the differential but does not eliminate it because of the differences in work RVU volume. For example, median actual TCC for cardiologists is 1.92 times higher than family medicine. After standardizing, median TCC is 1.52 times higher. Standardizing eliminates 44% of the differential in median TCC, so the difference in TCC per work RVU explains 44 percent of the differential while the difference in work RVUs explains 56 percent. For radiologists, standardization eliminates 16 percent of the differential in median TCC, so the difference in work RVUs explains 84 percent of the differential in TCC.

Comparing actual versus standardized cash compensation (table 8), we find that those specialties for which current compensation per work RVU is relatively high and for whom the number of work RVUs is relatively low would experience the greatest decrease in compensation if all physicians were paid at the same compensation rate as primary care physicians. Oncologists in particular, who receive a significant share of their compensation from Part B drugs, would be adversely affected. Conversely, radiologists have a relatively high number of work RVUs compared to primary care (ratio of 1.83), while their compensation per work RVU is relatively close to primary care (1.12). Radiologists, therefore, do not experience as significant a reduction in compensation under a standardized approach (-5.7 percent) because of their ability to generate revenue from a high number of work RVUs.

Conclusion

One of the primary objectives of the 1992 Medicare payment reforms that led to the MFPS was to develop a neutral fee schedule that rewards all physician work equally. This analysis applies a standard compensation rate to observed physician work RVUs and assesses standardized total cash compensation. We find that the differences between standardized and actual total cash compensation are largest for those specialties and specialty groups that, over time, have managed to attract a premium compensation rate per work RVU. These specialties tend to be procedural in nature and oversee expensive Part B medications (e.g. chemotherapy) and major surgeries with global fees (e.g. hip replacements). Even after applying the standard compensation rate, the variation in annual work RVUs across specialties results in persistent disparities in standardized physician compensation. The variation in work RVUs across specialties stems from three sources: the number of hours physicians work per year; 2) the ability of certain specialties (such as proceduralists) to generate more RVUs per hour worked than specialties that rely on face-to-face office visits (such as primary care); and (3) misvalued work RVUs. There is evidence to suggest that current work RVUs are misvalued (Zuckerman et al, 2016), because changes in work RVUs have not reflected changes in technology in some specialties and because work RVUs may continue to undervalue cognitive effort, such as the management of complex conditions by primary care providers. Addressing the misvaluations in work RVUS so that the values reflect true differences in time and intensity could further reduce disparities in physician compensation.

References

- Berenson, Robert, Stephen Zuckerman, Karen Stockley, Radhika Nath, David Gans, and Terry Hammons. 2010. *What if All Physician Services Were Paid Under the Medicare Fee Schedule? An Analysis Using Medical Group Management Association Data: Final Report*. Washington DC: MedPAC.
- Hogan, Christopher. "Physician Incomes Under an All-Payer Fee Schedule." *Health Affairs*, Fall 1993: 170-176.
- Maxwell, Stephanie, Stephen Zuckerman, and Robert Berenson. "Use of Physician Services under Medicare's Resource-Based Payments." *The New England Journal of Medicine*, 2007, 356(13): 1853-1861.
- McCall, Nancy, Jerry Cromwell, and Peter Braun. 2006. "Validation of Physician Survey Estimates of Surgical Time Using Operating Room Logs." *Medical Care Research and Review* 63 (6): 1-14.
- Merritt Hawkins. 2014. "RVU FAQ: Understanding RVU Compensation in Physician Employment Agreements." Available at https://www.merrithawkins.com/uploadedFiles/MerrittHawkins/Pdf/RVU_FAQ-%20Understanding_RVU%20Compensation_Physician_Employment_Agreements.pdf (accessed 24 January 2018).
- Smith, Timothy and Mark O. Dietrich. 2016. "Chapter 26: On the Use and Misuse of Survey Data: An Interview With MGMA", except from *BVR/AHLA Guide to Valuing Physician Compensation and Healthcare Service Arrangements, 2nd Edition*. Portland, OR: Business Valuation Resources. Available at: http://www.hcca-info.org/Portals/0/PDFs/Resources/Conference_Handouts/Compliance_Institute/2017/602_HCIndustryCompensation_Chapter26.pdf (accessed 24 January 2018).
- Wynn, Barbara O., Lane F. Burgette, Andrew W. Mulcahy, Edward N. Okeke, Ian Brantley, Neema Iyer, Teague Ruder, and Ateev Mehrotra. 2015. *Development of Model for the Valuation of Work Relative Value Units for the Medicare Physician Fee Schedule*. Santa Monica, CA: RAND Corporation.
- Zuckerman, Stephen, Katie Merrell, Robert A. Berenson, Nicole Cafarella Lallemand, and Jonathan Sunshine. 2015. *Realign Physician Payment Incentives in Medicare to Achieve Payment Equity among Specialties, Expand the Supply of Primary Care Physicians, and Improve the Value of Care for Beneficiaries*. Washington DC: Urban Institute.
- Zuckerman, Stephen, Katie Merrell, Robert A. Berenson, Susan Mitchell, Divvy Upadhyay, and Rebecca Lewis. 2016. *Collecting Empirical Physician Time Data: Piloting an Approach for Validating Work Relative Value Units*. Washington DC: Urban Institute.

