

The Lewin Group
3130 Fairview Park Drive, Suite 800
Falls Church, VA 22042
phone: (703) 269-5500
fax: (703) 269-5501
www.lewin.com

CMS – 1413-P Response to Public Comments, Part 1

As part of its ongoing CMS Practice Expense (PE) contract, The Lewin Group was asked to assist CMS in responding to comments to the 2010 Physician Payment Notice of Proposed Rule Making (NPRM). We have identified a set of common issues raised by the American College of Cardiology and other physician specialty related groups to the use of the American Medical Association (AMA) Physician Practice Information Survey (PPIS) contained in the NPRM. While we provide responses to these comments below, at the core is the issue of significant differences in the practice expense per hour values obtained from the PPIS, past supplemental survey (SS), and the Socioeconomic Monitoring Survey (SMS) efforts. Those specialties with PPIS PE estimates substantially lower than their previous PE estimates as used in the Medicare physician fee schedule (MPFS) have provided CMS with extensive comments in response to the NPRM that challenge the validity and reliability of the PPIS data.

This paper summarizes selected NPRM comments related to the PPIS and our responses, as well as our analytic results. We requested additional data from the AMA on the PPIS to help with our assessment of variations in PE/HR between the PPIS and the supplemental survey. We have received much of the requested data. However, it is the AMA's policy to restrict cell sizes ($n \geq 20$) when providing data thus some of our analysis was constrained by lack of adequate distributional detail. Lewin appreciates the AMA's spirit of cooperativeness in sharing additional data to assist with this effort.

We start with an overview of possible approaches to the winners and losers problem under PPIS PE implementation. Second, we review some broad themes in the comments critical of the PPIS. Third, we provide a summary of PPIS to SS PE blend results. Finally, we then address a series of conceptual views related to PPIS to SS comparisons. We use cardiology as our primary case example because more is known about cardiology PE estimates and benchmark data are readily available. We conclude with a brief discussion of the blend options.

Overview of Options

The Lewin Group has reviewed the comments from specialty groups that participated in the supplemental survey process. The specialties of Cardiology, Radiology, and Urology experienced a significant reduction in the PE/HR values. In considering these specialties, we discuss the following options that are available to CMS:

- (1) Use only PPIS indicators (survey data) in the final rule
- (2) Blend PPIS and SS PE indicators for all specialties with SS PE data
- (3) Blend PPIS and SS PE indicators only for those specialties where the strongest case can be made for moving away from the PPIS PE information and when the specialty requested a blend

We do not discuss transition strategies, as the rationale for transitions and blends would be much the same. The key difference being that blends could be permanent while a transition would move PE payments towards the PPIS PE information over time. Consequently, a transition strategy may not fully address the overarching concerns some specialties have regarding their PE/HR values from the PPIS, unless a process was established for specialty groups to submit additional data over time to “correct” PPIS data.

Common Themes Related to PPIS PE Comments

CMS provided insufficient information about the survey methodology and process

With publication of the proposed rule, CMS posted on its website the AMA’s PPIS Worksheets 1, 2 and 3 in addition to The Lewin Groups report to CMS, entitled “Physician Practice Information Survey (PPIS) Data Submitted for 2010: Non-MD/DO and Health Professionals Practice Information” (June 19, 2009). This report includes information on the PPIS survey process as well as the inclusion requirements for estimating practice expense per hour. In conjunction with this response to the NPRM public comments, the AMA has posted at www.ama-assn.org a report submitted to CMS “Computing Survey Response Rates: A Comparison of the Physician Practice Information (PPIS) and The Supplemental Surveys (SS)”. Lewin has also previously submitted a report to CMS on precision for the PPIS and has reiterated portions of that report in this response to public comments. Lastly, Lewin will submit to CMS a more detailed data processing methodology to address the public comments that pertain to data cleaning and processing.

The AMA PPIS should be subject to the same level of analysis as the supplemental surveys to assess accuracy and precision

The PPIS used a consistent survey methodology across all specialty and health care profession groups. This methodology is highly consistent with the prior SMS methodology as only small deviations were allowed to accommodate practice style differences across the various groups surveyed.

The PPIS was conducted in accordance with the known conventions governing PE collection activities. The data are, as a consequence, representative and reliable. One hundred completed surveys for each specialty was set as a goal for the PPIS. Of the more than 7000 surveys collected for 51 physician, non MD/DO specialties and health professions, for the majority of specialties, at least 100 surveys were collected.

