

Robert L. Houchens, Ph.D.

**Thomson Reuters**

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**MedPAC**

601 New Jersey Avenue, NW

Suite 9000

Washington, DC 20001

(202) 220-3700

Fax: (202) 220-3759

[www.medpac.gov](http://www.medpac.gov)

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# The Reliability of Physician Cost Profiling in Medicare

*A study conducted by staff from Thomson Reuters  
for the Medicare Payment Advisory Commission*

RESEARCH PAPER:

# THE RELIABILITY OF PHYSICIAN COST PROFILING IN MEDICARE

FINAL REPORT  
ROBERT L. HOUCHENS, PH.D.

AUGUST 27, 2010



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# INTRODUCTION

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This study was prompted by a recent RAND study published by the New England Journal of Medicine (NEJM) describing the reliability of physician cost profiles based on episode costs for a large sample of commercially-insured patients in Massachusetts during 2004-2005 (Adams, et al., 2010). The RAND study's main conclusion was that a basic method for calculating physician cost profiles resulted in physician scores that were too unreliable for accurately profiling most physician specialties. The purpose of our study was twofold. First, we wanted to determine whether the profiling method used in the RAND study would result in estimates of reliability for Medicare samples that were similar to those reported for the commercial sample. Second, we wanted to determine whether another profiling method might have better reliability.

The RAND study used 2004-2005 claims data from four large commercial insurers in Massachusetts. The researchers grouped claims into episodes using the ETG episode grouper software. They then attributed each episode to the physician who billed the highest percentage of evaluation and management costs (minimum 30 percent) to the episode. They calculated standardized costs for services (e.g., office visits, lab tests, and so on). They set the observed episode cost<sup>1</sup> equal to the sum of the standardized costs for all services in the episode. They classified each episode by its ETG, ERG severity, ETG subclass, and the physician's specialty. For each episode class they set the expected episode cost equal to the mean cost<sup>2</sup> for all episodes in that class. They scored each physician by the sum of observed episode costs divided by the sum of expected episode costs. Finally, they calculated the reliability of each physician's score and tabulated the results.

This study imitates the RAND study for a Medicare population. This study used four years of Medicare claims data spanning 2003-2006 from six metropolitan statistical areas (MSAs): Boston, MA; Greenville, SC; Miami, FL; Minneapolis, MN; Orange County, CA; and Phoenix, AZ. Consistent with the RAND study, we analyzed two year periods (2003-2004 and 2005-2006). We grouped claims into episodes using the MEG episode grouper software. We attributed episodes to physicians in a manner similar to the RAND study. We used standardized costs calculated in a slightly different way due

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<sup>1</sup> Episode costs were Winsorized at the 2.5 and 97.5 percentiles.

<sup>2</sup> The means were based on Winsorized costs.

to differences in payment practices between Medicare and the Massachusetts commercial payers. We calculated observed and expected episode costs using methods similar to those in the RAND study. We employed the RAND study methods to calculate physician scores and estimate their reliabilities. Finally, we compared the Medicare reliability distributions to those reported for the commercially insured reliability distributions in the RAND study.

Throughout this study, we refer to the RAND study method for calculating physician scores as the “basic” scoring method. We also tested the reliability of scores using an alternative “log(cost)” scoring method. While the basic score is the ratio of observed costs to expected costs, the log(cost) score is the difference between the mean observed log(cost) and the mean expected log(cost). The basic score takes only non-negative values and the RAND researchers capped extreme episode costs at the 2.5 percentile at the low end and at the 97.5 percentile at the high end. The log(cost) score takes on both negative and positive values and, since the logarithm transformation dampens the effects of extreme values, we did not cap extreme episode costs.

The main objective of the present study is to estimate the reliability of physician scores. Reliability is defined as the proportion of the total observed score variance that is attributable to true score variance among physicians. True scores are those that would be observed from very large samples of episodes. For each physician’s score, the total variance is the sum of 1) the variance among physicians’ true scores and, 2) the error variance for that particular physician’s observed score. Both the true score (between-physician) variance and the physician-specific error variance can be estimated from sample data, and these two estimates are used to estimate the reliability of each physician’s score, as explained in the Methods section.

Intuitively, reliability is high when the error variance is small relative to the true score variance, and it is low when the error variance is large relative to the true score variance. If every physician’s score was very precisely measured without error (e.g., it was based on a very large sample of episodes), then the observed scores would be 100 percent reliable because all of the variance among observed scores would reflect only the variance among true scores and physicians could be ranked perfectly. On the other hand, if all physicians had identical true scores (e.g., no practice variation), then no matter how precisely each physician’s score was measured—no matter how large the

sample—the observed scores would be zero percent reliable and it would be impossible to rank physicians.

Most physician scoring applications fall between these two extremes. The precision of each observed score varies across physicians because of variation among physicians in the types and numbers of episodes observed for each of them. Likewise, some practice variation exists leading to positive between-physician variances. This practice variation may be wider for some physician populations than it is for other physician populations, leading to greater or lesser variance in true scores.

This remainder of this paper describes the data and methods, the results, and our conclusions and recommendations.

## DATA AND METHODS

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### DATA

MedPAC provided the study data, composed of all medical claims during the calendar years 2003 through 2006 for Medicare beneficiaries residing in the six study MSAs: Boston, Greenville, Miami, Minneapolis, Orange County and Phoenix.

### STANDARDIZED COSTS

MedPAC standardized Medicare costs in this analysis according to a method established for physician profiling applications with episode groupers (Medicare Payment Advisory Commission, 2006). In this study, as in the RAND study, the total cost for an episode is the total of the standardized costs for the claims contained in that episode. Throughout this report, the term “cost” is shorthand for “standardized cost.”

## **BERENSON-EGGERS TYPE OF SERVICE (BETOS)**

CMS originally developed the BETOS<sup>3</sup> coding system primarily for analyzing the growth in Medicare expenditure. The coding system assigns each HCPCS code to a single BETOS code, which represents a readily understood clinical category. MedPAC added BETOS codes to professional and outpatient claims for this study.

BETOS codes are broadly classified into seven major categories:

1. Evaluation and Management
2. Procedures
3. Imaging
4. Tests
5. Durable Medical Equipment
6. Other
7. Exceptions/Unclassified

The category of Evaluation and Management (E&M) played a special role in the assignment of episodes to physicians, as explained below. In previous studies, we also used these as descriptive payment categories to “drill down” on total episode payments to better understand outpatient utilization patterns.

## **MEG – MEDICAL EPISODE GROUP™**

An episode of care describes a series of related health care services for the treatment of a given spell of illness. Episodes can be comprised of inpatient admissions, outpatient services, and prescription drugs. This study employed the Medical Episode Grouper (MEG), as described in our previous report (Houchens et al., 2009).

## **EXPECTED EPISODE PAYMENTS**

We derived risk-adjusted expected episode payments for all episodes. First, we measured *episode severity* by the stage of disease for each episode. Second, we measured *patient complexity* by the DCG relative risk scores (RRS) for the patient treated in each episode. The RRS is an estimate of the expected medical payments for

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<sup>3</sup> See [www.cms.hhs.gov/HCPCSReleaseCodeSets/20\\_BETOS.asp](http://www.cms.hhs.gov/HCPCSReleaseCodeSets/20_BETOS.asp) (last accessed 7/11/2010) for more information on BETOS categories.

a patient based on the patient's age, gender, and treated medical conditions over a specified period, usually one year (Ellis and Ash, 1995; Ash, et al., 2000).

For each MSA, physician specialty, and MEG, we constructed a table with rows for each integer stage of disease, and with up to five columns for each of five RRS categories corresponding to consecutive ranges of relative risk score values 0-1, 1-2, 2-3, 3-4, and 5 or more. For each MSA, specialty, MEG, and stage of disease we collapsed adjacent RRS categories if they did not have statistically different average episode costs.

Following the methodology in the RAND study, we then calculated an "expected" episode cost as the average Winsorized episode cost taken over all episodes within each table cell. We Winsorized costs at the 2.5 and 97.5 percentiles of the cost distribution. That is, we replaced all episode costs below the 2.5 percentile by the value of the 2.5 percentile and replaced all episode costs above the 97.5 percentile by the value of the 97.5 percentile. We also calculated the sample variance of these Winsorized costs for each table cell. If the sample variance did not exist or it was equal to zero, then we estimated the variance by the square of the expected cost for that cell (i.e., we assumed the coefficient of variation was equal to one).

To facilitate the calculation of an alternative physician score, explained below, we also calculated an "expected" logarithm of episode costs as the average of the logarithm of episode costs taken over all episodes within each table cell.  $\log(\text{costs})$  were not Winsorized. We also calculated the sample variance of the  $\log(\text{cost})$  in each cell. If the sample variance was missing or zero, then we estimated the variance of  $\log(\text{cost})$  to be one, which is consistent with assuming a coefficient of variation equal to one for the untransformed cost<sup>4</sup>.

Finally, we assigned these expected episode costs and variances to each episode based on the episode's MSA, physician specialty, MEG disease category, stage of disease, and the patient's RRS.

## **PHYSICIAN ATTRIBUTION**

Episodes of care methodologies present a challenge unique to medical claims-based case mix and risk adjustment methodologies. In contrast to other methodologies, episodes of care may include claims for more than one provider. Physician attribution

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<sup>4</sup> This variance calculation relied on the delta method.

strategies have been developed to link physicians to episodes in order to profile their relative cost efficiencies. In this study, the physician assigned responsibility was the one who billed the plurality and at least 30 percent of payments for the Evaluation and Management (E&M) claims included in the episode. The RAND study attributed the episode to the physician who billed the plurality of “professional” costs, subject to the 30 percent minimum. While there are some differences between the E&M costs we used and the professional costs that RAND used, we believe that the differences would seldom result in attributing episodes to different physicians.

A small percentage of episodes were not attributed to a physician. This resulted from episodes lacking E&M claims or from episodes for which all physicians failed to meet the 30 percent threshold.

## PHYSICIAN SCORES

For the  $i$ th physician we calculated two cost profile scores.

First, we calculated the “basic” score employed in the RAND study as follows:

$$Y_i = \frac{\text{Total Observed Episode Cost}}{\text{Total Expected Episode Cost}} = \frac{\sum_{j=1}^{n_i} O_j}{\sum_{j=1}^{n_i} E_j}$$

where  $O_j$  and  $E_j$  were the observed and expected costs, respectively, for the  $j$ th of  $n_i$  episodes attributed to the  $i$ th physician. Consequently, a score equal to one means that the physician’s sum of episode costs was equal to the sum of expected episode costs, a score less than one indicated lower than expected costs, and score greater than one indicated higher than expected costs.

Second, we calculated an alternative physician score by replacing the episode cost with the logarithm of cost and computing the difference between the observed and expected  $\log(\text{cost})$ :

$$D_i = \frac{\text{Mean Observed Log(Cost)} - \text{Mean Expected Log(Cost)}}{n_i} = \frac{\sum_{j=1}^{n_i} \log(O_j)}{n_i} - \frac{\sum_{j=1}^{n_i} L_j}{n_i}$$

Where  $L_j$  was the mean logarithm of episode costs, described earlier, corresponding to the  $j$ th of  $n_i$  episodes attributed to the  $i$ th physician. This difference score has some desirable properties. First, the logarithmic transformation reduces the influence of high cost episodes. Therefore, we did not Winsorize  $\log(\text{costs})$ . Second, the normal distributions underlying the hierarchical models can produce negative values, consistent

with the log(cost) difference score but not consistent with the basic ratio score, which can take on only positive values. That said, the basic-score HLM regressions usually produce parameter estimates that would seldom result in negative scores.

This log(cost) scoring method is just one example of many possible alternatives. For example, various weighted averages of the individual episode ratios are possible:

$$X_i = \sum_{j=1}^{n_i} w_j \frac{O_j}{E_j}$$

The basic score has weights equal to the proportion of total episode costs,  $w_j = E_j / \sum E_j$ . The simple average of the episode ratios has a constant weight for the  $i$ th physician,  $w_j = 1 / n_i$ . The precision-weighted average would have weights proportional to the inverse of the variance,  $w_j \propto 1 / \text{variance}(O_j / E_j)$ .

## SCORE RELIABILITY

Using the methodology explained in the RAND study, we estimated the reliability of each physician's score as the estimated proportion of total variance that was true score variance among physicians (Snijders and Bosker, 1999; Adams, 2009). Therefore, we estimated the reliability of the score for physician  $i$  as follows:

$$R_i = \frac{\hat{\sigma}_s^2}{\hat{\sigma}_s^2 + \hat{\sigma}_i^2}$$

$\hat{\sigma}_s^2$  = estimated variance between true physician scores for specialty  $s$ .

$\hat{\sigma}_i^2$  = estimated variance of the observed score for physician  $i$ .

From the above equation, a reliability of zero implies that all of the variance among estimated physician scores is due to measurement error. At the other extreme, a reliability of one implies that all of the variance among estimated physician scores is attributable to real differences in physician performance (Adams, 2009).

This is equivalent to the *squared* correlation between the true and observed physician scores. In other words, if we knew physicians' true scores, and we regressed their estimated scores on their true scores, the R-squared value—the variance explained by the regression—would equal the reliability. A typical minimum threshold for reliability is 70 percent. In this case, the true scores would explain about 70 percent of the variance

in estimated scores, and the correlation between the estimated score and the true score would be about 84 percent ( $= .70^{1/2}$ ).

For the basic score,  $Y_i$ , we estimated each physician's observed score variance using the methodology explained in the RAND study:

$$\hat{\sigma}_i^2 = \frac{\sum_{j=1}^{n_i} S_j^2}{\left(\sum_{j=1}^{n_i} E_j\right)^2} = \frac{\text{Sum of episode sample variances}}{\text{Squared sum of expected episode costs}}$$

The episode variances were those we merged onto the episodes along with the expected costs, as described in the section on expected episode payments.

For the alternative log(cost) score,  $D_i$ , we estimated each physician's observed score variance by:

$$\hat{\sigma}_i^2 = \frac{\sum_{j=1}^{n_i} v_j}{n_i^2} = \frac{\text{Sum of episode log(cost) sample variances}}{\text{Squared number of episodes}}$$

The episode log(cost) variances were those we merged onto the episodes along with the expected log(cost), as described in the section on expected episode payments.

For both scores, we estimated the between-physician variance using the methodology in the RAND study. We obtained the between-physician variance from a hierarchical “variance known” regression model using SAS PROC MIXED, run separately for each MSA and physician specialty. The dependent variable was the physician score and the predictor was an intercept with random physician effects. Consistent with the “variance known” feature of this regression, we weighted each observation by the inverse of the score's estimated variance, given in the above equations.