TABLE 1

Physician Total Cash Compensation by Specialty, 2017

	Organizations	Physicians	Physician Total Cash Compensation					Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation	
All specialties	418	76,336	\$232,712	\$343,601	\$300,000	\$405,853	\$170,132	1.24
Primary care specialties	367	26,787	\$204,602	\$261,382	\$242,041	\$300,424	\$91,258	1.00
Family medicine	298	11,454	\$207,752	\$260,725	\$241,085	\$299,900	\$86,130	1.00
Internal medicine	283	9,706	\$207,422	\$267,240	\$249,206	\$308,201	\$96,491	1.03
Pediatrics – general	246	5,627	\$193,308	\$252,617	\$232,159	\$290,791	\$91,369	0.96
Nonsurgical, nonprocedural specialties	332	21,874	\$234,896	\$299,323	\$282,800	\$347,459	\$99,273	1.17
Emergency medicine	136	4,251	\$292,616	\$352,697	\$348,652	\$401,874	\$91,992	1.45
Endocrinology and metabolism	193	1,116	\$205,233	\$253,980	\$241,457	\$282,439	\$79,239	1.00
Hospitalist	236	7,775	\$240,001	\$290,713	\$277,120	\$325,253	\$78,665	1.15
Nephrology Only	76	381	\$219,649	\$297,040	\$271,800	\$335,050	\$115,340	1.13
Neurology	211	2,161	\$235,221	\$301,177	\$282,776	\$332,616	\$116,110	1.17
Physical medicine and rehabilitation	142	836	\$214,142	\$283,453	\$266,566	\$320,500	\$99,960	1.11
Psychiatry	174	2,297	\$200,519	\$255,322	\$241,200	\$297,864	\$84,430	1.00
Rheumatology	166	761	\$211,745	\$262,489	\$250,750	\$297,986	\$81,098	1.04
Other internal medicine/pediatrics	216	2,296	\$220,784	\$312,339	\$283,750	\$377,516	\$131,116	1.18
Nonsurgical, procedural specialties	278	8,249	\$322,637	\$451,726	\$426,419	\$548,784	\$189,803	1.76
Cardiology	195	2,586	\$357,024	\$482,689	\$457,271	\$563,130	\$193,629	1.90
Dermatology	127	866	\$347,293	\$465,769	\$431,671	\$528,263	\$203,936	1.79
Gastroenterology	194	1,864	\$370,622	\$497,463	\$488,256	\$583,000	\$192,195	2.03
Oncology – hematology and oncology	168	2,126	\$287,428	\$404,394	\$388,697	\$465,750	\$168,194	1.61

	Organizations	Physicians	Physician Total Cash Compensation					Standard Deviation	Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile			
Pulmonology	138	807	\$254,886	\$356,485	\$331,173	\$432,800	\$143,296	1.37	
Surgical	326	14,934	\$323,231	\$471,943	\$419,957	\$558,316	\$228,576	1.74	
Obstetrics/gynecology	244	4,357	\$263,696	\$356,006	\$326,215	\$408,044	\$145,371	1.35	
Ophthalmology	108	706	\$296,723	\$400,564	\$381,820	\$479,549	\$163,313	1.58	
Orthopedic surgery	176	1,609	\$465,584	\$609,439	\$570,000	\$686,817	\$227,930	2.36	
Otolaryngology	157	941	\$354,500	\$462,162	\$429,240	\$519,531	\$163,093	1.78	
General surgery	260	2,906	\$320,000	\$420,962	\$393,909	\$488,500	\$167,561	1.63	
Cardiovascular and cardiothoracic surgery	138	665	\$515,041	\$695,387	\$654,500	\$822,588	\$257,973	2.71	
Neurological surgery	143	810	\$594,785	\$811,958	\$737,289	\$948,846	\$372,990	3.06	
Urology	185	1,139	\$370,386	\$469,667	\$444,858	\$534,034	\$148,659	1.85	
Other surgical specialties	199	1,801	\$383,875	\$510,951	\$475,000	\$589,250	\$193,175	1.97	
Radiology	110	2,640	\$396,141	\$488,338	\$460,445	\$547,831	\$139,489	1.90	
Radiology	110	2,640	\$396,141	\$488,338	\$460,445	\$547,831	\$139,489	1.91	
Pathology	93	1,852	\$257,754	\$332,942	\$316,860	\$395,248	\$104,386	1.31	
Pathology	93	1,852	\$257,754	\$332,942	\$316,860	\$395,248	\$104,386	1.31	

Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

Note: The comparison ratios for specialty groups are calculated as the median total cash compensation for the physicians in each specialty group relative to primary care physicians.

The comparison ratios for individual specialties are calculated as the median total cash compensation for physicians in each specialty relative to family medicine physicians.

TABLE 2

Physician Total Cash Compensation by Specialty, among Physicians Reporting Work RVUs, 2017

	Organizations	Physicians	Physician Total Cash Compensation					Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation	
All specialties	295	44,605	\$235,769	\$347,392	\$301,051	\$410,332	\$168,552	1.25
Primary care specialties	263	16,565	\$207,317	\$261,143	\$241,687	\$295,746	\$84,986	1.00
Family medicine	222	7,403	\$207,685	\$256,204	\$238,343	\$287,769	\$77,093	1.00
Internal medicine	216	5,431	\$211,071	\$269,773	\$249,796	\$307,000	\$91,928	1.05
Pediatrics – general	183	3,731	\$201,869	\$258,381	\$236,855	\$294,028	\$88,368	0.99
Nonsurgical, nonprocedural specialties	242	12,215	\$243,238	\$303,549	\$286,448	\$349,019	\$94,997	1.19
Emergency medicine	90	2,138	\$299,566	\$356,509	\$351,022	\$405,160	\$90,633	1.47
Endocrinology and metabolism	146	654	\$206,476	\$255,162	\$241,406	\$285,000	\$75,154	1.01
Hospitalist	178	4,897	\$249,284	\$295,126	\$284,234	\$328,063	\$74,865	1.19
Nephrology Only	57	269	\$226,943	\$308,974	\$288,665	\$342,429	\$112,408	1.21
Neurology	168	1,303	\$239,528	\$302,967	\$282,408	\$338,026	\$104,142	1.18
Physical medicine and rehabilitation	116	468	\$221,318	\$288,427	\$265,750	\$332,161	\$98,606	1.11
Psychiatry	117	889	\$215,335	\$264,241	\$250,000	\$294,240	\$83,402	1.05
Rheumatology	122	446	\$220,105	\$263,325	\$252,039	\$296,734	\$70,506	1.06
Other internal medicine/pediatrics	158	1,151	\$237,093	\$319,984	\$289,683	\$379,211	\$133,946	1.22
Nonsurgical, procedural specialties	209	4,563	\$340,293	\$466,269	\$433,863	\$559,511	\$184,380	1.80
Cardiology	146	1,358	\$363,224	\$485,236	\$456,705	\$588,187	\$177,305	1.92
Dermatology	97	525	\$342,959	\$474,428	\$430,242	\$539,077	\$209,605	1.81
Gastroenterology	152	1,149	\$384,920	\$513,025	\$488,572	\$613,140	\$187,172	2.05
Oncology – hematology and oncology	129	1,075	\$307,386	\$422,207	\$394,264	\$497,486	\$171,568	1.65