In an attempt to be as flexible as possible, consistent with a goal of obtaining and using updated information collected for the same time period (2006) for as many provider groups as feasible, it is not a PPIS requirement that every specialty and health care profession group meet a pre-determined statistical precision level. While CMS required sampling error precision levels for the supplemental surveys, such a requirement would have been counter-productive for PPIS individual specialty level PE information.

The goal of using consistently collected and the most recent information available for as many specialties as possible outweighs the use of precision criteria that would not allow use to all of the PPIS data which as a whole is the best information currently available on provider practice expenses.

Data were not collected in a contemporaneous, consistent, and comprehensive way

We disagree with this comment. The PPIS used a consistent survey instrument and methodology across all specialty and health care profession groups. The PPIS sample was drawn from the AMA’s Physician

Master File, which is a listing of all member and non-member physicians in the United States. The survey was conducted in conjunction with national medical specialty societies and other health care professionals, representing 51 specialties and health professions in order to maximize the overall response rate¹. Respondents could submit information through multiple modalities; include telephone, fax, and web-based reporting. The survey was conducted by external contractors. In 2007 the PPIS project was contracted to the Gallup Organization. In late 2007 the AMA transitioned the survey effort to dmrkynetec, formally Doane Marketing Research, to complete the project. Dmrkynetec conducted the majority of the specialty level surveys that were implemented by CMS². Dmrkynetec used the same survey instruments as did the Gallup Organization in order that survey data collected by Gallup could be appropriately merged in the dmrkynetec data collection.

The number of survey responses was low. The survey did not meet the target goal for useable responses

Commenters argue that CMS should withdraw this proposal and take the time necessary to adequately examine the data submitted by AMA and solicit public input on the validity of the data and the most appropriate way to integrate this data into the complex physician fee schedule. The evidence is contrary to this recommendation. Many specialties met the n = 100 sample goal. Many specialties were significant at .15 precision. In addition, most specialties PE data estimates were consistent with previous (SMS, SS) survey findings. At most, the “outlier” specialties in terms of comparison to previously collected data should be individually addressed. A complete rejection of the PPIS PE/HR results is not supported.

A Comparison of PPIS and Final Rule 2009 PE Values and Blend Approaches by Specialty

Exhibit 1 below compares PPIS PE (2009) to the 2009 Final Rule (FR) PE values and shows how a blend of PPIS and prior SS PE information would mitigate winner and loser effects resulting from the sole use of PPIS PE values in the 2010 rulemaking.

¹ Reference “Computing Survey Response Rates: A Comparison of the Physician Practice Information (PPI) and the Supplemental Surveys”, AMA. Document to be posted at <http://www.ama-assn.org>

² Reference “Factors Influencing the Response Rates for the Physician Practice Information (PPI) and Supplemental Practice Expense (SPE) Surveys”; dmrkynetec, <http://www.dmrkynetec.com>

Exhibit 1: A Comparison of PPIS and SS Estimates

Specialty	PPIS PE/HR Value (2006)	Precision	PPIS Total PE/HR Value inflated to 2009 \$ (MEI)	Supplemental Survey PE/HR Value / adjusted for payables ^{1/} (2006) ^{2/}	Precision	Final Rule PE/HR Value (2009)	% Difference PPIS (2009) and Final Rule PE/HR (2009)
Cardiology	\$135.56	0.15	\$143.15	\$238.62 / \$217.76	0.05	\$235.05	-39
Radiology	\$134.84	0.22	\$142.39	\$179.07 / \$172.73	0.14	\$204.86	-30
Gastroenterology	\$128.34	0.16	\$135.53	\$146.75 / \$134.23	0.13	\$145.55	-7
Urology	\$133.14	0.13	\$140.60	\$177.96 / \$166.79	0.09	\$173.14	-19
Allergy and Immunology	\$241.08	0.12	\$254.58	\$254.84 / \$229.61	0.10	\$247.93	3
Dermatology	\$264.88	0.15	\$279.72	\$231.74 / \$217.96	0.10	\$225.55	24
Vascular Surgery	\$114.69	0.11	\$121.12	\$94.42 / \$92.38	0.07	\$95.73	27
Physical Therapy	\$68.47	0.18	\$72.30	\$54.35 / \$51.40	0.12	\$54.15	34
Optometry	\$114.78	0.10	\$121.21	\$90.39 / \$87.80	0.10	-	-
Radiation Oncology ^{3/}	\$254.21	0.18	\$268.45	\$234.99 / \$220.03	0.07	\$228.59	17

^{1/}2006 adjusted for payables reflect PE/HR after a percentage was deducted to account for clinical staff that bill independently and separately billable medical supplies.