We report the number and percentage of physicians having scores with an estimated reliability exceeding minimum reliability thresholds of 70, 80, and 90 percent. In addition, we report the percentage of episodes and costs attributed to physicians exceeding those reliability thresholds. Importantly, physicians with reliable scores tend to be those with the most episodes. Consequently, the percentage of episodes and costs attributed to physicians with reliable scores will usually far exceed the percentage of physicians with reliable scores.

## SHRINKAGE ESTIMATES

The hierarchical model used here and in the RAND study to estimate the between-

physician variance will also produce shrinkage estimates of each physician's score<sup>5</sup>. We can think of these shrinkage estimates as reliability-adjusted estimates of each physician's score.

The amount of shrinkage depends on the reliability of each physician's observed score. If  $M$  is the score for an average physician then the shrinkage estimate for the  $i$ th physician is equal to:

$$\text{Shrunken Score} = S_i = R_i * Y_i + [1 - R_i] * M$$

Therefore, the shrunken score is a weighted average of the score for an average physician,  $M$ , and the  $i$ th physician's observed score,  $Y_i$ . More weight is put on the observed score when the reliability is high (when  $R_i$  is near 1).

The definition of the reliability of the shrinkage estimate is the same as that for the observed scores, which is *the squared correlation between the true value and the predicted value* (Adams et al., 2010). In some areas of research, the reliability of shrinkage estimates is called the *precision* or the *coefficient of determination* (Laloe, 1993), described by the formula:

$$\text{Reliability} = 1 - (\text{prediction error variance} / \text{between-physician variance})$$

In our application, the prediction error variance corresponds to the variance of the shrinkage estimate.

In our analyses, the reliability of the shrinkage estimate is virtually the same as the reliability of the original (unshrunken) score. Therefore, in this application, shrinkage estimates do not provide scores that are more reliable—they do not necessarily allow us to do a better job of ranking physicians—they just give us estimates that tend to be more reasonable for individual physician scores. Shrinkage estimates represent one way of dealing with unreliable physician scores. Rather than omit physicians with unreliable scores, the unreliable scores would be “shrunken” toward the score for an average physician. Consequently, in a pay for performance application, the system would neither reward nor penalize physicians with unreliable scores.

## **ANALYTIC SUBSET**

To maintain comparability with the RAND study, we analyzed only MSAs and specialties containing at least 75 physicians with at least one attributed episode. Since the RAND

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<sup>5</sup> The NEJM article did not mention the use of shrinkage estimates.

study pooled data over two years, we also pooled the data into two-year periods: 2003-2004 and 2005-2006. Tables 1 and 2 display, for 2003-2004 and 2005-2006, respectively, the number of physicians and episodes for each MSA and specialty. Green table cells represent MSAs and specialties with at least 75 physicians, which were included in our analyses. Red table cells represent MSAs and specialties with fewer than 75 physicians, which were not included in our analyses. The RAND study was based on Massachusetts data. Fortunately, for our Massachusetts MSA, Boston, we were able to include all specialties except peripheral vascular disease and vascular surgery.

Tables 3 and 4 show, for 2003-2004 and 2005-2006, respectively, the mean and median number of episodes for physicians in each MSA and specialty. It is important to bear in mind that these statistics reflect the number of episodes counted over a period of two years. Single-year statistics would be about half those shown for the two-year statistics. We omitted statistics for MSAs and specialties with fewer than 75 physicians.

Tables 3 and 4 also show the mean number of episodes reported in the RAND study. The RAND sample sizes exceeded the Boston Medicare samples sizes for only four specialties: family/general practice, obstetrics/gynecology, oral/maxillofacial surgery, and dermatology (2005-2006 only).

**TABLE 1: Number of Physicians and Episodes, 2003-2004**

Specialty Group	MSA											
	Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes
Allergy/immunology	85	18,714	19	4,483	27	4,026	45	5,681	33	6,786	33	7,318
Cardiology	673	330,397	66	62,378	232	173,138	217	53,843	193	129,817	267	155,245
Cardiothoracic surgery	111	11,136	18	2,914	32	3,981	44	2,757	38	3,686	46	5,683
Chiropractic	813	43,097	196	17,325	164	8,393	924	42,598	695	24,936	868	46,602
Dermatology	335	249,664	33	80,284	122	82,483	105	76,188	164	137,891	124	178,647
Emergency medicine	664	130,878	112	38,767	189	24,895	322	44,443	333	38,963	363	62,768
Endocrinology	160	38,312	9	4,377	44	23,637	40	8,670	34	20,267	35	14,674
Family/General practice	1,075	352,087	419	414,105	917	376,547	1,574	573,854	878	286,646	989	414,040
Gastroenterology	353	159,674	35	37,937	93	55,308	83	28,149	104	65,639	144	64,902
General surgery	562	112,822	110	55,262	207	43,130	211	37,394	165	27,385	222	37,180
Hematology/oncology	441	79,176	34	22,155	101	18,659	131	19,967	103	29,791	113	29,173
Infectious disease	174	28,262	7	692	40	3,540	41	3,421	30	4,498	28	2,295
Internal medicine	3,571	1,486,179	226	300,080	840	305,372	951	438,789	800	443,808	990	472,025
Nephrology	153	33,221	25	10,077	34	6,054	66	8,620	43	11,677	67	14,840
Neurology	476	80,184	40	26,707	119	36,689	147	26,667	119	25,498	133	35,451
Neurosurgery	106	14,488	13	5,044	44	4,304	38	3,678	34	2,924	52	5,978
Obstetrics/gynecology	819	96,661	135	23,057	252	34,954	347	22,394	281	38,568	355	35,691
Ophthalmology	546	504,271	60	120,207	198	170,413	194	185,824	199	175,516	174	212,245
Oral/Maxillofacial surgery	144	4,303	18	353	34	828	84	1,936	27	786	40	1,281
Orthopedic surgery	590	174,735	89	51,655	169	57,728	266	67,081	242	63,196	267	79,126
Otolaryngology	209	109,379	31	25,491	71	39,435	103	32,514	107	44,250	90	36,038

**TABLE 1: Number of Physicians and Episodes, 2003-2004**

Specialty Group	MSA											
	Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes
Peripheral vascular disease	0	.	0	.	7	2,761	4	213	.	.	0	.
Physical medicine and rehabilitation	135	17,907	19	8,248	37	7,452	75	6,596	44	8,181	61	10,098
Plastic and reconstructive surgery	126	22,436	16	2,451	60	5,691	49	3,545	67	3,958	71	5,906
Podiatry	352	440,138	28	74,831	187	290,579	84	48,200	177	138,041	157	152,448
Psychiatry	997	30,964	89	5,171	203	16,751	252	11,234	107	7,411	164	5,210
Pulmonary disease	264	74,707	31	26,104	93	39,251	87	14,654	85	46,064	108	48,218
Rheumatology	152	59,579	12	17,389	30	39,209	40	15,215	29	20,658	36	25,822
Urology	222	135,126	44	48,593	101	56,447	82	45,199	87	48,335	90	67,953
Vascular surgery	65	23,639	10	7,809	19	5,180	11	3,177	23	5,194	32	7,893

**TABLE 2: Number of Physicians and Episodes, 2005-2006**

Specialty Group	MSA											
	Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes
Allergy/immunology	79	16,329	17	3,754	30	3,227	41	5,014	38	6,243	32	5,809
Cardiology	674	286,749	64	57,821	224	128,417	218	45,996	199	115,621	299	146,029
Cardiothoracic surgery	109	9,795	12	1,928	29	3,630	41	2,275	35	3,439	47	4,832
Chiropractic	817	36,666	197	14,712	149	6,365	962	34,017	659	21,953	859	38,500
Dermatology	345	242,383	33	80,325	135	72,309	114	73,844	170	140,501	143	177,468
Emergency medicine	695	126,519	115	38,978	231	24,212	350	42,363	334	36,259	418	51,732
Endocrinology	169	37,569	11	4,381	44	19,312	42	7,393	36	18,290	39	14,220
Family/General practice	1,073	318,140	423	338,248	905	346,908	1,592	439,223	833	243,150	1,011	365,520
Gastroenterology	376	146,548	35	34,542	94	44,140	92	24,412	103	57,661	153	59,112
General surgery	542	95,764	108	42,160	199	30,766	227	30,742	162	23,060	249	33,189
Hematology/oncology	451	76,287	32	18,839	107	16,661	133	17,765	107	28,270	126	29,254
Infectious disease	187	22,246	8	771	42	3,289	45	3,547	30	3,769	30	1,731
Internal medicine	3,764	1,310,389	242	248,481	815	253,702	967	326,218	839	390,062	1,075	406,727
Nephrology	173	32,559	28	9,986	34	5,415	66	7,019	44	11,348	76	16,167
Neurology	487	75,503	34	23,843	116	32,183	153	23,511	120	23,867	154	33,483
Neurosurgery	101	13,319	12	4,605	43	3,631	41	3,219	35	2,728	53	4,889
Obstetrics/gynecology	802	85,476	145	18,866	264	27,970	362	17,986	282	34,824	354	30,073
Ophthalmology	551	470,542	62	112,488	216	148,786	199	164,040	202	164,416	191	196,751
Oral/Maxillofacial surgery	148	4,261	14	246	28	799	83	1,487	24	630	27	1,250
Orthopedic surgery	600	164,262	87	41,966	164	47,201	270	60,764	230	58,083	282	72,151

**TABLE 2: Number of Physicians and Episodes, 2005-2006**

Specialty Group	MSA											
	Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes	MDs	Episodes
Otolaryngology	217	102,059	32	22,025	63	34,207	100	27,311	101	40,491	91	31,760
Peripheral vascular disease	0	.	0	.	4	1,207	4	191	.	.	0	.
Physical medicine and rehabilitation	143	19,466	20	8,144	36	8,708	72	6,499	40	8,672	69	11,337
Plastic and reconstructive surgery	128	18,576	16	1,958	57	4,267	46	2,670	64	3,571	60	4,126
Podiatry	341	420,354	31	69,210	176	236,351	93	45,592	173	123,804	171	138,961
Psychiatry	888	25,650	87	5,159	177	14,753	248	8,055	115	5,997	169	4,055
Pulmonary disease	273	64,973	33	24,363	92	32,430	87	12,928	87	43,815	118	45,930
Rheumatology	162	53,890	15	15,430	31	28,826	40	13,550	31	19,325	36	23,700
Urology	222	133,778	40	42,925	90	49,228	89	40,489	86	46,704	101	66,522
Vascular surgery	71	24,327	9	6,740	21	5,148	12	2,951	20	5,161	35	7,120

**TABLE 3: Mean and Median Episodes per Physician, 2003-2004**

Specialty Group	RAND	MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	
Allergy/immunology	192	127	220	*	*	*	*	*	*	*	*	*	*
Cardiology	104	178	491	*	*	562	746	172	248	537	673	410	581
Cardiothoracic surgery	24	88	100	*	*	*	*	*	*	*	*	*	*
Chiropractic	-	32	53	49	88	22	51	29	46	21	36	29	54
Dermatology	732	442	745	*	*	422	676	579	726	627	841	1,011	1,441
Emergency medicine	94	175	197	330	346	83	132	139	138	102	117	130	173
Endocrinology	107	100	239	*	*	*	*	*	*	*	*	*	*
Family/General practice	383	104	328	759	988	183	411	207	365	179	326	224	419
Gastroenterology	264	306	452	*	*	465	595	365	339	539	631	358	451
General surgery	114	112	201	448	502	101	208	132	177	78	166	81	167
Hematology/oncology	60	52	180	*	*	102	185	63	152	84	289	134	258
Infectious disease	109	27	162	*	*	*	*	*	*	*	*	*	*
Internal medicine	339	165	416	1,126	1,328	162	364	239	461	283	555	139	477
Nephrology	73	81	217	*	*	*	*	*	*	*	*	*	*
Neurology	78	89	168	*	*	190	308	154	181	156	214	185	267
Neurosurgery	41	106	137	*	*	*	*	*	*	*	*	*	*
Obstetrics/gynecology	325	60	118	111	171	59	139	45	65	80	137	39	101
Ophthalmology	311	447	924	*	*	505	861	768	958	626	882	1,044	1,220
Oral/Maxillofacial surgery	55	21	30	*	*	*	*	14	23	*	*	*	*

**TABLE 3: Mean and Median Episodes per Physician, 2003-2004**

Specialty Group	RAND	MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	
Orthopedic surgery	123	245	296	521	580	195	342	225	252	162	261	232	296
Otolaryngology	266	427	523	*	*	*	*	316	316	286	414	325	400
Physical medicine and rehabilitation	50	76	133	*	*	*	*	49	88	*	*	*	*
Plastic and reconstructive surgery	126	83	178	*	*	*	*	*	*	*	*	*	*
Podiatry	-	892	1,250	*	*	708	1,554	438	574	413	780	684	971
Psychiatry	14	6	31	31	58	20	83	18	45	23	69	6	32
Pulmonary disease	125	84	283	*	*	340	422	116	168	410	542	325	446
Rheumatology	195	147	392	*	*	*	*	*	*	*	*	*	*
Urology	230	575	609	*	*	372	559	467	551	459	556	622	755

\* Fewer than 75 physicians.

**TABLE 4: Mean and Median Episodes per Physician, 2005-2006**

Specialty Group	RAND	MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	
Allergy/immunology	192	143	207	*	*	*	*	*	*	*	*	*	*
Cardiology	104	188	425	*	*	429	573	161	211	511	581	344	488
Cardiothoracic surgery	24	81	90	*	*	*	*	*	*	*	*	*	*
Chiropractic	-	27	45	48	75	23	43	22	35	20	33	25	45
Dermatology	732	389	703	*	*	246	536	503	648	601	826	804	1,241
Emergency medicine	94	162	182	337	339	69	105	120	121	88	109	91	124
Endocrinology	107	74	222	*	*	*	*	*	*	*	*	*	*
Family/General practice	383	125	296	636	800	199	383	167	276	163	292	196	362
Gastroenterology	264	250	390	*	*	362	470	282	265	480	560	295	386
General surgery	114	106	177	334	390	83	155	91	135	62	142	59	133
Hematology/oncology	60	60	169	*	*	102	156	78	134	103	264	125	232
Infectious disease	109	21	119	*	*	*	*	*	*	*	*	*	*
Internal medicine	339	129	348	779	1,027	154	311	185	337	222	465	104	378
Nephrology	73	78	188	*	*	*	*	*	*	*	*	200	213
Neurology	78	78	155	*	*	167	277	119	154	152	199	139	217
Neurosurgery	41	107	132	*	*	*	*	*	*	*	*	*	*
Obstetrics/gynecology	325	52	107	88	130	41	106	35	50	74	123	31	85
Ophthalmology	311	407	854	*	*	409	689	702	824	529	814	835	1,030
Oral/Maxillofacial surgery	55	21	29	*	*	*	*	11	18	*	*	*	*

**TABLE 4: Mean and Median Episodes per Physician, 2005-2006**

Specialty Group	RAND	MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	
Orthopedic surgery	123	208	274	437	482	186	288	207	225	167	253	201	256
Otolaryngology	266	329	470	*	*	*	*	248	273	309	401	266	349
Physical medicine and rehabilitation	50	83	136	*	*	*	*	*	*	*	*	*	*
Plastic and reconstructive surgery	126	56	145	*	*	*	*	*	*	*	*	*	*
Podiatry	-	930	1,233	*	*	730	1,343	407	490	467	716	547	813
Psychiatry	14	6	29	28	59	27	83	12	32	13	52	5	24
Pulmonary disease	125	65	238	*	*	265	353	110	149	366	504	267	389
Rheumatology	195	103	333	*	*	*	*	*	*	*	*	*	*
Urology	230	555	603	*	*	371	547	398	455	471	543	505	659

\* Fewer than 75 physicians.