	Organizations	Physicians	Physician Total Cash Compensation					Standard Deviation	Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile			
Pulmonology	95	456	\$278,764	\$386,457	\$352,033	\$471,566	\$143,911	1.48	
Surgical	251	8,909	\$332,083	\$477,843	\$424,171	\$563,390	\$220,859	1.76	
Obstetrics/gynecology	187	2,575	\$277,896	\$362,610	\$333,838	\$419,810	\$127,819	1.40	
Ophthalmology	84	424	\$315,178	\$415,089	\$387,584	\$486,503	\$152,763	1.63	
Orthopedic surgery	138	921	\$465,386	\$625,703	\$569,911	\$735,051	\$242,202	2.39	
Otolaryngology	129	611	\$355,000	\$466,520	\$429,143	\$534,146	\$164,245	1.80	
General surgery	203	1,834	\$330,203	\$425,258	\$396,612	\$488,871	\$153,688	1.66	
Cardiovascular and cardiothoracic surgery	107	339	\$564,381	\$726,163	\$710,000	\$835,202	\$233,656	2.98	
Neurological surgery	116	515	\$609,335	\$821,424	\$747,613	\$952,332	\$331,056	3.14	
Urology	146	708	\$376,498	\$478,007	\$444,512	\$544,539	\$148,116	1.87	
Other surgical specialties	150	982	\$384,535	\$507,646	\$462,586	\$584,840	\$187,639	1.94	
Radiology	85	1,678	\$417,239	\$509,316	\$481,335	\$581,870	\$143,243	1.99	
Radiology	85	1,678	\$417,239	\$509,316	\$481,335	\$581,870	\$143,243	2.02	
Pathology	60	675	\$262,342	\$329,488	\$317,692	\$379,058	\$95,958	1.31	
Pathology	60	675	\$262,342	\$329,488	\$317,692	\$379,058	\$95,958	1.33	

Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

Note: The comparison ratios for specialty groups are calculated as the median total cash compensation for the physicians in each specialty group relative to primary care physicians.

The comparison ratios for individual specialties are calculated as the median total cash compensation for physicians in each specialty relative to family medicine physicians.

TABLE 3

Work RVUs by Specialty, 2017

	Organizations	Physicians	Work RVUs					Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation	
All specialties	295	44,605	4,027	5,862	5,275	7,090	2,764	1.09
Primary care specialties	263	16,565	3,826	4,962	4,833	5,846	1,755	1.00
Family medicine	222	7,403	3,874	4,946	4,835	5,809	1,642	1.00
Internal medicine	216	5,431	3,628	4,771	4,644	5,604	1,789	0.96
Pediatrics – general	183	3,731	4,080	5,274	5,113	6,222	1,875	1.06
Nonsurgical, nonprocedural specialties	242	12,215	3,405	4,950	4,554	5,932	2,232	0.94
Emergency medicine	90	2,138	4,687	6,778	6,647	8,692	2,817	1.37
Endocrinology and metabolism	146	654	3,432	4,592	4,421	5,340	1,632	0.91
Hospitalist	178	4,897	3,217	4,400	4,255	5,306	1,722	0.88
Nephrology Only	57	269	4,510	6,385	6,073	8,065	2,424	1.26
Neurology	168	1,303	3,360	4,771	4,428	5,621	2,095	0.92
Physical medicine and rehabilitation	116	468	3,528	4,783	4,504	5,640	1,780	0.93
Psychiatry	117	889	2,674	4,057	3,689	5,067	1,836	0.76
Rheumatology	122	446	3,606	4,503	4,401	5,229	1,373	0.91
Other internal medicine/pediatrics	158	1,151	3,528	4,891	4,534	5,745	2,066	0.94
Nonsurgical, procedural specialties	209	4,563	4,503	6,793	6,395	8,456	3,037	1.32
Cardiology	146	1,358	5,630	7,699	7,336	9,424	3,006	1.52
Dermatology	97	525	5,207	7,191	6,710	8,481	3,030	1.39
Gastroenterology	152	1,149	5,969	7,848	7,583	9,389	2,929	1.57
Oncology – hematology and oncology	129	1,075	3,285	4,517	4,198	5,458	1,798	0.87
Pulmonology	95	456	4,184	6,343	5,727	8,125	2,781	1.18
Surgical	251	8,909	5,480	7,664	7,070	9,097	3,211	1.46
Obstetrics/gynecology	187	2,575	5,248	6,889	6,536	8,153	2,348	1.35
Ophthalmology	84	424	6,454	8,601	8,438	10,057	3,312	1.75
Orthopedic surgery	138	921	6,119	8,594	8,009	10,429	3,396	1.66

	Organizations	Physicians	Work RVUs				Standard Deviation	Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile		
Otolaryngology	129	611	5,583	7,194	6,665	8,308	2,576	1.38
General surgery	203	1,834	4,915	6,869	6,455	8,410	2,863	1.34
Cardiovascular and cardiothoracic surgery	107	339	7,184	10,745	9,822	13,640	4,633	2.03
Neurological surgery	116	515	6,764	10,233	9,333	12,775	4,596	1.93
Urology	146	708	5,792	7,699	7,364	9,243	2,656	1.52
Other surgical specialties	150	982	5,592	7,756	7,183	9,307	3,112	1.49
Radiology	85	1,678	6,753	9,115	8,862	11,016	3,204	1.83
Radiology	85	1,678	6,753	9,115	8,862	11,016	3,204	1.83
Pathology	60	675	4,544	6,312	6,007	7,739	2,216	1.24
Pathology	60	675	4,544	6,312	6,007	7,739	2,216	1.24

Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

Note: The comparison ratios for specialty groups are calculated as the median work RVUs for the physicians in each specialty group relative to primary care physicians. The comparison ratios for individual specialties are calculated as the median work RVUs for physicians in each specialty relative to family medicine physicians.