^{2/}Supplemental surveys inflated to 2006 \$ MEI.

^{3/} Precision for freestanding radiation oncology for the PPIS was 0.15, precision for hospital based radiation oncology for the PPIS was 0.21.

Among those specialties that have a previous supplemental survey, the losers under PPIS PE results are cardiology, radiology, urology, and gastroenterology. The winners are allergy and immunology, radiation oncology, dermatology, vascular surgery, physical therapy, and optometry. The symmetry of these results is apparent with the greatest loss at -39 percent (cardiology) and the greatest gains at +34 percent (physical therapy). This symmetry could be useful in reducing the losses of the specialties that would otherwise lose under a straight PPIS PE approach.

These data raise a series of policy questions. The key question is: “Should PPIS data be used alone or in some form of a blend?” The first observation is that large disparities can occur between PPIS and SS PE values, despite the fact that in many instances both surveys meet the earlier CMS precision requirement of 0.15 (determined as $(1.645 \times SE)/\text{mean}$) This would suggest that each survey accurately measures PE, but for a different mix of physician practices. A careful review as to which survey results to use comes

down to which set of survey results, or some combination of survey results, are most representative of a given specialties' physician practices.

We explore this and other issues below for cardiology.

Cardiology as a Case Study

The total PE values for cardiology across the SMS, SS, and PPIS survey are \$93.64³, \$238.62, and \$135.50 (in 2006 \$). These descriptive data alone would suggest that the supplemental survey data are outlier observations. Otherwise a substantial increase and subsequently large decrease in cardiology PE would need to be explained.

The first hypothesis we explored was: "Could there have been a movement out of the office setting to the hospital setting between 2002 and 2006 for cardiology practices?" This could explain the abrupt decrease in PE between the SS and PPIS surveys. We made a series of data runs (see Appendix A) which explored this issue. The hypothesis is rejected. If anything, over this time period cardiology is moving to the office setting, not away from it.

Our second hypothesis was that counter to all other specialties, cardiology PE/HR are falling. Comments from the cardiology sub-specialties provided a series of arguments that PE/HR are increasing over time, as would generally be expected.

MedAxiom (a company which provides benchmark financial data to cardiology practices) and MGMA (a national membership organization representing the medical group practice profession) provided information on PE for CMS's consideration. These data are suggestive of two points: (1) cardiology total PE/HR are increasing over time, and (2) the absolute levels of cardiology PE/HR are closer to the SS than the PPIS PE/HR.

Communication with MedAxiom produced the information in Exhibit 2, below.

³ 1999 SMS PE HR inflated to MEI 2006 \$.

Exhibit 2: MedAxiom Cardiology PE Data

	2003	2004	2005	2006	2007	2008
Mean PE per CV Physician	\$567,672	\$602,463	\$616,923	\$656,974	\$641,236	\$655,791
Mean Malpractice Costs	\$17,897	\$19,447	\$20,376	\$22,967	\$19,845	\$17,921
PE Net of Malpractice	\$549,775	\$583,016	\$596,547	\$634,007	\$621,391	\$637,870
PE on an hourly basis (using 2571 hours per year)	\$213.84	\$226.77	\$232.03	\$246.60	\$241.69	\$248.10

These data show that malpractice adjusted MedAxiom PE/HR on an hourly basis rise generally between 2003 and 2008. This is consistent with the experience of other specialties as shown by comparing other specialties SMS PE values (FR 2009 PE dollar values) to the PPIS PE values. Of interest is the fact the adjusted MedAxiom total hourly PE for 2006 is \$246.60. This compares roughly to the SS total PE value unadjusted to 2006 of \$238.62 or the SS total PE value of \$217.76 when adjusted for employed labor (see Exhibit 1 above).

Commenters also provided CMS with 2006 MGMA PE data. These data are abstracted below.