## COMPARISONS TO THE RAND STUDY METHODOLOGY

We followed the RAND methodology reported in the NEJM as closely as possible. However, our results will differ from the RAND results for a number of reasons:

- Medicare population vs. Commercial population – Medicare patients tend to be older and in poorer health compared with commercially insured patients. Program benefits also differ between Medicare and commercial insurance policies.
- Boston MSA vs. Massachusetts – Boston is the closest geographic unit in our study compared with the RAND study. Practice styles and patient needs may differ between Boston and other areas of Massachusetts. We also report the results for five other MSAs outside of Massachusetts.
- Study periods 2003-2004 and 2005-2006 vs. 2004-2005 – Each of the periods in our study overlap the RAND study by only one year.
- Physician specialty taken from Medicare claims vs. taken from a master physician database – Our study used the specialty coded on the majority of claims for each physician. The RAND study used the specialty coded on the Massachusetts Health Quality Partners physician database.
- MEGs vs. ETGs – Our study employed Thomson Reuter’s Medical Episodes Grouper and DCG Relative Risk Scores while RAND’s study used ETGs to create episodes and measure patient severity.
- Attribution: E&M costs vs. professional costs – Our study attributed episodes to the physician with the most E&M costs (at least 30 %) while the RAND study attributed episodes to the physician with the most “professional” costs (at least 30 %). The majority of items overlap between E&M costs and professional costs. However, there are a few items included in E&M costs that are not included in professional costs, and vice-versa.
- Standardized Medicare costs vs. standardized commercial costs. Costs in our study were standardized according to Medicare payment conventions while the RAND study costs were standardized separately for each commercial health plan according to their payment conventions.

It is difficult to gauge the incremental impact of these differences on reliability. However, we believe that the patient population differences will probably have the biggest impact. The sample of Medicare episodes is most likely larger than the sample of commercial episodes for many physicians. In addition, for a given set of physicians, practice variations might be greater for the treatment of Medicare patients than for commercial patients.

# RESULTS

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The first section reports and compares estimates of between-physician variances, the second section reports and compares the reliability distributions, and the third section discusses shrinkage estimates.

## BETWEEN-PHYSICIAN VARIANCES

We estimate reliability as the ratio of the between-physician variance to total variance. Therefore, the between-physician variance estimates are critically important. We report the between-physician variance estimates separately for the basic score and the log(cost) score. We compare the basic score variances directly between the Medicare estimates and the RAND study estimates. However, the log(cost) score represents a different metric. Consequently, we cannot directly compare basic score variances with log-cost variances.

### Between-physician variances for basic scores

Tables 5 and 6 display the variance estimates reported in the RAND study (column labeled RAND) along with estimates for each of the six MSAs in our study for 2003-2004 and 2005-2006, respectively, for specialties with at least 75 physicians. If Medicare variances and commercial plan variances were the same, we might expect the Medicare Boston variances to be closest to the RAND variances because they both represent data from physicians and patients in Massachusetts. We have estimates for both Boston and RAND for 26 specialties during 2003-2004 and 27 specialties during 2005-2006 (vascular surgery added).

The Boston Medicare variance exceeds the RAND variance for 21 of 26 specialties during 2003-2004 and for 22 of 27 specialties during 2005-2006. An asterisk indicates that the Boston variance is significantly different from the RAND variance at the 5 percent level of significance. The Boston variances are significantly higher for 15 specialties during 2003-2004 and 16 specialties during 2005-2006 (vascular surgery is the sixteenth), and significantly lower for one specialty (rheumatology) during both periods.

It is somewhat easier to compare variances among MSAs and among periods graphically. Appendix A contains bar charts that display the estimates of between-physician variances, by MSA and year, for each specialty. A red broken line marks the reliability reported by the RAND study for that specialty, if it is available. A vertical gray line on each bar indicates a 95 percent confidence interval for each variance estimate. If the gray line crosses the broken red line then the variance estimated for that MSA is definitely not statistically different from the RAND variance. However, the converse is not necessarily true. That is, the MSA variance is *not necessarily* statistically different from the RAND variance if the gray line does not cross the broken line

(because the comparison does not account for the error of the RAND variance estimate).

The differences among variances across MSAs are also interesting. These differences suggest geographic variation in physician practices.

### **Between-physician variances for log(cost) scores**

Tables 7 and 8 display the between-physician log(cost) variance estimates for each of the six MSAs in our study for 2003-2004 and 2005-2006, respectively, for specialties with at least 75 physicians. The between-physician log(cost) score variances tend to follow the same pattern as the between physician basic score variances.

**TABLE 5: Estimates of the Physician-to-Physician Variance Components, Basic Scores, 2003-2004**

Specialty	Statistic	RAND	MSA					
			Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Allergy/immunology	Variance	0.069	0.044	-	-	-	-	-
	Std Err	0.013	0.011	-	-	-	-	-
Cardiology	Variance	0.130	0.265*	-	0.223	0.269	0.181	0.257
	Std Err	0.013	0.018	-	0.024	0.029	0.022	0.025
Cardiothoracic surgery	Variance	0.000	0.050*	-	-	-	-	-
	Std Err	--	0.009	-	-	-	-	-
Chiropractic	Variance	n.a.	0.210	0.129	0.216	0.256	0.134	0.225
	Std Err	n.a.	0.013	0.018	0.034	0.016	0.012	0.014
Dermatology	Variance	0.096	0.202*	-	0.186	0.120	0.103	0.105
	Std Err	0.009	0.017	-	0.026	0.019	0.013	0.014
Emergency medicine	Variance	0.049	0.046	0.055	0.019	0.037	0.023	0.045
	Std Err	0.005	0.004	0.010	0.007	0.006	0.006	0.006
Endocrinology	Variance	0.026	0.046	-	-	-	-	-
	Std Err	0.006	0.010	-	-	-	-	-
Family/General practice	Variance	0.022	0.096*	0.083	0.116	0.098	0.159	0.091
	Std Err	0.002	0.007	0.007	0.009	0.006	0.010	0.006
Gastroenterology	Variance	0.036	0.044	-	0.046	0.013	0.041	0.043
	Std Err	0.003	0.005	-	0.009	0.003	0.008	0.007
General surgery	Variance	0.056	0.086*	0.047	0.100	0.042	0.059	0.054
	Std Err	0.007	0.008	0.009	0.016	0.006	0.011	0.009
Hematology/oncology	Variance	0.088	0.152*	-	0.142	0.065	0.079	0.075
	Std Err	0.021	0.015	-	0.026	0.012	0.016	0.014
Infectious disease	Variance	0.066	0.040	-	-	-	-	-
	Std Err	0.017	0.013	-	-	-	-	-
Internal medicine	Variance	0.037	0.151*	0.148	0.143	0.192	0.173	0.326
	Std Err	0.002	0.005	0.016	0.010	0.012	0.012	0.018
Nephrology	Variance	0.058	0.038	-	-	-	-	-
	Std Err	0.016	0.009	-	-	-	-	-
Neurology	Variance	0.067	0.178*	-	0.099	0.094	0.107	0.185
	Std Err	0.009	0.018	-	0.019	0.018	0.021	0.030

**TABLE 5: Estimates of the Physician-to-Physician Variance Components, Basic Scores, 2003-2004**

Specialty	Statistic	RAND	MSA					
			Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Neurosurgery	Variance	0.024	0.088*	-	-	-	-	-
	Std Err	0.010	0.017	-	-	-	-	-
Obstetrics/gynecology	Variance	0.029	0.078*	0.045	0.065	0.050	0.059	0.061
	Std Err	0.002	0.007	0.011	0.011	0.010	0.010	0.009
Ophthalmology	Variance	0.043	0.198*	-	0.174	0.237	0.177	0.235
	Std Err	0.004	0.014	-	0.020	0.026	0.021	0.026
Oral/Maxillofacial surgery	Variance	0.027	0.006	-	-	0.000	-	-
	Std Err	0.006	0.011	-	-	.	-	-
Orthopedic surgery	Variance	0.026	0.141*	0.063	0.162	0.082	0.104	0.130
	Std Err	0.004	0.011	0.012	0.023	0.010	0.013	0.014
Otolaryngology	Variance	0.044	0.055	-	-	0.036	0.074	0.039
	Std Err	0.006	0.009	-	-	0.010	0.014	0.011
Peripheral vascular disease	Variance	n.a.	-	-	-	-	-	-
	Std Err	n.a.	-	-	-	-	-	-
Physical medicine and rehabilitation	Variance	0.083	0.136	-	-	0.095	-	-
	Std Err	0.019	0.026	-	-	0.030	-	-
Plastic and reconstructive surgery	Variance	0.036	0.037	-	-	-	-	-
	Std Err	0.009	0.010	-	-	-	-	-
Podiatry	Variance	n.a.	0.092	-	0.084	0.085	0.119	0.107
	Std Err	n.a.	0.009	-	0.012	0.019	0.017	0.016
Psychiatry	Variance	0.089	0.324*	0.453	0.367	0.610	0.221	0.420
	Std Err	0.012	0.023	0.096	0.052	0.073	0.047	0.077
Pulmonary disease	Variance	0.061	0.108*	-	0.026	0.019	0.070	0.063
	Std Err	0.015	0.017	-	0.007	0.010	0.017	0.015
Rheumatology	Variance	0.136	0.070*	-	-	-	-	-
	Std Err	0.023	0.012	-	-	-	-	-
Urology	Variance	0.017	0.053*	-	0.112	0.021	0.080	0.057
	Std Err	0.003	0.007	-	0.021	0.005	0.016	0.011
Vascular surgery	Variance	0.005	-	-	-	-	-	-
	Std Err	0.009	-	-	-	-	-	-

\* Statistically significant at the 5 % level. Cardiothoracic surgery assumed RAND SE = Boston SE.

**TABLE 6: Estimates of the Physician-to-Physician Variance Components, Basic Scores, 2005-2006**

Specialty	Statistic	RAND	MSA					
			Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Allergy/immunology	Variance	0.069	0.054	-	-	-	-	-
	Std Err	0.013	0.013	-	-	-	-	-
Cardiology	Variance	0.130	0.295*	-	0.269	0.281	0.137	0.305
	Std Err	0.013	0.020	-	0.031	0.031	0.017	0.028
Cardiothoracic surgery	Variance	0.000	0.037*	-	-	-	-	-
	Std Err	.	0.007	-	-	-	-	-
Chiropractic	Variance	n.a.	0.229	0.128	0.156	0.251	0.141	0.195
	Std Err	n.a.	0.015	0.018	0.032	0.016	0.012	0.014
Dermatology	Variance	0.096	0.171*	-	0.145	0.101	0.111	0.109
	Std Err	0.009	0.015	-	0.020	0.015	0.013	0.014
Emergency medicine	Variance	0.049	0.054	0.049	0.017	0.033	0.023	0.044
	Std Err	0.005	0.005	0.009	0.007	0.005	0.005	0.006
Endocrinology	Variance	0.026	0.029	-	-	-	-	-
	Std Err	0.006	0.007	-	-	-	-	-
Family/General practice	Variance	0.022	0.105*	0.091	0.142	0.090	0.129	0.085
	Std Err	0.002	0.008	0.009	0.010	0.006	0.009	0.006
Gastroenterology	Variance	0.036	0.056*	-	0.039	0.011	0.031	0.032
	Std Err	0.003	0.006	-	0.009	0.003	0.006	0.005
General surgery	Variance	0.056	0.079*	0.051	0.061	0.039	0.060	0.061
	Std Err	0.007	0.008	0.010	0.011	0.006	0.011	0.009
Hematology/oncology	Variance	0.088	0.150*	-	0.163	0.111	0.077	0.139
	Std Err	0.021	0.014	-	0.030	0.019	0.015	0.022
Infectious disease	Variance	0.066	0.069	-	-	-	-	-
	Std Err	0.017	0.017	-	-	-	-	-
Internal medicine	Variance	0.037	0.176*	0.171	0.147	0.175	0.149	0.335
	Std Err	0.002	0.006	0.018	0.011	0.011	0.010	0.018
Nephrology	Variance	0.058	0.037	-	-	-	-	0.006
	Std Err	0.016	0.009	-	-	-	-	0.003
Neurology	Variance	0.067	0.172*	-	0.120	0.086	0.163	0.153
	Std Err	0.009	0.018	-	0.024	0.016	0.031	0.025

**TABLE 6: Estimates of the Physician-to-Physician Variance Components, Basic Scores, 2005-2006**

Specialty	Statistic	RAND	MSA					
			Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Neurosurgery	Variance	0.024	0.115*	-	-	-	-	-
	Std Err	0.010	0.023	-	-	-	-	-
Obstetrics/gynecology	Variance	0.029	0.069*	0.057	0.041	0.070	0.068	0.063
	Std Err	0.002	0.007	0.013	0.009	0.012	0.012	0.010
Ophthalmology	Variance	0.043	0.179*	-	0.175	0.249	0.183	0.247
	Std Err	0.004	0.013	-	0.020	0.027	0.021	0.027
Oral/Maxillofacial surgery	Variance	0.027	0.024	-	-	0.005	-	-
	Std Err	0.006	0.017	-	-	0.010	-	-
Orthopedic surgery	Variance	0.026	0.153*	0.072	0.146	0.083	0.113	0.136
	Std Err	0.004	0.012	0.013	0.022	0.010	0.015	0.014
Otolaryngology	Variance	0.044	0.053	-	-	0.026	0.083	0.052
	Std Err	0.006	0.008	-	-	0.010	0.016	0.013
Peripheral vascular disease	Variance	n.a.	0.071	-	-	-	-	-
	Std Err	n.a.	0.016	-	-	-	-	-
Physical medicine and rehabilitation	Variance	0.083	0.062	-	-	-	-	-
	Std Err	0.019	0.014	-	-	-	-	-
Plastic and reconstructive surgery	Variance	0.036	0.082	-	0.069	0.072	0.093	0.095
	Std Err	0.009	0.009	-	0.011	0.016	0.013	0.015
Podiatry	Variance	n.a.	0.280	0.454	0.255	0.540	0.199	0.454
	Std Err	n.a.	0.021	0.094	0.040	0.070	0.044	0.086
Psychiatry	Variance	0.089	0.104*	-	0.062	0.025	0.076	0.070
	Std Err	0.012	0.017	-	0.014	0.011	0.019	0.018
Pulmonary disease	Variance	0.061	0.076	-	-	-	-	-
	Std Err	0.015	0.013	-	-	-	-	-
Rheumatology	Variance	0.136	0.083*	-	0.099	0.045	0.095	0.075
	Std Err	0.023	0.011	-	0.018	0.010	0.019	0.013
Urology	Variance	0.017	0.054*	-	-	-	-	-
	Std Err	0.003	0.013	-	-	-	-	-
Vascular surgery	Variance	0.005	0.295*	-	0.269	0.281	0.137	0.305
	Std Err	0.009	0.020	-	0.031	0.031	0.017	0.028

\* Statistically significant at the 5 % level. Cardiothoracic surgery assumed RAND SE = Boston SE.