TABLE 4

Physician Total Cash Compensation per Work RVU by Specialty, 2017

	Organizations	Physicians	Physician Total Cash Compensation per Work RVU					Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation	
All specialties	295	44,605	\$47.40	\$63.56	\$57.77	\$73.88	\$23.85	1.13
Primary care specialties	263	16,565	\$44.49	\$56.07	\$51.22	\$62.26	\$18.68	1.00
Family medicine	222	7,403	\$44.29	\$55.07	\$50.37	\$59.96	\$18.26	1.00
Internal medicine	216	5,431	\$47.29	\$60.23	\$55.40	\$68.16	\$19.40	1.10
Pediatrics – general	183	3,731	\$41.94	\$52.01	\$47.93	\$57.03	\$17.23	0.95
Nonsurgical, nonprocedural specialties	242	12,215	\$51.01	\$69.26	\$63.19	\$81.12	\$27.82	1.23
Emergency medicine	90	2,138	\$38.82	\$64.44	\$52.65	\$74.57	\$38.72	1.05
Endocrinology and metabolism	146	654	\$47.96	\$58.47	\$55.18	\$67.31	\$14.81	1.10
Hospitalist	178	4,897	\$55.73	\$74.42	\$67.56	\$87.45	\$26.78	1.34
Nephrology Only	57	269	\$39.09	\$52.18	\$49.49	\$62.04	\$17.92	0.98
Neurology	168	1,303	\$53.72	\$68.77	\$64.15	\$78.48	\$21.41	1.27
Physical medicine and rehabilitation	116	468	\$52.83	\$63.49	\$61.42	\$72.98	\$17.01	1.22
Psychiatry	117	889	\$55.69	\$73.06	\$67.45	\$85.00	\$26.36	1.34
Rheumatology	122	446	\$50.62	\$61.33	\$56.91	\$69.11	\$16.56	1.13
Other internal medicine/pediatrics	158	1,151	\$51.08	\$69.44	\$65.28	\$82.36	\$23.64	1.30
Nonsurgical, procedural specialties	209	4,563	\$56.32	\$74.27	\$68.90	\$88.91	\$24.81	1.35
Cardiology	146	1,358	\$52.46	\$66.64	\$62.59	\$75.68	\$20.53	1.24
Dermatology	97	525	\$57.15	\$67.66	\$66.32	\$76.00	\$15.13	1.32
Gastroenterology	152	1,149	\$55.43	\$67.95	\$63.90	\$77.78	\$18.42	1.27
Oncology – hematology and oncology	129	1,075	\$79.50	\$97.28	\$96.45	\$115.36	\$26.58	1.91
Pulmonology	95	456	\$50.45	\$66.25	\$60.94	\$79.16	\$21.95	1.21

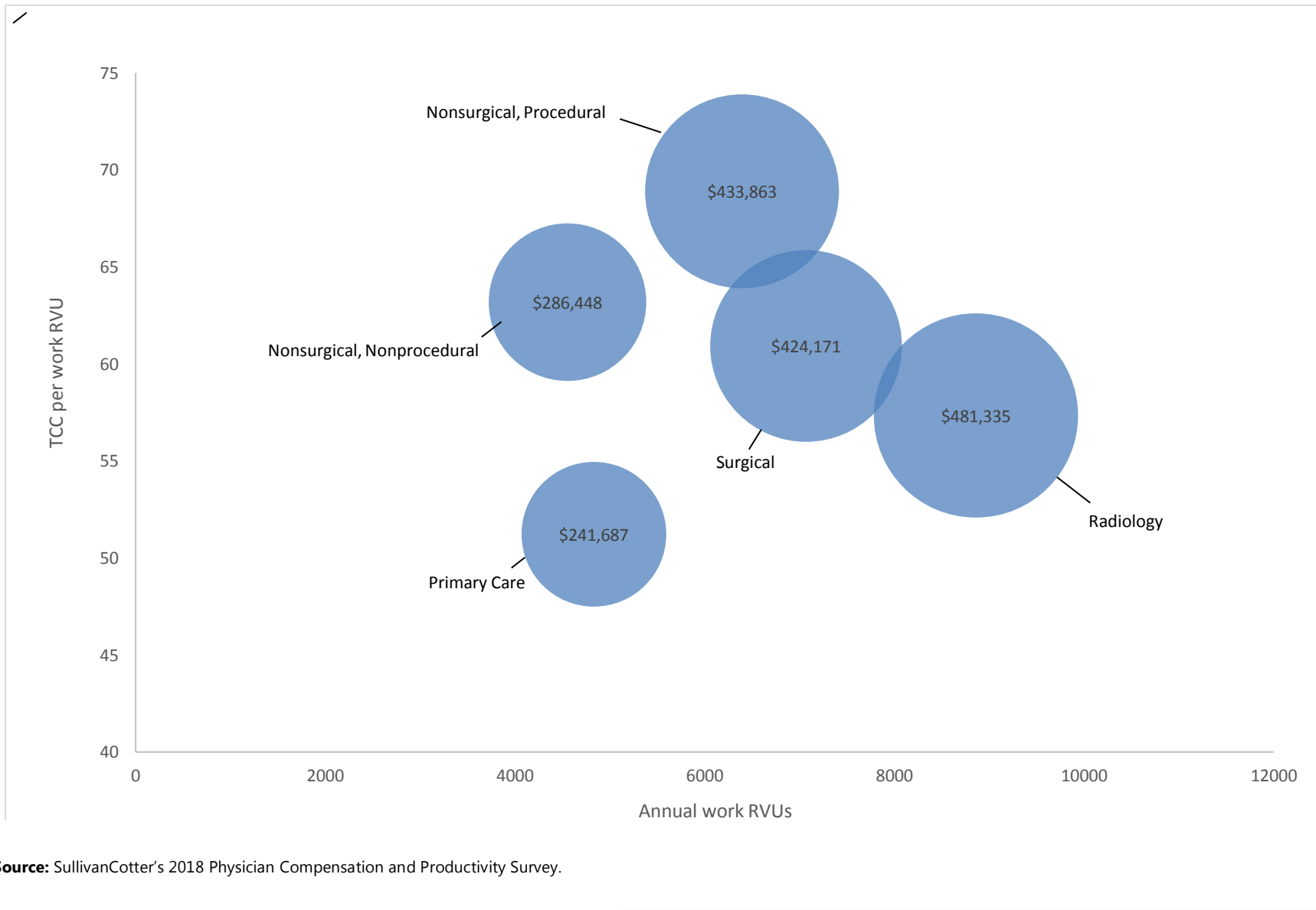
	Organizations	Physicians	Physician Total Cash Compensation per Work RVU					Comparison Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation	
Surgical	251	8,909	\$49.90	\$65.25	\$60.93	\$75.73	\$22.27	1.19
Obstetrics/gynecology	187	2,575	\$44.99	\$54.77	\$52.02	\$61.24	\$15.95	1.03
Ophthalmology	84	424	\$40.83	\$51.17	\$47.18	\$59.94	\$15.86	0.94
Orthopedic surgery	138	921	\$62.03	\$76.27	\$73.47	\$86.51	\$21.40	1.46
Otolaryngology	129	611	\$55.73	\$67.73	\$64.07	\$78.15	\$19.17	1.27
General surgery	203	1,834	\$51.26	\$67.05	\$62.20	\$75.91	\$23.88	1.23
Cardiovascular and cardiothoracic surgery	107	339	\$56.93	\$74.84	\$69.69	\$89.69	\$26.01	1.38
Neurological surgery	116	515	\$66.82	\$85.95	\$81.73	\$101.56	\$25.67	1.62
Urology	146	708	\$54.34	\$65.01	\$61.65	\$74.06	\$16.60	1.22
Other surgical specialties	150	982	\$54.05	\$69.57	\$66.63	\$80.92	\$21.27	1.32
Radiology	85	1,678	\$44.87	\$60.88	\$57.35	\$72.43	\$21.23	1.12
Radiology	85	1,678	\$44.87	\$60.88	\$57.35	\$72.43	\$21.23	1.14
Pathology	60	675	\$41.58	\$56.25	\$54.36	\$68.30	\$18.16	1.06
Pathology	60	675	\$41.58	\$56.25	\$54.36	\$68.30	\$18.16	1.08

Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

Note: The comparison ratios for specialty groups are calculated as the median total cash compensation per RVU for the physicians in each specialty group relative to primary care physicians. The comparison ratios for individual specialties are calculated as the median total cash compensation per RVU for physicians in each specialty relative to family medicine physicians.

FIGURE 1

Median Total Cash Compensation, Annual Work RVUs, and Compensation per Work RVU for Specialty Groups



Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

TABLE 5

Trends in Median Total Cash Compensation, All Physicians, 2013-2017

	<i>Median Total Cash Compensation (\$)</i>					<i>Percent Change in Median Total Cash Compensation</i>				
	2013	2014	2015	2016	2017	2013-2017	2013-2014	2014-2015	2015-2016	2016-2017
All specialties	258,339	277,509	279,767	292,141	300,000	16.1%	2.7%	4.4%	0.8%	7.4%
Primary care specialties	210,260	224,737	228,361	235,924	242,041	15.1%	2.6%	3.3%	1.6%	6.9%
Family medicine	209,868	225,546	226,000	236,088	241,085	14.9%	2.1%	4.5%	0.2%	7.5%
Internal medicine	212,676	227,624	232,857	240,744	249,206	17.2%	3.5%	3.4%	2.3%	7.0%
Pediatrics – general	207,712	216,239	225,121	226,853	232,159	11.8%	2.3%	0.8%	4.1%	4.1%
Nonsurgical, nonprocedural specialties	242,074	253,132	258,250	275,361	282,800	16.8%	2.7%	6.6%	2.0%	4.6%
Emergency medicine	285,971	302,371	305,776	326,731	348,652	21.9%	6.7%	6.9%	1.1%	5.7%
Endocrinology and metabolism	221,667	229,185	229,159	236,393	241,457	8.9%	2.1%	3.2%	0.0%	3.4%
Hospitalist	234,873	249,458	248,178	269,250	277,120	18.0%	2.9%	8.5%	-0.5%	6.2%
Nephrology Only	isd	291,875	257,250	271,800	271,800	isd	isd	5.7%	-11.9%	0%
Neurology	252,269	254,299	264,279	275,818	282,776	12.1%	2.5%	4.4%	3.9%	0.8%
Physical medicine and rehabilitation	235,177	246,064	254,068	260,838	266,566	13.3%	2.2%	2.7%	3.3%	4.6%
Psychiatry	202,752	223,380	226,577	234,173	241,200	19.0%	3.0%	3.4%	1.4%	10.2%
Rheumatology	229,700	231,038	240,251	244,699	250,750	9.2%	2.5%	1.9%	4.0%	0.6%
Other internal medicine/pediatrics	244,887	259,500	276,323	278,652	283,750	15.9%	1.8%	0.8%	6.5%	6.0%
Nonsurgical, procedural specialties	374,636	388,454	400,005	419,088	426,419	13.8%	1.7%	4.8%	3.0%	3.7%
Cardiology	401,103	418,444	425,000	447,267	457,271	14.0%	2.2%	5.2%	1.6%	4.3%
Dermatology	400,096	413,391	409,758	423,445	431,671	7.9%	1.9%	3.3%	-0.9%	3.3%
Gastroenterology	444,382	457,533	468,228	478,689	488,256	9.9%	2.0%	2.2%	2.3%	3.0%
Oncology – hematology and oncology	331,090	341,651	357,210	380,446	388,697	17.4%	2.2%	6.5%	4.6%	3.2%
Pulmonology	278,279	308,301	307,132	324,632	331,173	19.0%	2.0%	5.7%	-0.4%	10.8%
Surgical	373,060	389,553	391,969	408,920	419,957	12.6%	2.7%	4.3%	0.6%	4.4%
Obstetrics/gynecology	289,512	306,999	307,306	321,238	326,215	12.7%	1.5%	4.5%	0.1%	6.0%
Ophthalmology	329,790	356,791	357,317	373,068	381,820	15.8%	2.3%	4.4%	0.1%	8.2%
Orthopedic surgery	514,577	542,362	525,143	555,000	570,000	10.8%	2.7%	5.7%	-3.2%	5.4%
Otolaryngology	367,000	397,548	395,090	407,291	429,240	17.0%	5.4%	3.1%	-0.6%	8.3%
General surgery	356,395	369,846	378,206	390,017	393,909	10.5%	1.0%	3.1%	2.3%	3.8%
Cardiovascular and cardiothoracic surgery	578,716	592,920	599,344	649,562	654,500	13.1%	0.8%	8.4%	1.1%	2.5%
Neurological surgery	650,000	691,968	700,002	725,985	737,289	13.4%	1.6%	3.7%	1.2%	6.5%