Exhibit 3: MGMA PE Data for 2006

	Mean
Total Operation Costs	\$562,680
Plus NPP ^{1/} Costs	\$615,852
Hourly Adjusted (2571)	\$239.54

^{1/} non-physician provider

These data again are very close to the SS PE values for 2006. We calculate an adjust PE/HR to account for non-physician providers who can independently bill (20% of NPP cost based on PPIS estimates) which results in a PE/HR of \$235.40 a value that is still very close to the SS

Taken together these data would suggest that the PPIS data are representative of different type of practices than the SS, MedAxiom, and MGMA data. We explore this issue below.

The information below shows practice size by survey. The PPIS has smaller practices than does the SS. The AMA partially adjusted for this fact in their weighting process⁴.

Exhibit 4: SS vs. PPIS Breakdown of Survey Sample by Size

⁴ AMA Physician Master File weights were based on information available for all physicians from the AMA Master File, two weighting cells (solo or two physician practice; other practice type) were constructed for 40 of the 42 specialties included in the PPI survey. For nuclear medicine and osteopathic manipulative therapy, the two cells were combined into one, and the practice expense data for those specialties was not weighted within specialty.

# of Physicians	SS	PPIS
1-9 Cardiologists	27%	55%
10-19 Cardiologists	31%	13%
20-29 Cardiologists	16%	13%
30 or More Cardiologists	26%	18%

Thus, it could be that the PPIS is biased towards smaller practices. As noted below, the SS found lower costs by smaller practices. However, even the smaller practice size for the SS had a greater PE/HR value than the overall PPIS mean PE/HR for all practice sizes (\$139.34 (SS solo practices) vs. \$135.56 PPIS overall PE/HR mean). All other SS practice size means are even greater than the PPIS overall PE/HR mean.

These data also point to another set of conclusions. The 2006 PPIS mean PE/HR for cardiology at \$135.56 is much lower than the SS median value of \$216.41. Interestingly, the 25th percentile PE/HR from the SS for cardiology is \$153.43. That is, the 25th percentile for the SS PE value is higher than the overall PPIS PE/HR mean of \$135.56 for cardiology.

Exhibit 5: SS Unweighted Means by Number of Physicians – Cardiology^{1/}

	Number	Percent (Number)	Mean	25th Percentile	50th Percentile	75th Percentile
1 (solo)	32	8.23	\$ 139.34	\$ 52.21	\$ 89.54	\$ 140.15
2 to 4	28	7.2	\$ 183.16	\$ 104.67	\$ 168.12	\$ 215.52
5 to 9	44	11.31	\$ 293.88	\$ 160.86	\$ 250.74	\$ 411.34
10 to 49	233	59.9	\$ 263.28	\$ 158.79	\$ 234.95	\$ 331.40
50+	52	13.37	\$ 222.17	\$ 151.52	\$ 262.70	\$ 262.70
All	389	100	\$ 245.29	\$ 153.43	\$ 216.41	\$ 294.06

^{1/} 2002 Cardiology Supplemental Survey (SS) inflated to 2006 MEI \$.

These data would indicate that the SS and PPIS survey results are representative of different cardiology practice populations.

We have not been able to determine which survey is most representative as there are no gold standard comparisons. The benchmark data available to us suggest that the SS PE more closely approximate the cardiology practice populations than the PPIS PE at least as evidenced by other benchmarks. We suspect this could be the case with other specialties as well. For instance, urology argued this in their comments. But this is by no means an absolute conclusion as the cardiology benchmark survey data and the SS data could all be biased in the same direction (e.g. over representation of large practices with a high level of intensive technical component procedures).

Appendix A compares supplemental survey and PPIS cardiology, urology and radiology PE/HR data by percentile and practice size for indirect and direct expenses. These data show that the supplemental data are typically higher both by practice size and by percentile range. Cardiology and Urology (Exhibit 6a and Exhibit 6b) show very much larger PE/HR values for the larger practice sizes. The radiology supplemental data show higher values for each percentile range, but the small practice size reveals the largest discrepancy between the supplemental survey and the PPIS. As with cardiology and urology, the radiology PE/HR data are very much different across the supplemental survey and the PPIS.

Discussion

For at least some of the physician specialties with both a SS and a PPIS, it is clear that the two survey efforts are likely measuring widely disparate segments of the physician community they represent. The SS and PPIS PE data, given the test case of cardiology, appear to be measuring the PE/HR for different practice populations. This is especially true for the large practices where same sized practices are shown to have much lower PE/HR with the PPIS than the supplemental, or the MedAxiom, or the MGMA data. Hospital based practices, for instance, would not generate the same levels of PE/HR as office based practices. Attempts to resolve which survey is the most representative have proven inconclusive. But, at least in the case of cardiology, external benchmarks better match the SS PE data. This could mean that all of these surveys have the same, and almost identical, biases, given the purpose of MedAxiom and MGMA data collection efforts.