**TABLE 7: Estimates of the Physician-to-Physician Variance Components, Log(Cost) Scores, 2003-2004**

Specialty	Statistic	MSA					
		Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Allergy/immunology	Variance	0.050	-	-	-	-	-
	Std Err	0.010	-	-	-	-	-
Cardiology	Variance	0.357	-	0.329	0.313	0.149	0.232
	Std Err	0.023	-	0.034	0.033	0.018	0.023
Cardiothoracic surgery	Variance	0.201	-	-	-	-	-
	Std Err	0.035	-	-	-	-	-
Chiropractic	Variance	0.241	0.179	0.202	0.268	0.183	0.274
	Std Err	0.016	0.023	0.031	0.016	0.014	0.017
Dermatology	Variance	0.161	-	0.092	0.098	0.080	0.078
	Std Err	0.013	-	0.013	0.015	0.009	0.011
Emergency medicine	Variance	0.066	0.075	0.034	0.076	0.028	0.097
	Std Err	0.005	0.011	0.005	0.007	0.003	0.009
Endocrinology	Variance	0.064	-	-	-	-	-
	Std Err	0.009	-	-	-	-	-
Family/General practice	Variance	0.150	0.070	0.198	0.110	0.167	0.135
	Std Err	0.009	0.005	0.011	0.005	0.009	0.007
Gastroenterology	Variance	0.076	-	0.053	0.043	0.067	0.104
	Std Err	0.007	-	0.009	0.008	0.011	0.015
General surgery	Variance	0.147	0.079	0.135	0.077	0.121	0.158
	Std Err	0.012	0.013	0.019	0.011	0.017	0.024
Hematology/oncology	Variance	0.212	-	0.159	0.407	0.148	0.227
	Std Err	0.020	-	0.029	0.063	0.027	0.037
Infectious disease	Variance	0.123	-	-	-	-	-
	Std Err	0.021	-	-	-	-	-
Internal medicine	Variance	0.347	0.429	0.282	0.445	0.326	0.829
	Std Err	0.010	0.045	0.018	0.024	0.020	0.041
Nephrology	Variance	0.111	-	-	-	-	-
	Std Err	0.019	-	-	-	-	-
Neurology	Variance	0.154	-	0.109	0.092	0.163	0.143
	Std Err	0.013	-	0.017	0.014	0.028	0.022
Neurosurgery	Variance	0.181	-	-	-	-	-
	Std Err	0.034	-	-	-	-	-

**TABLE 7: Estimates of the Physician-to-Physician Variance Components, Log(Cost) Scores, 2003-2004**

Specialty	Statistic	MSA					
		Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Obstetrics/gynecology	Variance	0.062	0.030	0.063	0.054	0.047	0.053
	Std Err	0.005	0.005	0.008	0.007	0.005	0.006
Ophthalmology	Variance	0.126	-	0.129	0.133	0.135	0.202
	Std Err	0.009	-	0.015	0.014	0.016	0.023
Oral/Maxillofacial surgery	Variance	0.054	-	-	0.021	-	-
	Std Err	0.013	-	-	0.013	-	-
Orthopedic surgery	Variance	0.125	0.092	0.124	0.094	0.124	0.132
	Std Err	0.010	0.016	0.016	0.011	0.014	0.014
Otolaryngology	Variance	0.077	-	-	0.064	0.093	0.123
	Std Err	0.009	-	-	0.011	0.015	0.023
Physical medicine and rehabilitation	Variance	0.205	-	-	0.125	-	-
	Std Err	0.034	-	-	0.028	-	-
Plastic and reconstructive surgery	Variance	0.077	-	-	-	-	-
	Std Err	0.013	-	-	-	-	-
Podiatry	Variance	0.076	-	0.067	0.060	0.096	0.077
	Std Err	0.006	-	0.007	0.010	0.011	0.010
Psychiatry	Variance	1.172	2-053	0.780	1-359	1-048	2-006
	Std Err	0.072	0.354	0.099	0.144	0.201	0.286
Pulmonary disease	Variance	0.116	-	0.087	0.047	0.133	0.108
	Std Err	0.015	-	0.015	0.011	0.024	0.018
Rheumatology	Variance	0.076	-	-	-	-	-
	Std Err	0.011	-	-	-	-	-
Urology	Variance	0.098	-	0.147	0.051	0.122	0.086
	Std Err	0.011	-	0.023	0.010	0.022	0.014

**TABLE 8: Estimates of the Physician-to-Physician Variance Components, Log(Cost) Scores, 2005-2006**

Specialty	Statistic	MSA					
		Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Allergy/immunology	Variance	0.047	-	-	-	-	-
	Std Err	0.010	-	-	-	-	-
Cardiology	Variance	0.363	-	0.334	0.325	0.125	0.251
	Std Err	0.024	-	0.035	0.035	0.016	0.023
Cardiothoracic surgery	Variance	0.165	-	-	-	-	-
	Std Err	0.030	-	-	-	-	-
Chiropractic	Variance	0.247	0.166	0.188	0.250	0.195	0.243
	Std Err	0.016	0.021	0.032	0.015	0.015	0.016
Dermatology	Variance	0.159	-	0.086	0.119	0.087	0.092
	Std Err	0.013	-	0.012	0.018	0.010	0.012
Emergency medicine	Variance	0.078	0.075	0.037	0.070	0.029	0.094
	Std Err	0.005	0.011	0.006	0.007	0.004	0.008
Endocrinology	Variance	0.053	-	-	-	-	-
	Std Err	0.008	-	-	-	-	-
Family/General practice	Variance	0.140	0.075	0.226	0.096	0.109	0.116
	Std Err	0.008	0.006	0.012	0.004	0.006	0.006
Gastroenterology	Variance	0.086	-	0.057	0.037	0.062	0.079
	Std Err	0.007	-	0.010	0.007	0.010	0.011
General surgery	Variance	0.134	0.068	0.099	0.079	0.107	0.128
	Std Err	0.011	0.011	0.014	0.011	0.017	0.017
Hematology/oncology	Variance	0.207	-	0.237	0.374	0.150	0.301
	Std Err	0.018	-	0.040	0.055	0.028	0.044
Infectious disease	Variance	0.146	-	-	-	-	-
	Std Err	0.025	-	-	-	-	-
Internal medicine	Variance	0.449	0.477	0.277	0.462	0.341	0.873
	Std Err	0.013	0.048	0.017	0.025	0.020	0.042
Nephrology	Variance	0.079	-	-	-	-	0.024
	Std Err	0.013	-	-	-	-	0.006
Neurology	Variance	0.167	-	0.135	0.074	0.243	0.211
	Std Err	0.014	-	0.022	0.012	0.040	0.030

**TABLE 8: Estimates of the Physician-to-Physician Variance Components, Log(Cost) Scores, 2005-2006**

Specialty	Statistic	MSA					
		Boston	Green-ville	Miami	Minne-apolis	Orange County	Phoenix
Neurosurgery	Variance	0.239	-	-	-	-	-
	Std Err	0.046	-	-	-	-	-
Obstetrics/gynecology	Variance	0.063	0.025	0.052	0.051	0.056	0.064
	Std Err	0.005	0.004	0.006	0.007	0.006	0.008
Ophthalmology	Variance	0.126	-	0.098	0.151	0.114	0.211
	Std Err	0.009	-	0.011	0.016	0.013	0.023
Oral/Maxillofacial surgery	Variance	0.079	-	-	0.034	-	-
	Std Err	0.017	-	-	0.017	-	-
Orthopedic surgery	Variance	0.122	0.061	0.112	0.087	0.113	0.121
	Std Err	0.009	0.011	0.015	0.010	0.014	0.013
Otolaryngology	Variance	0.103	-	-	0.064	0.095	0.097
	Std Err	0.011	-	-	0.011	0.015	0.017
Physical medicine and rehabilitation	Variance	0.123	-	-	-	-	-
	Std Err	0.022	-	-	-	-	-
Plastic and reconstructive surgery	Variance	0.081	-	-	-	-	-
	Std Err	0.015	-	-	-	-	-
Podiatry	Variance	0.079	-	0.069	0.053	0.088	0.069
	Std Err	0.007	-	0.008	0.008	0.010	0.008
Psychiatry	Variance	0.932	1-418	0.753	1-525	0.998	1-800
	Std Err	0.062	0.256	0.107	0.169	0.213	0.268
Pulmonary disease	Variance	0.122	-	0.110	0.042	0.183	0.128
	Std Err	0.015	-	0.019	0.009	0.033	0.021
Rheumatology	Variance	0.073	-	-	-	-	-
	Std Err	0.011	-	-	-	-	-
Urology	Variance	0.129	-	0.112	0.110	0.096	0.111
	Std Err	0.015	-	0.018	0.021	0.017	0.017

## RELIABILITY

For Boston 2003-2004 and 2005-2006, respectively, tables 9 and 10 show the percentage of physicians with reliable scores (reliability over 70 percent) and the percentage of episodes and costs attributed to physicians with reliable scores, overall and for each specialty, for both scoring methods: basic and log(cost). Tables for all MSAs corresponding to reliability thresholds of 70, 80, and 90 percent are contained in Appendix B.

The top row of each table shows the MSA-period total number and percentage of physicians with reliable scores (physicians with reliability > 70 percent) and the number and percentage of episodes and costs attributed to physicians with reliable scores. The physicians with the most reliable scores tend to be those with the most episodes attributed to them. Consequently, the percentage of episodes and costs belonging to physicians with reliable scores tends to be quite high.

For example, for Boston 2003-2004, about 50 percent of the physicians in our analysis have reliable basic scores. This is substantially more than the 34 percent reported in the RAND study, but still lower than most analysts would hope to see. However, the episodes attributed to physicians with reliable scores represent about 93 percent of the episodes and 91 percent of costs. The percentages increase significantly for log(cost) scores, increasing from 50 percent of physicians to 71 percent of physicians with reliable scores and increasing from 91 percent to 98 percent of costs. We see similar results for 2005-2006. While 50 percent appears dismal for the percentage of physicians with reliable basic scores, over 90 percent is quite encouraging for the percentage of episodes and costs because it means that we can successfully profile the physicians responsible for the vast majority of care. The remaining lines in each table show the results for each specialty.

The basic score results are less encouraging for some specialties. For example, in Boston the 36 percent of emergency medicine physicians with reliable basic scores accounted only for about two-thirds of episodes and costs. The percentage of physicians doubles for the reliability of the log(cost) score. In any case, this suggests a strategy for prioritizing improvements in reliability by putting at the top of the list specialties with the highest total costs attributed to physicians with unreliable basic scores.

Figure 1 demonstrates the inadequacy of establishing a general fixed sample size threshold to ensure reliability. Figure 1 shows the estimated median reliability of basic physician scores as a

function of physician sample size<sup>6</sup>. The horizontal axis represents sample size (on a logarithmic scale) and the vertical axis represents the median reliability at each sample size. The red curve is for Boston internists and the blue curve is for Boston general surgeons (2003-2004). At a sample size of 50 episodes, the median reliability is about 70 percent for internists, but only about 40 percent for general surgeons. The median reliability for Boston general surgeons reaches 70 percent at about 200 episodes.

The 70 percent reliability threshold is commonly used, but it is somewhat arbitrary. Appendix B contains reliability results for two other thresholds: 80 percent and 90 percent. For example, for Boston 2003-2004, only 23 percent of physicians have basic scores exceeding 90 percent reliability. However, those physicians are attributed 66 percent of episodes and 65 percent of costs. For the log(cost) score, 53 percent of physicians have scores exceeding 90 percent reliability, representing 96 percent of episodes and 88 percent of costs.

Table 11 compares the median basic score reliability for each specialty between the Boston Medicare scores and the RAND commercial-payer scores. The Boston Medicare median reliabilities are larger for 16 and 17 out of 26 specialties, in 2003-2004 and 2005-2006, respectively. Across all specialties, the Boston Medicare median reliability is 70 percent and 68 percent for 2003-2004 and 2005-2006, respectively. Appendix C contains the median reliabilities for both basic scores and log(cost) scores for all six MSAs. The median reliabilities for log(cost) scores tend to be higher than those for the basic scores.