	Median Total Cash Compensation (\$)					Percent Change in Median Total Cash Compensation				
	2013	2014	2015	2016	2017	2013-2017	2013-2014	2014-2015	2015-2016	2016-2017
Urology	409,044	420,160	420,567	425,059	444,858	8.8%	4.7%	1.1%	0.1%	2.7%
Other surgical specialties	419,244	437,000	443,851	455,510	475,000	13.3%	4.3%	2.6%	1.6%	4.2%
Radiology	439,350	444,781	453,041	466,039	460,445	4.8%	-1.2%	2.9%	1.9%	1.2%
Radiology	439,350	444,781	453,041	466,039	460,445	4.8%	-1.2%	2.9%	1.9%	1.2%
Pathology	285,954	306,130	293,937	314,275	316,860	10.8%	0.8%	6.9%	-4.0%	7.1%
Pathology	285,954	306,130	293,937	314,275	316,860	10.8%	0.8%	6.9%	-4.0%	7.1%

Source: SullivanCotter's 2014-2018 Physician Compensation and Productivity Surveys.

Note: "isd" is insufficient data. This table includes total cash compensation for all records, with or without work RVU data.

TABLE 6

Trends in Median Total Cash Compensation (TCC), Cohort of Physicians in both 2014 and 2018 Surveys

	Organizations	Physicians	2013 Median TCC	2017 Median TCC	Percent Change
All specialties	88	11,272	270,276	321,558	15.9%
Primary care specialties	78	4,148	224,453	265,359	15.4%
Family medicine	56	1,679	222,908	262,222	15.0%
Internal medicine	60	1,428	224,797	272,883	17.6%
Pediatrics – general	60	1,041	226,206	262,819	13.9%
Nonsurgical, nonprocedural specialties	72	2,796	254,748	303,987	16.2%
Emergency medicine	32	577	295,471	365,310	19.1%
Endocrinology and metabolism	38	166	237,042	274,690	13.7%
Hospitalist	53	860	251,003	296,248	15.3%
Nephrology Only	0	0	isd	isd	isd
Neurology	48	348	269,250	321,344	16.2%
Physical medicine and rehabilitation	34	156	258,376	307,099	15.9%
Psychiatry	34	240	214,250	254,165	15.7%
Rheumatology	41	139	228,136	272,565	16.3%
Other internal medicine/pediatrics	54	310	255,528	293,163	12.8%
Nonsurgical, procedural specialties	64	1,316	377,250	459,750	17.9%
Cardiology	40	273	408,296	483,923	15.6%
Dermatology	38	154	414,500	506,701	18.2%
Gastroenterology	49	365	477,750	583,000	18.1%
Oncology – hematology and oncology	38	397	316,301	399,613	20.8%
Pulmonology	29	127	297,975	335,005	11.1%
Surgical	74	2,221	394,810	466,770	15.4%
Obstetrics/gynecology	55	642	310,717	357,355	13.1%
Ophthalmology	40	149	375,319	455,600	17.6%
Orthopedic surgery	38	225	569,311	630,947	9.8%
Otolaryngology	39	169	380,602	470,774	19.2%
General surgery	57	396	387,482	447,929	13.5%
Cardiovascular and cardiothoracic surgery	28	85	618,711	731,169	15.4%
Neurological surgery	30	118	595,718	747,282	20.3%
Urology	39	162	428,750	498,645	14.0%
Other surgical specialties	52	275	471,450	544,889	13.5%
Radiology	35	517	446,908	494,199	9.6%
Radiology	35	517	446,908	494,199	9.6%
Pathology	28	274	302,525	362,958	16.7%
Pathology	28	274	302,525	362,958	16.7%

Source: SullivanCotter's 2014 and 2018 Physician Compensation and Productivity Surveys.

Note: The 2014 and 2018 surveys represent physician compensation in 2013 and 2017, respectively. "isd" is insufficient data.

TABLE 7

Percent Change in Median Total Cash Compensation, Two-Year Cohorts of Physicians

	2013-2014 Cohort	2014-2015 Cohort	2015-2016 Cohort	2016-2017 Cohort
All specialties	4.6%	4.9%	6.2%	3.9%
Primary care specialties	4.9%	5.8%	5.6%	4.1%
Family medicine	5.0%	6.1%	6.3%	3.6%
Internal medicine	5.4%	6.0%	5.3%	5.1%
Pediatrics – general	4.9%	4.7%	4.3%	3.4%
Nonsurgical, nonprocedural specialties	3.7%	5.4%	7.0%	4.6%
Emergency medicine	3.9%	9.4%	6.2%	7.0%
Endocrinology and metabolism	2.9%	4.1%	3.6%	4.8%
Hospitalist	3.6%	3.1%	9.0%	4.4%
Nephrology Only	isd	9.7%	9.2%	1.8%
Neurology	2.9%	5.3%	5.2%	5.1%
Physical medicine and rehabilitation	1.4%	7.1%	6.8%	4.3%
Psychiatry	5.3%	4.0%	2.8%	4.8%
Rheumatology	0.6%	6.5%	4.3%	4.8%
Other internal medicine/pediatrics	2.2%	4.8%	5.2%	4.8%
Nonsurgical, procedural specialties	5.1%	4.9%	6.5%	5.6%
Cardiology	1.2%	5.6%	5.3%	7.8%
Dermatology	3.1%	3.1%	4.3%	5.4%
Gastroenterology	3.9%	6.6%	4.4%	3.1%
Oncology – hematology and oncology	3.8%	5.6%	9.3%	4.6%
Pulmonology	5.6%	3.9%	10.1%	7.6%
Surgical	4.5%	3.6%	6.1%	4.3%
Obstetrics/gynecology	4.1%	3.9%	5.2%	3.9%
Ophthalmology	5.2%	4.3%	6.3%	6.1%
Orthopedic surgery	4.6%	1.3%	5.6%	3.2%
Otolaryngology	5.0%	1.9%	7.0%	6.4%
General surgery	3.7%	3.9%	5.6%	3.3%
Cardiovascular and cardiothoracic surgery	2.0%	6.0%	1.3%	8.9%
Neurological surgery	6.1%	4.6%	4.4%	5.4%
Urology	1.4%	2.7%	5.6%	5.6%
Other surgical specialties	4.0%	4.6%	7.1%	4.9%
Radiology	-0.3%	4.9%	3.3%	3.0%
Radiology	-0.3%	4.9%	3.3%	3.0%
Pathology	3.3%	0.7%	7.3%	1.6%
Pathology	3.3%	0.7%	7.3%	1.6%

Source: SullivanCotter's 2014 -2018 Physician Compensation and Productivity Surveys

Note: "isd" is insufficient data.