As noted in the introduction, three broad options of how to handle the “outlier” PPIS PE data (e.g. extreme winner and loser specialties) are available to CMS:

(1) Use PPIS data only

This has the advantage of being entirely consistent across all specialties and avoids any charge of favoritism. The purpose of the PPIS was to conduct a uniform PE survey across all specialties paid under the Medicare Fee Schedule. To a large extent this mission was accomplished. However, there are several outliers, in terms of comparing the PPIS information to past SMS and SS PE estimates. This raises concerns if can be shown that the PPIS efforts were in some cases biased or at least not consistent with other available benchmark data. Using the best data available, and using cardiology as a test case, we have not been able to show that PPIS is demonstrably less biased (or more biased) than the SMS or SS surveys.

This would indicate that, for those specialties where their PE estimates deviate measurably from past survey results, some sort of blend or transition might be appropriate.

(2) For all specialties with SS PE estimates, blend these results with PPIS PE estimates

Exhibit 1 above shows how this might work. It mitigates the extreme winners and losers resulting from the incorporation of PPIS PE results. That is, use of the PPIS PE/HR could cause unwarranted losses and gains unless a blend or transition strategy is employed. The case for this all inclusive approach is that the winners’ gains may not be justified. A comprehensive blending strategy is a balanced approach in that it is skeptical of either large winners or large losers under the PPIS. It departs from the PPIS most extensively, however, and is the most aggressive in redistributing payments across the specialties.

(3) Blend SS and PPIS PE estimates for only a few selected specialties

This would presumably only address extreme losses. A decision to use this course of action could be based on: 1) the percent and magnitude of losses for a given specialty; 2) relative sample sizes across the SS and PPIS surveys; and 3) a request by the specialty for a blend. This would cover the extreme specialty level losses as shown in Exhibit 1.

Under this approach, all physician groups “pay,” through budget neutrality, for loser compensation. Paying for loser compensation with reductions in winner gains as under option (2) might be more appropriate than just “taxing” all specialties for this effort.

Appendix A

Total PE/HR, Direct and Indirect PE/HR by Practice Size - SS and PPIS

(1) Cardiology - Total PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 to 4	60	15%	\$ 159.78	\$ 77.25	\$ 112.53	\$ 205.93
5+	329	85%	\$ 260.88	\$ 158.79	\$ 249.27	\$ 329.03
All	389	100%	\$ 245.29	\$ 153.43	\$ 216.41	\$ 294.06

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 to 4	22	40%	\$ 142.22	\$ 73.69	\$ 131.87	\$ 194.44
5+	33	60%	\$ 131.25	\$ 59.00	\$ 122.86	\$ 166.45
All	55	100%	\$ 135.56	\$ 70.80	\$ 122.86	\$ 194.44

(2) Cardiology - Indirect PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 to 4	60	15%	\$ 101.71	\$ 49.61	\$ 79.22	\$ 121.59
5+	329	85%	\$ 141.52	\$ 80.82	\$ 130.69	\$ 179.16
All	389	100%	\$ 135.37	\$ 72.17	\$ 123.45	\$ 174.98

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 to 4	22	40%	\$ 98.92	\$ 61.11	\$ 75.29	\$ 131.87
5+	33	60%	\$ 80.73	\$ 45.80	\$ 70.13	\$ 119.98
All	55	100%	\$ 88.04	\$ 31.48	\$ 69.45	\$ 114.63

(3) Cardiology - Direct PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 to 4	60	15%	\$ 58.08	\$ 19.51	\$ 31.96	\$ 75.43
5+	329	85%	\$ 119.36	\$ 75.49	\$ 118.58	\$ 141.18
All	389	100%	\$ 109.92	\$ 56.96	\$ 97.10	\$ 131.06

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 to 4	22	40%	\$ 42.86	\$ 4.58	\$ 29.41	\$ 57.86
5+	33	60%	\$ 50.51	\$ 8.15	\$ 44.87	\$ 80.92
All	55	100%	\$ 47.52	\$ 3.88	\$ 32.74	\$ 62.43