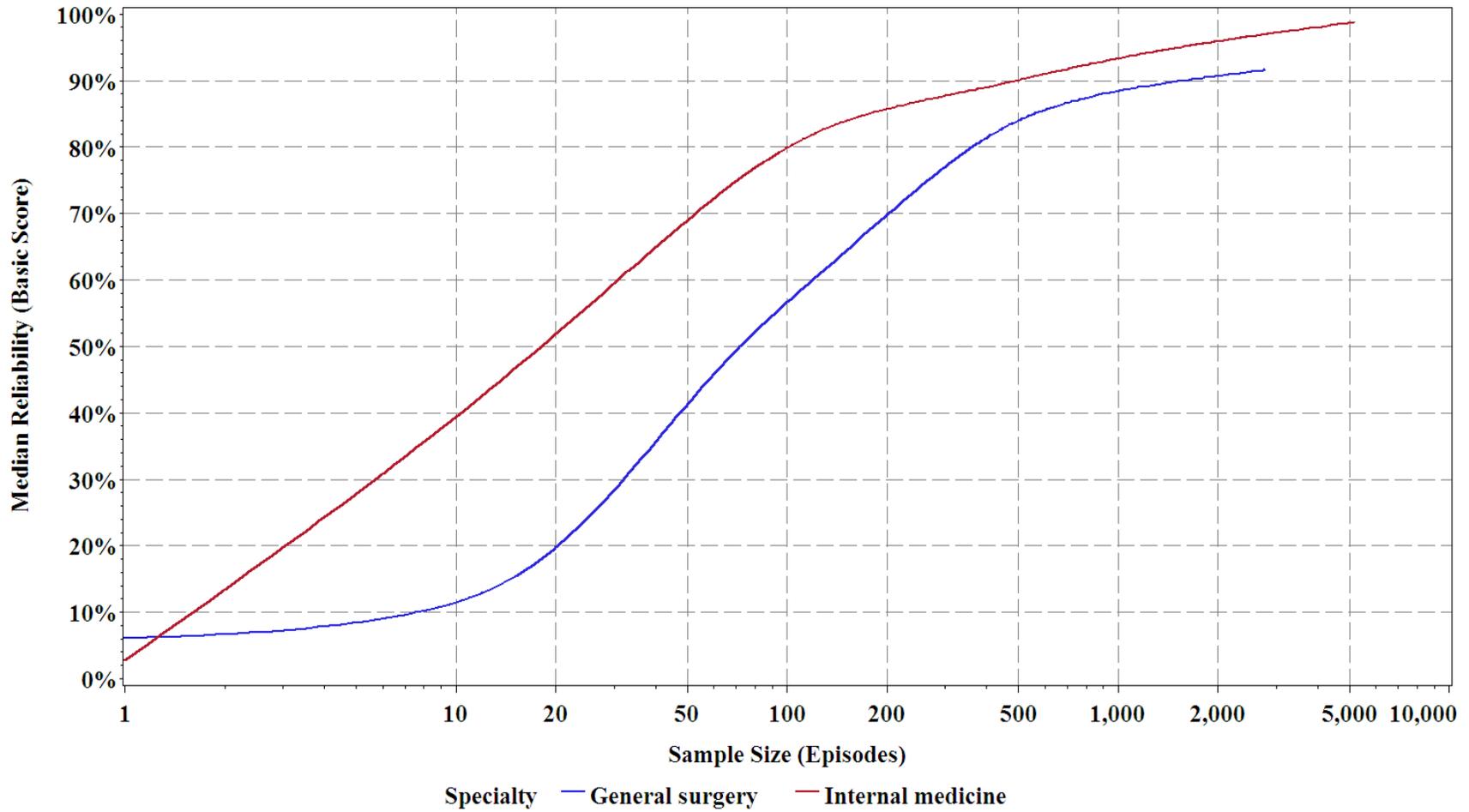
Appendix D contains the median reliabilities among physicians with at least 30 episodes<sup>7</sup>. For the Boston MSA, this analysis shows that using a threshold minimum number of 30 episodes increased the median reliability of the cost profiles for physicians in all specialties (the overall median reliability increased from 70 % to 84 %). This finding is consistent with the result of a sensitivity analysis reported in the RAND study, which states that a 30-episode per physician minimum threshold increased the median reliability for 18 of the 28 specialties examined.

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<sup>6</sup> These curves represent scatterplot smoothers.

<sup>7</sup> We refit the hierarchical regressions using only physicians with at least 30 episodes for this analysis.

FIGURE 1: Median Reliability by Sample Size, Boston Internists and General Surgeons, 2003-2004



**TABLE 9: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2003-2004**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
All	Basic	7,211	7,097	50.4	49.6	354,476	4,484,021	7.3	92.7	\$457,014,197	\$4,785,473,367	8.7	91.3
	Log	4,131	10177	28.9	71.1	35,097	4,803,400	0.7	99.3	\$124,931,604	\$5,117,555,960	2.4	97.6
Specialty Group	Basic	51	34	60.0	40.0	4,096	14,618	21.9	78.1	\$2,345,264	\$9,765,502	19.4	80.6
	Log	24	61	28.2	71.8	314	18,400	1.7	98.3	\$194,647	\$11,916,119	1.6	98.4
Cardiology	Basic	178	495	26.4	73.6	2,102	328,295	0.6	99.4	\$4,455,995	\$605,185,002	0.7	99.3
	Log	136	537	20.2	79.8	860	329,537	0.3	99.7	\$4,569,108	\$605,071,889	0.7	99.3
Cardiothoracic surgery	Basic	42	69	37.8	62.2	835	10,301	7.5	92.5	\$9,490,683	\$166,017,075	5.4	94.6
	Log	39	72	35.1	64.9	378	10,758	3.4	96.6	\$7,991,360	\$167,516,398	4.6	95.4
Chiropractic	Basic	267	546	32.8	67.2	1,691	41,406	3.9	96.1	\$746,998	\$17,335,853	4.1	95.9
	Log	255	558	31.4	68.6	1,304	41,793	3.0	97.0	\$563,839	\$17,519,012	3.1	96.9
Dermatology	Basic	51	284	15.2	84.8	1,571	248,093	0.6	99.4	\$671,175	\$72,543,854	0.9	99.1
	Log	28	307	8.4	91.6	120	249,544	0.0	100.0	\$82,601	\$73,132,428	0.1	99.9
Emergency medicine	Basic	426	238	64.2	35.8	41,418	89,460	31.6	68.4	\$46,255,713	\$92,874,366	33.2	66.8
	Log	181	483	27.3	72.7	2,216	128,662	1.7	98.3	\$2,385,750	\$136,744,329	1.7	98.3
Endocrinology	Basic	120	40	75.0	25.0	12,481	25,831	32.6	67.4	\$9,945,399	\$15,330,186	39.3	60.7
	Log	50	110	31.3	68.8	619	37,693	1.6	98.4	\$586,495	\$24,689,090	2.3	97.7

**TABLE 9: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2003-2004**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	Basic	727	348	67.6	32.4	59,036	293,051	16.8	83.2	\$36,754,830	\$156,804,871	19.0	81.0
	Log	350	725	32.6	67.4	2,191	349,896	0.6	99.4	\$4,599,164	\$188,960,537	2.4	97.6
Gastroenterology	Basic	150	203	42.5	57.5	9,901	149,773	6.2	93.8	\$10,809,114	\$136,640,731	7.3	92.7
	Log	84	269	23.8	76.2	1,078	158,596	0.7	99.3	\$1,786,823	\$145,663,022	1.2	98.8
General surgery	Basic	257	305	45.7	54.3	8,710	104,112	7.7	92.3	\$31,169,256	\$346,566,764	8.3	91.7
	Log	189	373	33.6	66.4	2,094	110,728	1.9	98.1	\$15,501,961	\$362,234,059	4.1	95.9
Hematology/oncology	Basic	201	240	45.6	54.4	3,294	75,882	4.2	95.8	\$14,754,566	\$255,459,117	5.5	94.5
	Log	163	278	37.0	63.0	1,376	77,800	1.7	98.3	\$10,273,038	\$259,940,645	3.8	96.2
Infectious disease	Basic	159	15	91.4	8.6	10,210	18,052	36.1	63.9	\$22,132,499	\$16,704,918	57.0	43.0
	Log	96	78	55.2	44.8	1,052	27,210	3.7	96.3	\$4,463,063	\$34,374,354	11.5	88.5
Internal medicine	Basic	1,605	1,966	44.9	55.1	61,119	1,425,060	4.1	95.9	\$81,592,112	\$1,261,074,893	6.1	93.9
	Log	691	2,880	19.4	80.6	3,536	1,482,643	0.2	99.8	\$16,766,768	\$1,325,900,237	1.2	98.8
Nephrology	Basic	118	35	77.1	22.9	10,111	23,110	30.4	69.6	\$21,648,368	\$46,094,867	32.0	68.0
	Log	50	103	32.7	67.3	563	32,658	1.7	98.3	\$1,940,056	\$65,803,179	2.9	97.1
Neurology	Basic	249	227	52.3	47.7	8,072	72,112	10.1	89.9	\$16,972,876	\$91,587,712	15.6	84.4
	Log	149	327	31.3	68.7	1,331	78,853	1.7	98.3	\$3,684,065	\$104,876,523	3.4	96.6
Neurosurgery	Basic	39	67	36.8	63.2	1,075	13,413	7.4	92.6	\$10,388,963	\$75,667,659	12.1	87.9
	Log	36	70	34.0	66.0	735	13,753	5.1	94.9	\$10,845,457	\$75,211,165	12.6	87.4

**TABLE 9: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2003-2004**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	Basic	671	148	81.9	18.1	43,146	53,515	44.6	55.4	\$21,577,333	\$28,812,422	42.8	57.2
	Log	346	473	42.2	57.8	4,898	91,763	5.1	94.9	\$6,180,611	\$44,209,144	12.3	87.7
Ophthalmology	Basic	142	404	26.0	74.0	1,586	502,685	0.3	99.7	\$844,787	\$212,166,717	0.4	99.6
	Log	107	439	19.6	80.4	770	503,501	0.2	99.8	\$344,289	\$212,667,215	0.2	99.8
Oral/Maxillofacial surgery	Basic	144	.	100.0	.	4,303	.	100.0	.	\$2,553,772	.	100.0	.
	Log	113	31	78.5	21.5	1,931	2,372	44.9	55.1	\$1,187,635	\$1,366,137	46.5	53.5
Orthopedic surgery	Basic	211	379	35.8	64.2	3,580	171,155	2.0	98.0	\$9,996,956	\$539,288,500	1.8	98.2
	Log	190	400	32.2	67.8	1,896	172,839	1.1	98.9	\$8,503,506	\$540,781,950	1.5	98.5
Otolaryngology	Basic	112	97	53.6	46.4	20,219	89,160	18.5	81.5	\$11,919,439	\$31,863,974	27.2	72.8
	Log	44	165	21.1	78.9	401	108,978	0.4	99.6	\$386,781	\$43,396,632	0.9	99.1
Physical medicine and rehabilitation	Basic	75	60	55.6	44.4	3,034	14,873	16.9	83.1	\$11,693,002	\$24,759,472	32.1	67.9
	Log	35	100	25.9	74.1	318	17,589	1.8	98.2	\$2,602,069	\$33,850,405	7.1	92.9
Plastic and reconstructive surgery	Basic	108	18	85.7	14.3	10,783	11,653	48.1	51.9	\$20,430,279	\$8,945,125	69.5	30.5
	Log	50	76	39.7	60.3	1,007	21,429	4.5	95.5	\$2,242,654	\$27,132,750	7.6	92.4
Podiatry	Basic	100	252	28.4	71.6	12,215	427,923	2.8	97.2	\$4,981,931	\$64,111,513	7.2	92.8
	Log	46	306	13.1	86.9	442	439,696	0.1	99.9	\$97,382	\$68,996,062	0.1	99.9

**TABLE 9: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2003-2004**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Psychiatry	Basic	684	313	68.6	31.4	3,264	27,700	10.5	89.5	\$13,420,466	\$195,610,329	6.4	93.6
	Log	475	522	47.6	52.4	1,106	29,858	3.6	96.4	\$4,972,340	\$204,058,455	2.4	97.6
Pulmonary disease	Basic	167	97	63.3	36.7	8,307	66,400	11.1	88.9	\$29,808,730	\$118,545,283	20.1	79.9
	Log	99	165	37.5	62.5	1,414	73,293	1.9	98.1	\$10,706,514	\$137,647,499	7.2	92.8
Rheumatology	Basic	85	67	55.9	44.1	5,287	54,292	8.9	91.1	\$4,946,090	\$30,564,952	13.9	86.1
	Log	50	102	32.9	67.1	565	59,014	0.9	99.1	\$570,068	\$34,940,974	1.6	98.4
Urology	Basic	72	150	32.4	67.6	3,030	132,096	2.2	97.8	\$4,707,601	\$165,151,710	2.8	97.2
	Log	55	167	24.8	75.2	582	134,544	0.4	99.6	\$903,560	\$168,955,751	0.5	99.5

**TABLE 10: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2005-2006**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
All	Basic	7,463	7,054	51.4	48.6	350,208	4,059,844	7.9	92.1	\$526,505,769	\$4,491,635,540	10.5	89.5
	Log	4,129	10388	28.4	71.6	33,557	4,376,495	0.8	99.2	\$147,409,185	\$4,870,732,124	2.9	97.1
Specialty Group	Basic	48	31	60.8	39.2	4,438	11,891	27.2	72.8	\$2,311,066	\$5,817,813	28.4	71.6
	Log	18	61	22.8	77.2	199	16,130	1.2	98.8	\$187,111	\$7,941,768	2.3	97.7
Cardiology	Basic	173	501	25.7	74.3	2,111	284,638	0.7	99.3	\$6,778,460	\$564,424,450	1.2	98.8
	Log	130	544	19.3	80.7	859	285,890	0.3	99.7	\$5,633,066	\$565,569,844	1.0	99.0
Cardiothoracic surgery	Basic	55	54	50.5	49.5	2,316	7,479	23.6	76.4	\$28,782,251	\$144,291,464	16.6	83.4
	Log	35	74	32.1	67.9	391	9,404	4.0	96.0	\$9,457,795	\$163,615,920	5.5	94.5
Chiropractic	Basic	315	502	38.6	61.4	2,403	34,263	6.6	93.4	\$1,097,510	\$13,085,178	7.7	92.3
	Log	278	539	34.0	66.0	1,523	35,143	4.2	95.8	\$720,632	\$13,462,056	5.1	94.9
Dermatology	Basic	57	288	16.5	83.5	1,351	241,032	0.6	99.4	\$917,778	\$81,724,426	1.1	98.9
	Log	29	316	8.4	91.6	131	242,252	0.1	99.9	\$102,515	\$82,539,689	0.1	99.9
Emergency medicine	Basic	418	277	60.1	39.9	34,478	92,041	27.3	72.7	\$44,675,249	\$108,022,736	29.3	70.7
	Log	179	516	25.8	74.2	1,970	124,549	1.6	98.4	\$3,043,828	\$149,654,157	2.0	98.0
Endocrinology	Basic	136	33	80.5	19.5	16,766	20,803	44.6	55.4	\$12,767,497	\$12,997,811	49.6	50.4
	Log	60	109	35.5	64.5	687	36,882	1.8	98.2	\$517,550	\$25,247,758	2.0	98.0