TABLE 8

Comparison of Actual versus Standardized Physician Total Cash Compensation by Specialty, 2017

	Organizations	Physicians	Median Actual TCC	Median Standardized TCC	Percent Difference
All specialties	295	44,605	\$301,051	\$270,164	-10.3%
Primary care specialties	263	16,565	\$241,687	\$247,525	2.4%
Family medicine	222	7,403	\$238,343	\$247,641	3.9%
Internal medicine	216	5,431	\$249,796	\$237,871	-4.8%
Pediatrics – general	183	3,731	\$236,855	\$261,901	10.6%
Nonsurgical, nonprocedural specialties	242	12,215	\$286,448	\$233,256	-18.6%
Emergency medicine	90	2,138	\$351,022	\$340,445	-3.0%
Endocrinology and metabolism	146	654	\$241,406	\$226,447	-6.2%
Hospitalist	178	4,897	\$284,234	\$217,929	-23.3%
Nephrology Only	57	269	\$288,665	\$311,061	7.8%
Neurology	168	1,303	\$282,408	\$226,802	-19.7%
Physical medicine and rehabilitation	116	468	\$265,750	\$230,673	-13.2%
Psychiatry	117	889	\$250,000	\$188,958	-24.4%
Rheumatology	122	446	\$252,039	\$225,431	-10.6%
Other internal medicine/pediatrics	158	1,151	\$289,683	\$232,238	-19.8%
Nonsurgical, procedural specialties	209	4,563	\$433,863	\$327,537	-24.5%
Cardiology	146	1,358	\$456,705	\$375,729	-17.7%
Dermatology	97	525	\$430,242	\$343,678	-20.1%
Gastroenterology	152	1,149	\$488,572	\$388,378	-20.5%
Oncology – hematology and oncology	129	1,075	\$394,264	\$215,006	-45.5%
Pulmonology	95	456	\$352,033	\$293,347	-16.7%
Surgical	251	8,909	\$424,171	\$362,125	-14.6%
Obstetrics/gynecology	187	2,575	\$333,838	\$334,766	0.3%
Ophthalmology	84	424	\$387,584	\$432,173	11.5%
Orthopedic surgery	138	921	\$569,911	\$410,197	-28.0%
Otolaryngology	129	611	\$429,143	\$341,364	-20.5%
General surgery	203	1,834	\$396,612	\$330,633	-16.6%
Cardiovascular and cardiothoracic surgery	107	339	\$710,000	\$503,083	-29.1%
Neurological surgery	116	515	\$747,613	\$478,027	-36.1%
Urology	146	708	\$444,512	\$377,194	-15.1%
Other surgical specialties	150	982	\$462,586	\$367,894	-20.5%
Radiology	85	1,678	\$481,335	\$453,886	-5.7%
Radiology	85	1,678	\$481,335	\$453,886	-5.7%
Pathology	60	675	\$317,692	\$307,674	-3.2%
Pathology	60	675	\$317,692	\$307,674	-3.2%

Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

Note: Total cash compensation was standardized using the median compensation per work RVU in 2017 among primary care physicians, \$51.22

TABLE 9

Standardized Physician Total Cash Compensation by Specialty, 2017

	Organizations	Physicians	Standardized Physician Total Cash Compensation					Comparison Ratio	Actual TCC Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation		
All specialties	295	44,605	\$206,277	\$300,268	\$270,164	\$363,129	\$141,563	1.09	1.25
Primary care specialties	263	16,565	\$195,992	\$254,170	\$247,525	\$299,437	\$89,893	1.00	1.00
Family medicine	222	7,403	\$198,406	\$253,331	\$247,641	\$297,534	\$84,095	1.00	1.00
Internal medicine	216	5,431	\$185,826	\$244,354	\$237,871	\$287,023	\$91,647	0.96	1.05
Pediatrics – general	183	3,731	\$208,991	\$270,121	\$261,901	\$318,691	\$96,038	1.06	0.99
Nonsurgical, nonprocedural specialties	242	12,215	\$174,418	\$253,520	\$233,256	\$303,818	\$114,342	0.94	1.19
Emergency medicine	90	2,138	\$240,051	\$347,146	\$340,445	\$445,200	\$144,294	1.37	1.47
Endocrinology and metabolism	146	654	\$175,787	\$235,193	\$226,447	\$273,517	\$83,614	0.91	1.01
Hospitalist	178	4,897	\$164,796	\$225,385	\$217,929	\$271,761	\$88,200	0.88	1.19
Nephrology Only	57	269	\$231,013	\$327,032	\$311,061	\$413,102	\$124,138	1.26	1.21
Neurology	168	1,303	\$172,110	\$244,384	\$226,802	\$287,903	\$107,283	0.92	1.18
Physical medicine and rehabilitation	116	468	\$180,721	\$244,966	\$230,673	\$288,886	\$91,166	0.93	1.11
Psychiatry	117	889	\$136,981	\$207,814	\$188,958	\$259,532	\$94,038	0.76	1.05
Rheumatology	122	446	\$184,713	\$230,629	\$225,431	\$267,829	\$70,302	0.91	1.06
Other internal medicine/pediatrics	158	1,151	\$180,679	\$250,539	\$232,238	\$294,284	\$105,801	0.94	1.22
Nonsurgical, procedural specialties	209	4,563	\$230,644	\$347,935	\$327,537	\$433,135	\$155,560	1.32	1.80
Cardiology	146	1,358	\$288,392	\$394,354	\$375,729	\$482,704	\$153,971	1.52	1.92
Dermatology	97	525	\$266,721	\$368,312	\$343,678	\$434,375	\$155,203	1.39	1.81
Gastroenterology	152	1,149	\$305,726	\$401,978	\$388,378	\$480,930	\$150,015	1.57	2.05
Oncology – hematology and oncology	129	1,075	\$168,240	\$231,361	\$215,006	\$279,552	\$92,106	0.87	1.65
Pulmonology	95	456	\$214,319	\$324,885	\$293,347	\$416,162	\$142,437	1.18	1.48
Surgical	251	8,909	\$280,707	\$392,534	\$362,125	\$465,957	\$164,466	1.46	1.76
Obstetrics/gynecology	187	2,575	\$268,803	\$352,870	\$334,766	\$417,592	\$120,287	1.35	1.40
Ophthalmology	84	424	\$330,592	\$440,538	\$432,173	\$515,126	\$169,662	1.75	1.63
Orthopedic surgery	138	921	\$313,440	\$440,199	\$410,197	\$534,173	\$173,927	1.66	2.39
Otolaryngology	129	611	\$285,949	\$368,494	\$341,364	\$425,536	\$131,926	1.38	1.80