(1) Urology - Total PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	87	39%	\$ 159.25	\$ 86.45	\$ 125.53	\$ 189.63
2 to 4	80	35%	\$ 197.96	\$ 130.50	\$ 165.77	\$ 238.83
5+	59	26%	\$ 183.56	\$ 93.79	\$ 150.32	\$ 244.61
All	226	100%	\$ 179.30	\$ 105.94	\$ 147.06	\$ 229.48

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	25	31%	\$ 138.13	\$ 75.32	\$ 119.31	\$ 163.26
2 to 4	28	35%	\$ 151.88	\$ 95.68	\$ 145.40	\$ 195.33
5+	27	34%	\$ 113.74	\$ 40.99	\$ 105.83	\$ 153.98
All	80	100%	\$ 113.74	\$ 40.99	\$ 105.83	\$ 153.98

(2) Urology - Indirect PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	87	39%	\$ 114.31	\$ 58.89	\$ 87.91	\$ 128.38
2 to 4	80	35%	\$ 136.11	\$ 81.80	\$ 111.32	\$ 169.87
5+	59	26%	\$ 118.78	\$ 59.98	\$ 102.02	\$ 151.62
All	226	100%	\$ 123.19	\$ 64.60	\$ 97.59	\$ 158.14

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	25	31%	\$ 99.31	\$ 38.26	\$ 75.33	\$ 131.11
2 to 4	28	35%	\$ 116.46	\$ 67.75	\$ 95.13	\$ 149.44
5+	27	34%	\$ 78.58	\$ 32.63	\$ 69.27	\$ 126.60
All	80	100%	\$ 97.02	\$ 34.64	\$ 68.68	\$ 119.22

(3) Urology - Direct PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	87	39%	\$ 44.94	\$ 19.14	\$ 33.59	\$ 52.26
2 to 4	80	35%	\$ 61.85	\$ 34.74	\$ 52.81	\$ 69.28
5+	59	26%	\$ 64.78	\$ 27.27	\$ 66.04	\$ 88.24
All	226	100%	\$ 56.11	\$ 25.97	\$ 43.64	\$ 68.04

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	25	31%	\$ 38.81	\$ 19.18	\$ 30.22	\$ 56.44
2 to 4	28	35%	\$ 35.42	\$ 18.51	\$ 32.99	\$ 49.34
5+	27	34%	\$ 35.16	\$ 7.34	\$ 23.33	\$ 57.69
All	80	100%	\$ 36.13	\$ 3.06	\$ 22.10	\$ 49.26

(1) Radiology - Total PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	76	44%	\$ 232.14	\$ 60.70	\$ 112.66	\$ 252.31
10+	95	56%	\$ 178.87	\$ 52.39	\$ 94.23	\$ 192.94
All	171	100%	\$ 202.55	\$ 56.97	\$ 107.03	\$ 230.17

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	20	36%	\$ 81.93	\$ 18.34	\$ 64.88	\$ 109.18
10+	36	64%	\$ 166.89	\$ 46.22	\$ 114.45	\$ 237.53
All	56	100%	\$ 134.84	\$ 36.36	\$ 86.19	\$ 193.36

(2) Radiology - Indirect PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	76	44%	\$ 131.48	\$ 58.43	\$ 98.29	\$ 168.98
10+	95	56%	\$ 106.97	\$ 48.64	\$ 79.27	\$ 125.15
All	171	100%	\$ 117.86	\$ 50.22	\$ 81.51	\$ 148.28

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	20	36%	\$ 59.25	\$ 18.34	\$ 61.22	\$ 86.31
10+	36	64%	\$ 117.62	\$ 36.51	\$ 76.82	\$ 175.97
All	56	100%	\$ 95.60	\$ 5.71	\$ 41.52	\$ 106.29

(3) Radiology - Direct PE/HR

Supplemental Unweighted Means by Number of Physicians (2006 MEI)

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	76	44%	\$ 100.65	\$ -	\$ 8.18	\$ 131.30
10+	95	56%	\$ 71.90	\$ -	\$ 8.41	\$ 89.81
All	171	100%	\$ 84.69	\$ -	\$ 8.26	\$ 101.20

2006 PPIS Means by Number of Physicians

	N	PrctN	Mean	25th%	50th%	75th%
1 (solo)	20	36%	\$ 22.67	\$ -	\$ -	\$ 19.04
10+	36	64%	\$ 49.27	\$ -	\$ 18.29	\$ 48.61
All	56	100%	\$ 39.24	\$ -	\$ -	\$ 38.23