**TABLE 10: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2005-2006**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	Basic	678	395	63.2	36.8	44,832	273,308	14.1	85.9	\$29,076,262	\$147,396,626	16.5	83.5
	Log	336	737	31.3	68.7	1,929	316,211	0.6	99.4	\$4,331,086	\$172,141,802	2.5	97.5
Gastroenterology	Basic	154	222	41.0	59.0	8,049	138,499	5.5	94.5	\$9,702,830	\$131,017,041	6.9	93.1
	Log	89	287	23.7	76.3	981	145,567	0.7	99.3	\$1,256,479	\$139,463,392	0.9	99.1
General surgery	Basic	271	271	50.0	50.0	11,323	84,441	11.8	88.2	\$47,663,632	\$291,661,614	14.0	86.0
	Log	186	356	34.3	65.7	1,990	93,774	2.1	97.9	\$17,392,662	\$321,932,584	5.1	94.9
Hematology/oncology	Basic	192	259	42.6	57.4	3,365	72,922	4.4	95.6	\$12,436,035	\$271,029,491	4.4	95.6
	Log	153	298	33.9	66.1	1,380	74,907	1.8	98.2	\$11,340,555	\$272,124,971	4.0	96.0
Infectious disease	Basic	166	21	88.8	11.2	7,734	14,512	34.8	65.2	\$17,351,453	\$17,685,372	49.5	50.5
	Log	103	84	55.1	44.9	979	21,267	4.4	95.6	\$4,861,880	\$30,174,945	13.9	86.1
Internal medicine	Basic	1,753	2,011	46.6	53.4	57,567	1,252,822	4.4	95.6	\$97,225,477	\$1,174,990,326	7.6	92.4
	Log	687	3,077	18.3	81.7	3,055	1,307,334	0.2	99.8	\$20,042,867	\$1,252,172,936	1.6	98.4
Nephrology	Basic	138	35	79.8	20.2	11,104	21,455	34.1	65.9	\$23,188,634	\$46,452,405	33.3	66.7
	Log	72	101	41.6	58.4	1,173	31,386	3.6	96.4	\$3,910,314	\$65,730,725	5.6	94.4
Neurology	Basic	275	212	56.5	43.5	10,274	65,229	13.6	86.4	\$24,402,266	\$80,919,551	23.2	76.8
	Log	140	347	28.7	71.3	1,423	74,080	1.9	98.1	\$7,631,120	\$97,690,697	7.2	92.8
Neurosurgery	Basic	36	65	35.6	64.4	884	12,435	6.6	93.4	\$9,598,617	\$73,857,435	11.5	88.5
	Log	30	71	29.7	70.3	481	12,838	3.6	96.4	\$7,745,045	\$75,711,007	9.3	90.7

**TABLE 10: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2005-2006**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	Basic	678	124	84.5	15.5	42,532	42,944	49.8	50.2	\$23,120,126	\$25,293,672	47.8	52.2
	Log	346	456	43.1	56.9	4,364	81,112	5.1	94.9	\$4,726,073	\$43,687,725	9.8	90.2
Ophthalmology	Basic	149	402	27.0	73.0	2,142	468,400	0.5	99.5	\$1,206,389	\$207,351,868	0.6	99.4
	Log	107	444	19.4	80.6	753	469,789	0.2	99.8	\$580,618	\$207,977,639	0.3	99.7
Oral/Maxillofacial surgery	Basic	147	1	99.3	0.7	4,203	58	98.6	1.4	\$2,535,931	\$10,582	99.6	0.4
	Log	92	56	62.2	37.8	1,072	3,189	25.2	74.8	\$630,749	\$1,915,764	24.8	75.2
Orthopedic surgery	Basic	213	387	35.5	64.5	3,298	160,964	2.0	98.0	\$11,526,764	\$529,509,787	2.1	97.9
	Log	198	402	33.0	67.0	1,990	162,272	1.2	98.8	\$10,976,013	\$530,060,538	2.0	98.0
Otolaryngology	Basic	128	89	59.0	41.0	27,293	74,766	26.7	73.3	\$18,527,133	\$25,840,720	41.8	58.2
	Log	46	171	21.2	78.8	339	101,720	0.3	99.7	\$260,492	\$44,107,361	0.6	99.4
Physical medicine and rehabilitation	Basic	113	30	79.0	21.0	8,584	10,882	44.1	55.9	\$21,653,808	\$12,033,466	64.3	35.7
	Log	52	91	36.4	63.6	723	18,743	3.7	96.3	\$5,121,592	\$28,565,682	15.2	84.8
Plastic and reconstructive surgery	Basic	101	27	78.9	21.1	6,179	12,397	33.3	66.7	\$14,316,861	\$12,744,486	52.9	47.1
	Log	59	69	46.1	53.9	1,079	17,497	5.8	94.2	\$3,884,192	\$23,177,155	14.4	85.6
Podiatry	Basic	95	246	27.9	72.1	16,724	403,630	4.0	96.0	\$6,073,069	\$59,274,423	9.3	90.7
	Log	42	299	12.3	87.7	332	420,022	0.1	99.9	\$60,840	\$65,286,652	0.1	99.9
Psychiatry	Basic	618	270	69.6	30.4	3,011	22,639	11.7	88.3	\$13,887,988	\$174,407,089	7.4	92.6
	Log	441	447	49.7	50.3	1,095	24,555	4.3	95.7	\$5,208,039	\$183,087,038	2.8	97.2

**TABLE 10: Percentage of MDs, Episodes, and Costs Associated with Reliable Scores (70 % threshold), Boston 2005-2006**

Specialty / Scoring Method		MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
		Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pulmonary disease	Basic	187	86	68.5	31.5	10,461	54,512	16.1	83.9	\$37,779,423	\$99,948,545	27.4	72.6
	Log	105	168	38.5	61.5	1,484	63,489	2.3	97.7	\$15,649,987	\$122,077,981	11.4	88.6
Rheumatology	Basic	96	66	59.3	40.7	4,859	49,031	9.0	91.0	\$4,121,148	\$29,285,957	12.3	87.7
	Log	60	102	37.0	63.0	585	53,305	1.1	98.9	\$497,959	\$32,909,146	1.5	98.5
Urology	Basic	73	149	32.9	67.1	1,927	131,851	1.4	98.6	\$3,782,112	\$150,561,206	2.5	97.5
	Log	56	166	25.2	74.8	590	133,188	0.4	99.6	\$1,638,126	\$152,705,192	1.1	98.9

**TABLE 11: Median Basic Score Reliabilities, by Specialty, Boston vs. RAND**

	Boston 2003-2004		Boston 2005-2006		RAND
	MDs	Median	MDs	Median	Median
All	14,308	0.70	14,517	0.68	-
Allergy/immunology	85	0.62	79	0.62	0.86
Cardiology	673	0.92	674	0.93	0.58
Cardiothoracic surgery	111	0.81	109	0.69	0.00
Chiropractic	813	0.83	817	0.79	-
Dermatology	335	0.97	345	0.96	0.97
Emergency medicine	664	0.62	695	0.65	0.48
Endocrinology	160	0.49	169	0.37	0.37
Family/General practice	1,075	0.49	1,073	0.54	0.61
Gastroenterology	353	0.77	376	0.78	0.79
General surgery	562	0.76	542	0.70	0.46
Hematology/oncology	441	0.74	451	0.75	0.18
Infectious disease	174	0.20	187	0.29	0.13
Internal medicine	3,571	0.76	3,764	0.74	0.66
Nephrology	153	0.45	173	0.36	0.23
Neurology	476	0.67	487	0.62	0.52
Neurosurgery	106	0.74	101	0.80	0.31
Obstetrics/gynecology	819	0.46	802	0.45	0.74
Ophthalmology	546	0.96	551	0.96	0.83
Oral/Maxillofacial surgery	144	0.02	148	0.10	0.40
Orthopedic surgery	590	0.88	600	0.87	0.36
Otolaryngology	209	0.66	217	0.63	0.79
Physical medicine and rehabilitation	135	0.67	143	0.47	0.34
Plastic and reconstructive surgery	126	0.34	128	0.43	0.47
Podiatry	352	0.86	341	0.84	-
Psychiatry	997	0.51	888	0.49	0.33
Pulmonary disease	264	0.52	273	0.50	0.20
Rheumatology	152	0.60	162	0.54	0.69
Urology	222	0.85	222	0.90	0.54

## SHRINKAGE ESTIMATES

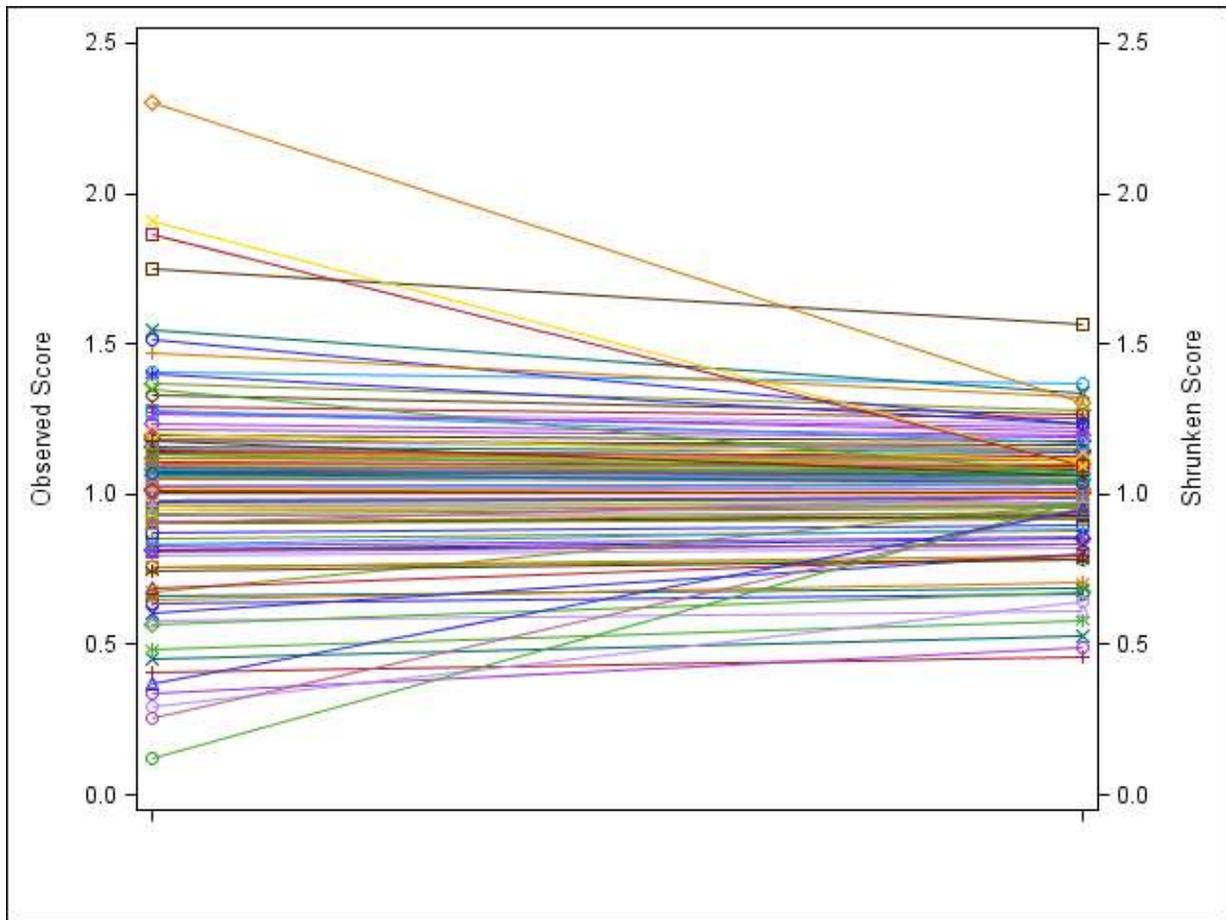
Shrinkage estimates, defined in the Methods section, may be useful in a pay-for-performance context<sup>8</sup>. They are a natural by-product of hierarchical models, such as those used in both this study and the RAND study. Figure 2 shows an example of how shrinkage estimates pull the basic scores toward the overall mean (near 1.0) for 110 general surgeons in Greenville profiled over the 2003-2004 period. The extreme observed scores tend to be pulled most drastically toward the mean score because they tend to be measured with low reliability. The top three observed scores are based on fewer than 18 episodes and the lowest score is based on only one episode. However, the shrinkage can be small for some high scores because they have high reliability. For example, the fourth highest observed score (1.75) is based on 360 episodes. For this example, the correlation between the observed scores and the shrunken scores is 82 percent, taken over all 110 general surgeons. However, the correlation increases to 94 percent when taken over the 103 general surgeons with at least 20 episodes, reinforcing that shrinkage is least for the most reliable scores.

This gives CMS at least two strategies for dealing with reliability in a pay-for-performance application. One strategy is to only score physicians with reliable scores (e.g., reliability > 70 percent) knowing that this group accounts for a very high percentage of episodes and costs. Another strategy is to reliability-adjust (shrink) the scores knowing that the least reliable scores are pulled toward the average, at which point physicians will be neither rewarded nor penalized.

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<sup>8</sup> Shrinkage estimates were not mentioned in the NEJM article.

**FIGURE 2: Score Shrinkage for 110 General Surgeons in Greenville, 2003-2004**



# CONCLUSIONS AND RECOMMENDATIONS

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For most specialties, based on the Boston results, the Medicare physician scores have a substantially more reliable profile than that reported for the Massachusetts commercial physician scores in the NEJM article using the “basic” scoring method. This is partly due to the higher physician-to-physician variances for the Medicare scores, partly due to larger physician sample sizes, and partly due to other factors discussed at the end of the Methods section.

Physician-to-physician variances sometimes differ over time and over MSAs, possibly suggesting changes in practice patterns over time and geographic variation in practice style. This has implications for applications. First, while reliability may be improved by measuring physician performance over a longer period, each physician’s performance may get better or worse over time, and the overall distribution of physician performance may change over time. Therefore, shorter performance measurement periods might be preferred over longer periods. Second, the performance distribution may differ across geographic regions. However, for a national program like Medicare, is it desirable to have regional rather than national benchmarks?

For Medicare, an alternative score based on the difference in average log(costs) had higher reliabilities than the basic score for most specialties. Policy-makers might or might not consider this alternative suitable for a given physician ranking application. However, it does suggest that alternative scoring options should be considered as a means of increasing reliability.

Even using the basic scoring method for Boston physicians, about 90 percent of Medicare episodes and costs are attributed to physicians with reliable scores, if we use 70 percent as the threshold for reliability. If we use an 80 percent reliability threshold, then over 80 percent of costs are covered and if we use a 90 percent threshold, then over 60 percent of costs are covered. This means that we can reliably score physicians who account for the majority of Medicare expenditures. Moreover, these proportions might increase substantially for alternative scoring methods. For example, over 85 percent of Boston Medicare costs are covered by

physicians whose log(cost) score exceeds 90 percent reliability.

Shrinkage estimates offer another scoring option. While shrinkage estimates would provide more reasonable estimates than the original score for many physicians, their reliability is no better than that of the original score. However, these reliability-adjusted scores pull less reliable estimates toward the overall mean, which can be desirable in a pay-for-performance application.

To address reliability in pay-for-performance scenarios, there are at least two options: 1) only include physicians with reliable scores, or 2) use shrinkage estimates for all physician scores. The shrinkage estimates pull the less reliable scores toward the score for an average physician, at which point physicians are neither penalized nor rewarded. The advantage of the first option is that it is easier for a layperson to understand than the second option and it covers the majority of costs. The advantage of the second option is that all physicians can be included in the scoring, and a reliability threshold need not be chosen.