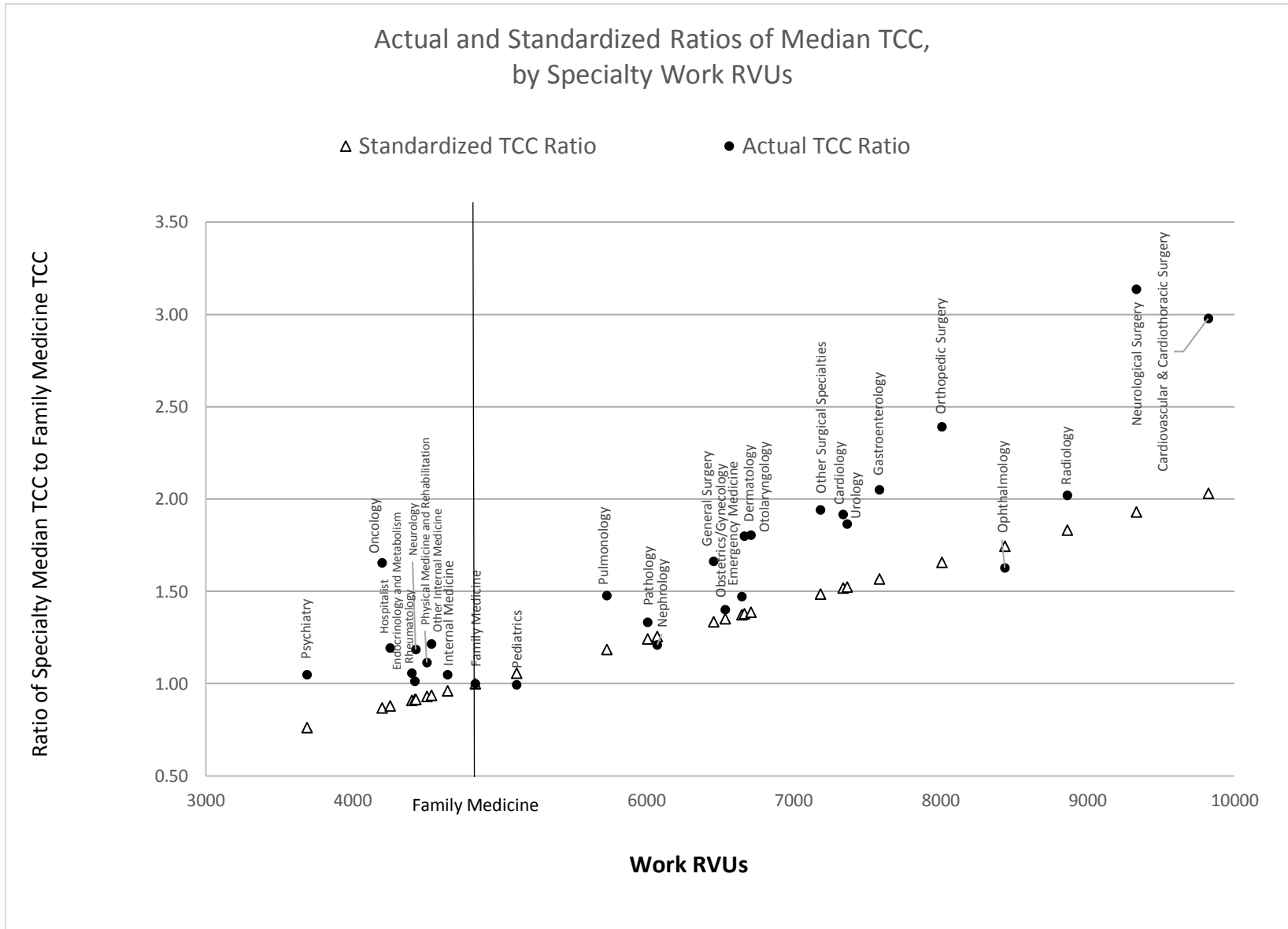
	Organizations	Physicians	Standardized Physician Total Cash Compensation					Comparison Ratio	Actual TCC Ratio
			25th percentile	Mean	Median	75 th Percentile	Standard Deviation		
General surgery	203	1,834	\$251,746	\$351,854	\$330,633	\$430,782	\$146,657	1.34	1.66
Cardiovascular and cardiothoracic surgery	107	339	\$367,955	\$550,341	\$503,083	\$698,634	\$237,282	2.03	2.98
Neurological surgery	116	515	\$346,452	\$524,121	\$478,027	\$654,322	\$235,412	1.93	3.14
Urology	146	708	\$296,679	\$394,333	\$377,194	\$473,449	\$136,038	1.52	1.87
Other surgical specialties	150	982	\$286,422	\$397,259	\$367,894	\$476,727	\$159,407	1.49	1.94
Radiology	85	1,678	\$345,889	\$466,884	\$453,886	\$564,240	\$164,104	1.83	1.99
Radiology	85	1,678	\$345,889	\$466,884	\$453,886	\$564,240	\$164,104	1.83	2.02
Pathology	60	675	\$232,744	\$323,293	\$307,674	\$396,392	\$113,504	1.24	1.31
Pathology	60	675	\$232,744	\$323,293	\$307,674	\$396,392	\$113,504	1.24	1.33

Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.

Note: Total cash compensation was standardized using the median compensation per work RVU in 2017 among primary care physicians, \$51.22.

FIGURE 2

Actual and Standardized Ratios of Median Total Cash Compensation, by Specialty Work RVUs



Source: SullivanCotter's 2018 Physician Compensation and Productivity Survey.