If the intended use of physician scoring is to “steer” patients toward lower-cost physicians, then covered costs might be less of a consideration. According to one author of the RAND study, (private communication) most profiling applications to date had this “steering” purpose. Therefore, the authors decided that the percentage of physicians was more important than the percentage of costs because for steering we would exclude from consideration all physicians with unreliable scores, even though they might be lower-cost physicians. This assumes that the physicians with small Medicare samples would have both the desire and the capacity to expand their Medicare patient base.

Based on these results, Medicare should continue to invest resources in physician profiling applications. In particular, further research is needed to decide appropriate measurement periods, develop more reliable scoring methods, and decide whether different standards should be applied to different geographic regions due to geographic variations in physician resource use.

# REFERENCES

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- Adams, JL. (2009). *The Reliability of Provider Profiling, A Tutorial*. Santa Monica: RAND Corporation.
- Adams JL, Mehrotra A, Thomas JW, McGlynn EA. (2010). Physician cost profiling — reliability and risk of misclassification. *N Engl J Med*;362:1014-21.
- Houchens RL, McCracken S, Marder W, Kelley R. (2009). *The use of an Episode Grouper for Physician Profiling in Medicare: A Preliminary Investigation*. Washington DC: MedPAC.
- Laloe, D. (1993). Precision and information in linear models of genetic evaluation. *Genet Sel Evol* 25, 557-576.
- Snijders, T. A. B. and Bosker, R. J. (1999), *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*, Newbury Park, CA: Sage Publications.

# APPENDICES (ATTACHMENT)

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**APPENDIX A – BAR CHARTS FOR BETWEEN-PHYSICIAN VARIANCES**

**APPENDIX B – RELIABILITY THRESHOLD TABLES**

**APPENDIX C – MEDIAN RELIABILITY TABLES**

**APPENDIX D – MEDIAN RELIABILITY TABLES – MINIMUM 30 EPISODES**

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RESEARCH PAPER:

# THE RELIABILITY OF PHYSICIAN COST PROFILING IN MEDICARE

APPENDICES TO FINAL REPORT  
ROBERT L. HOUCHENS, PH.D.

AUGUST 27, 2010



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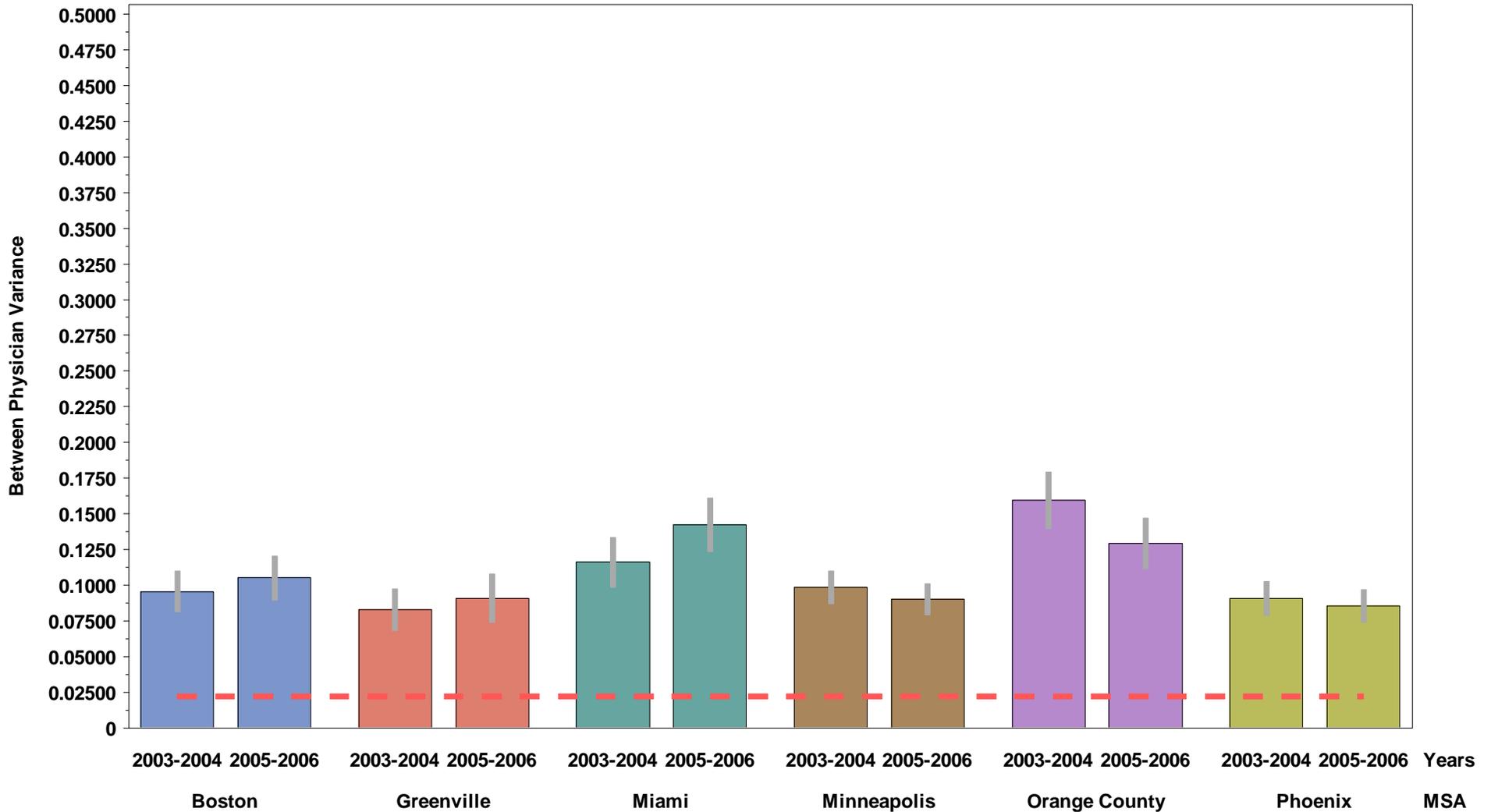
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# APPENDIX A - BAR CHARTS FOR BETWEEN-PHYSICIAN VARIANCES

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# Physician-to-Physician Variance Estimates for Physician Medicare Scores

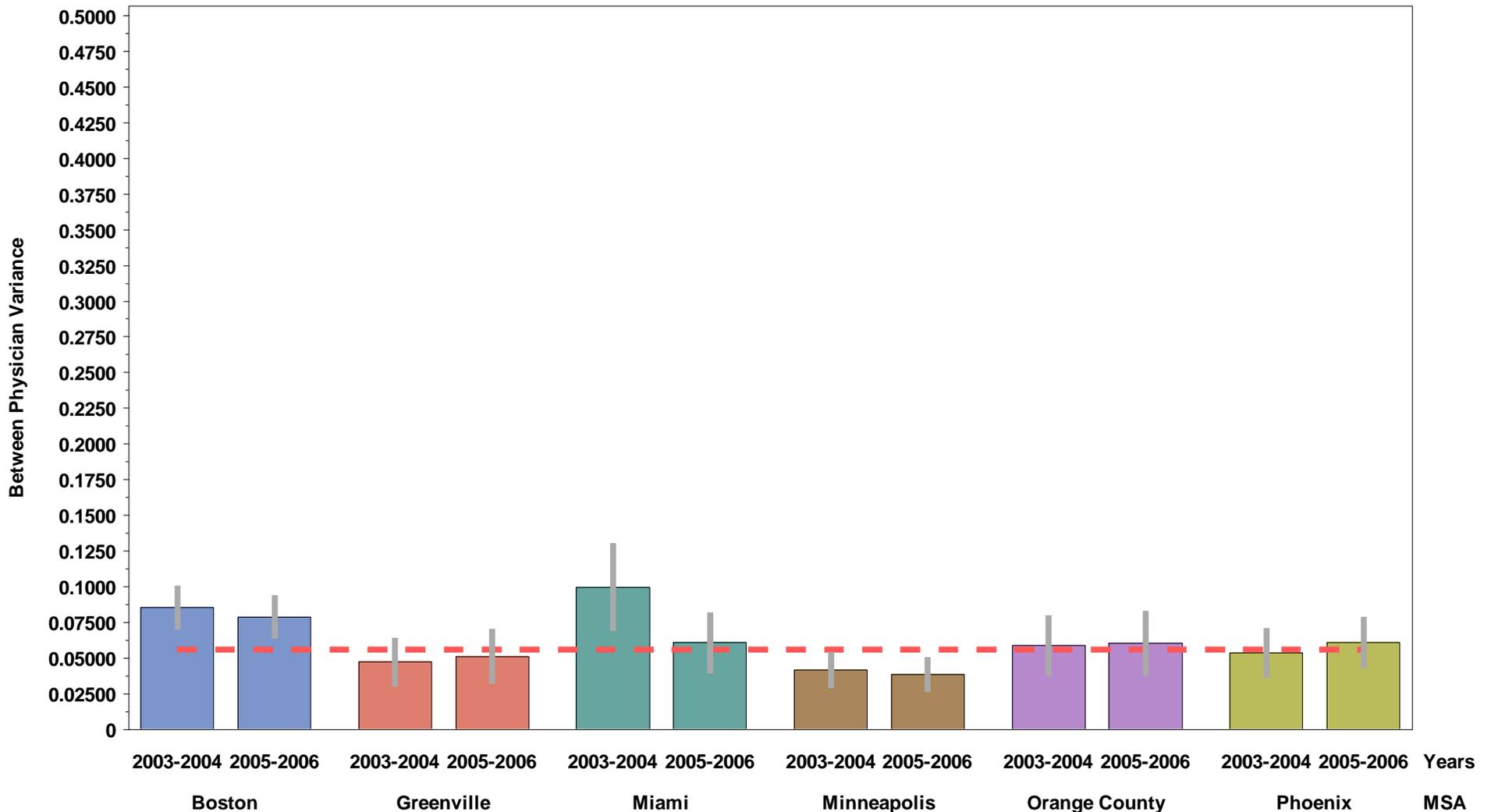
Specialty Group=Family/General practice



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

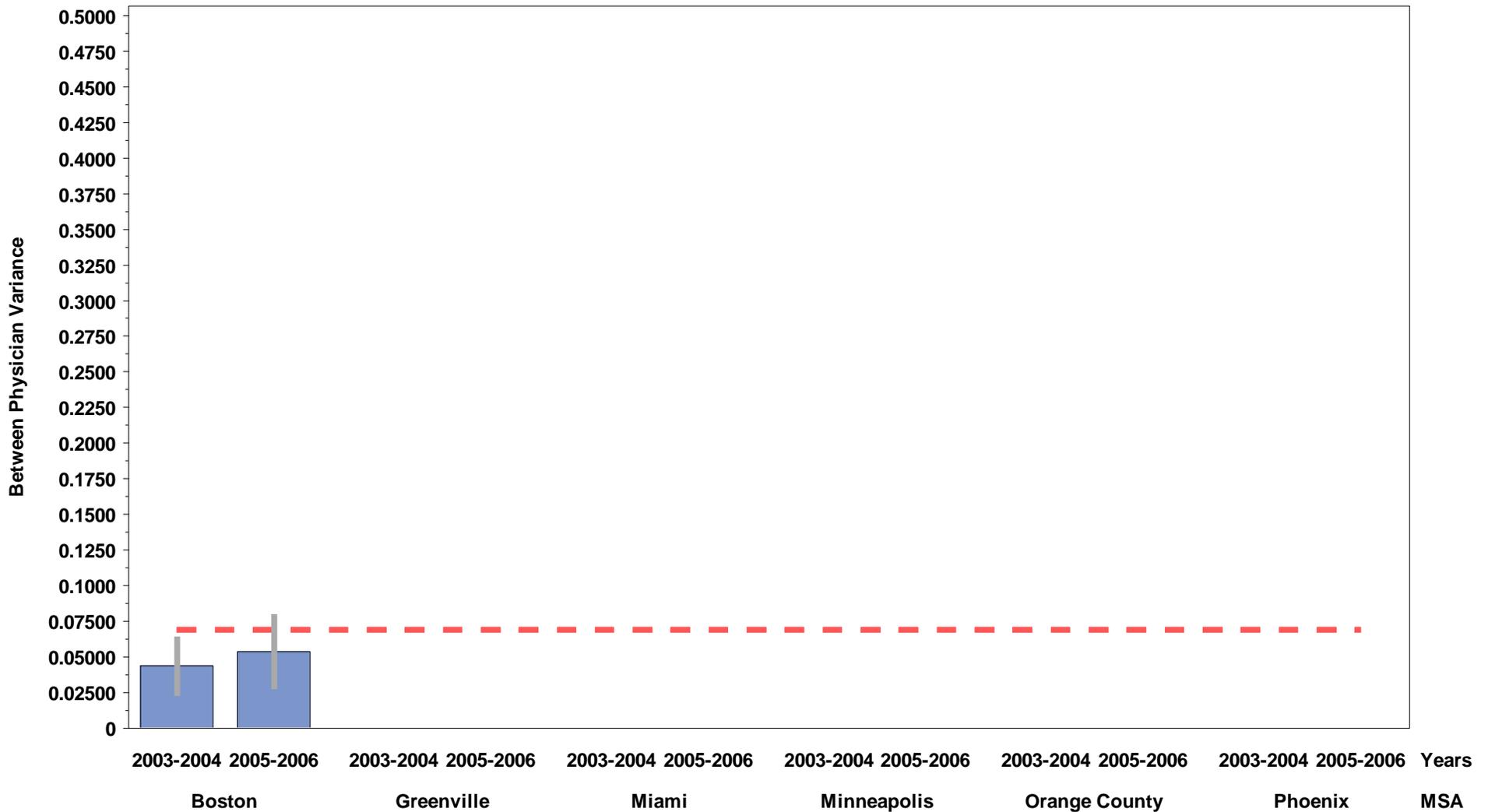
Specialty Group=General surgery



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

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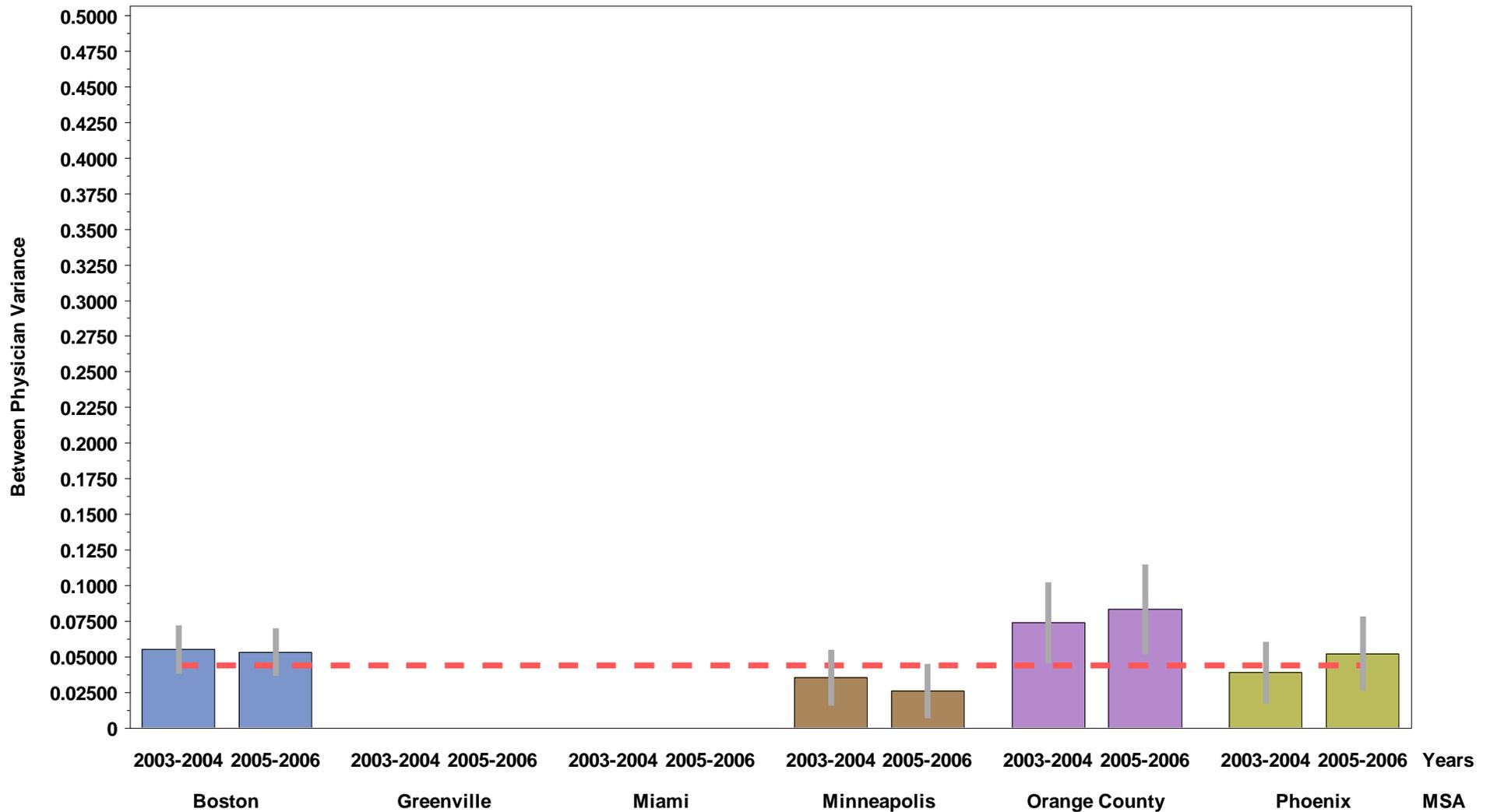
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Vertical gray bars indicate 95 % confidence intervals.  
Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

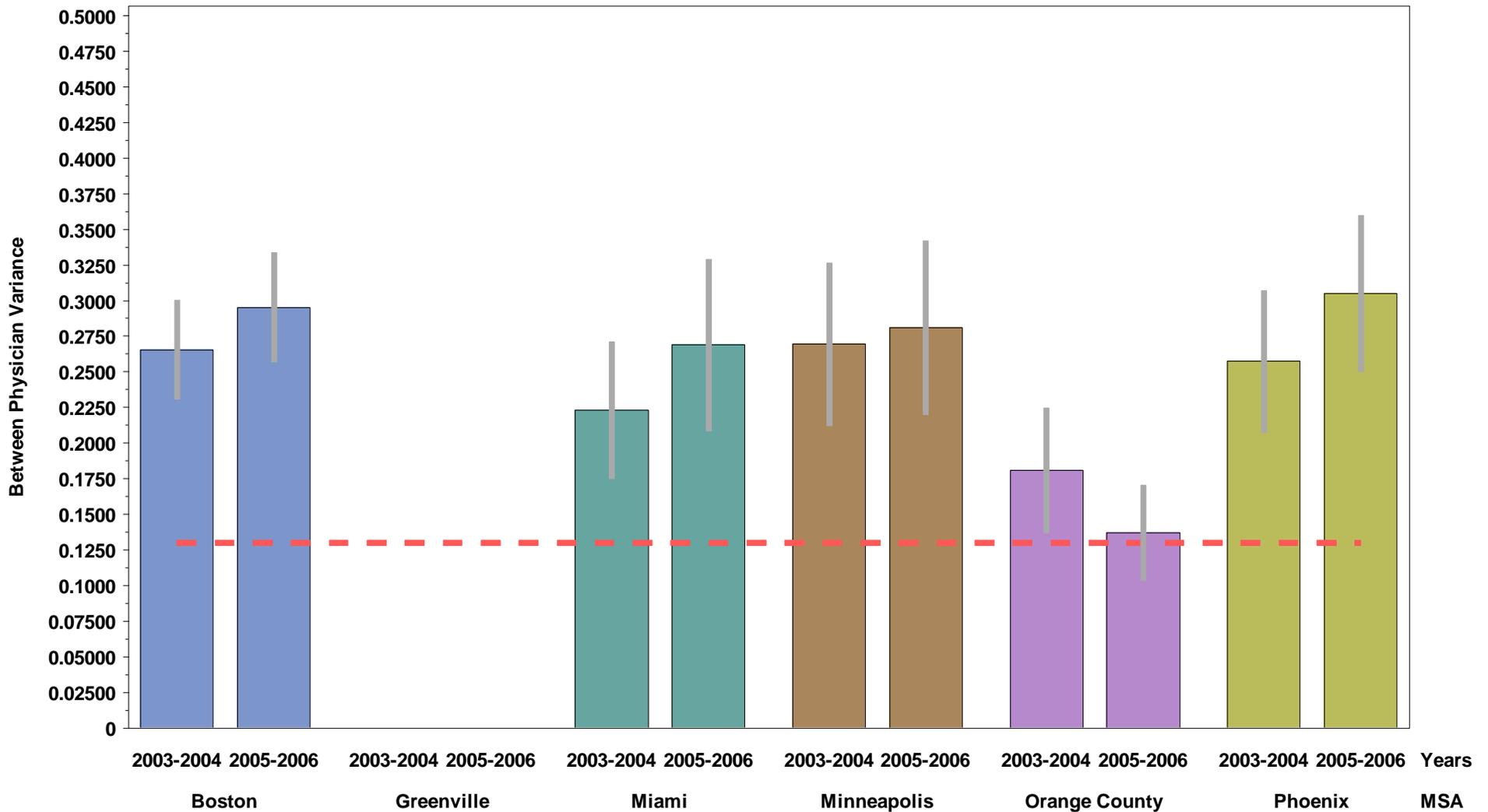
Specialty Group=Otolaryngology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

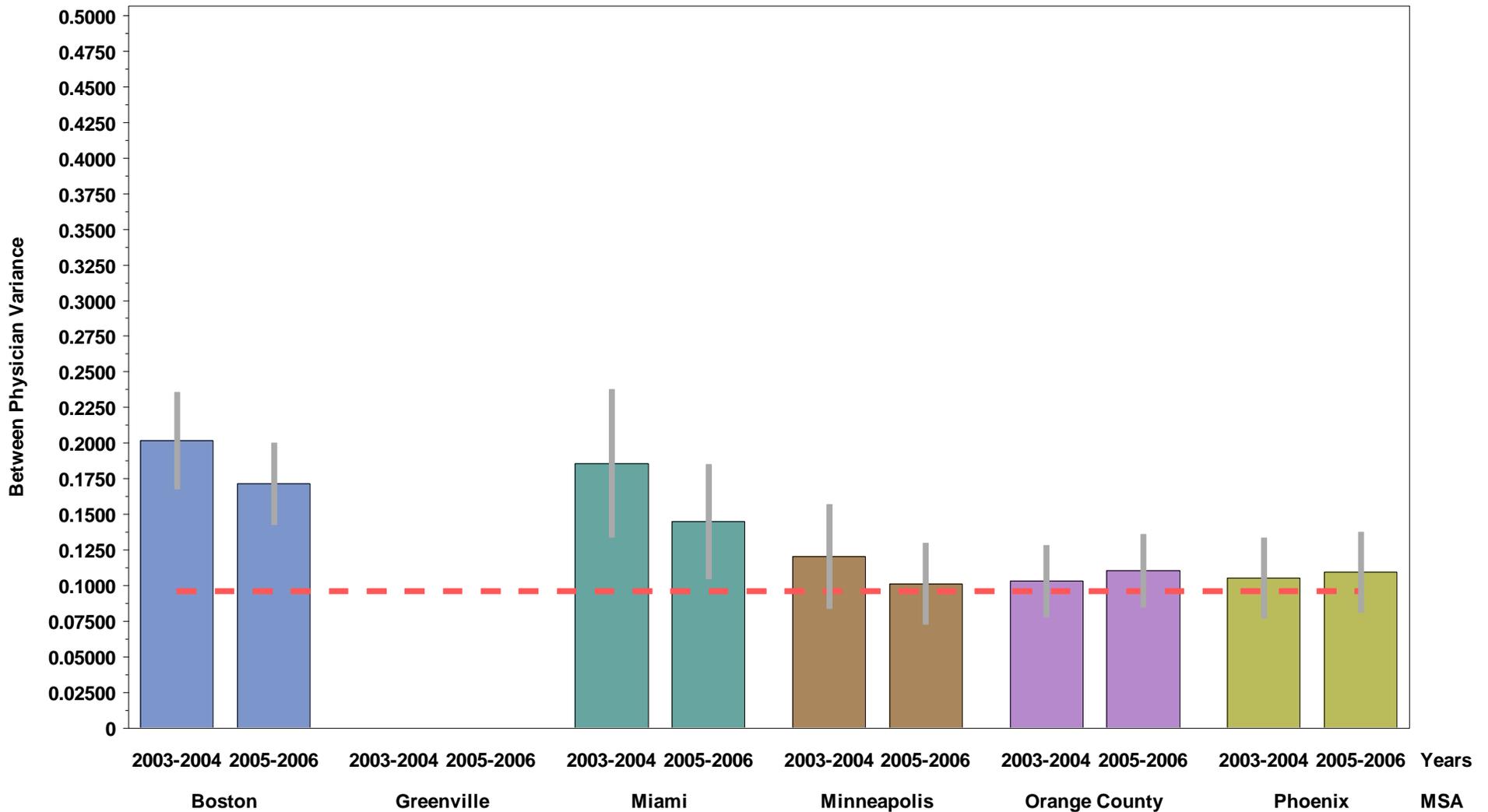
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Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

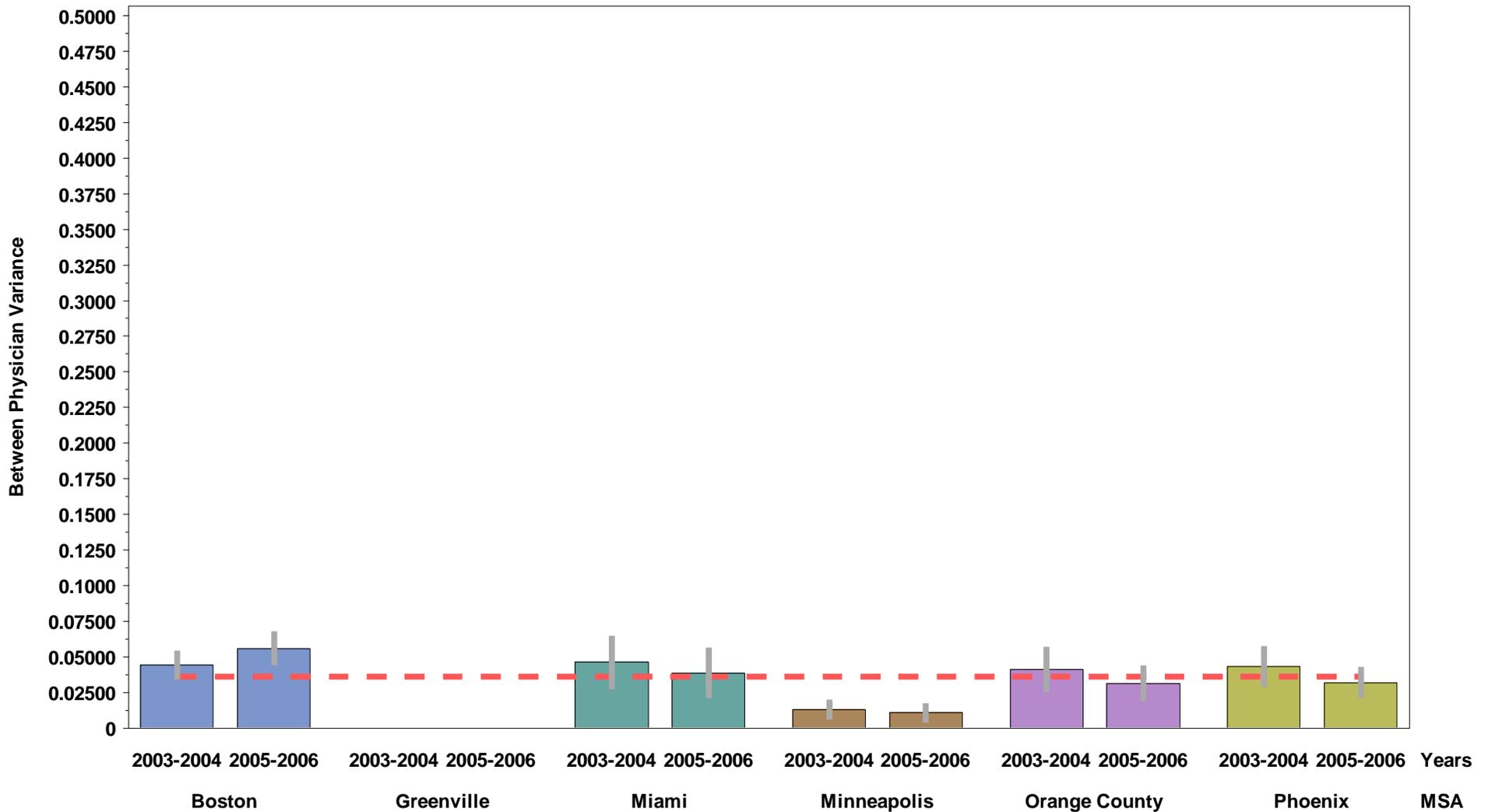
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Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

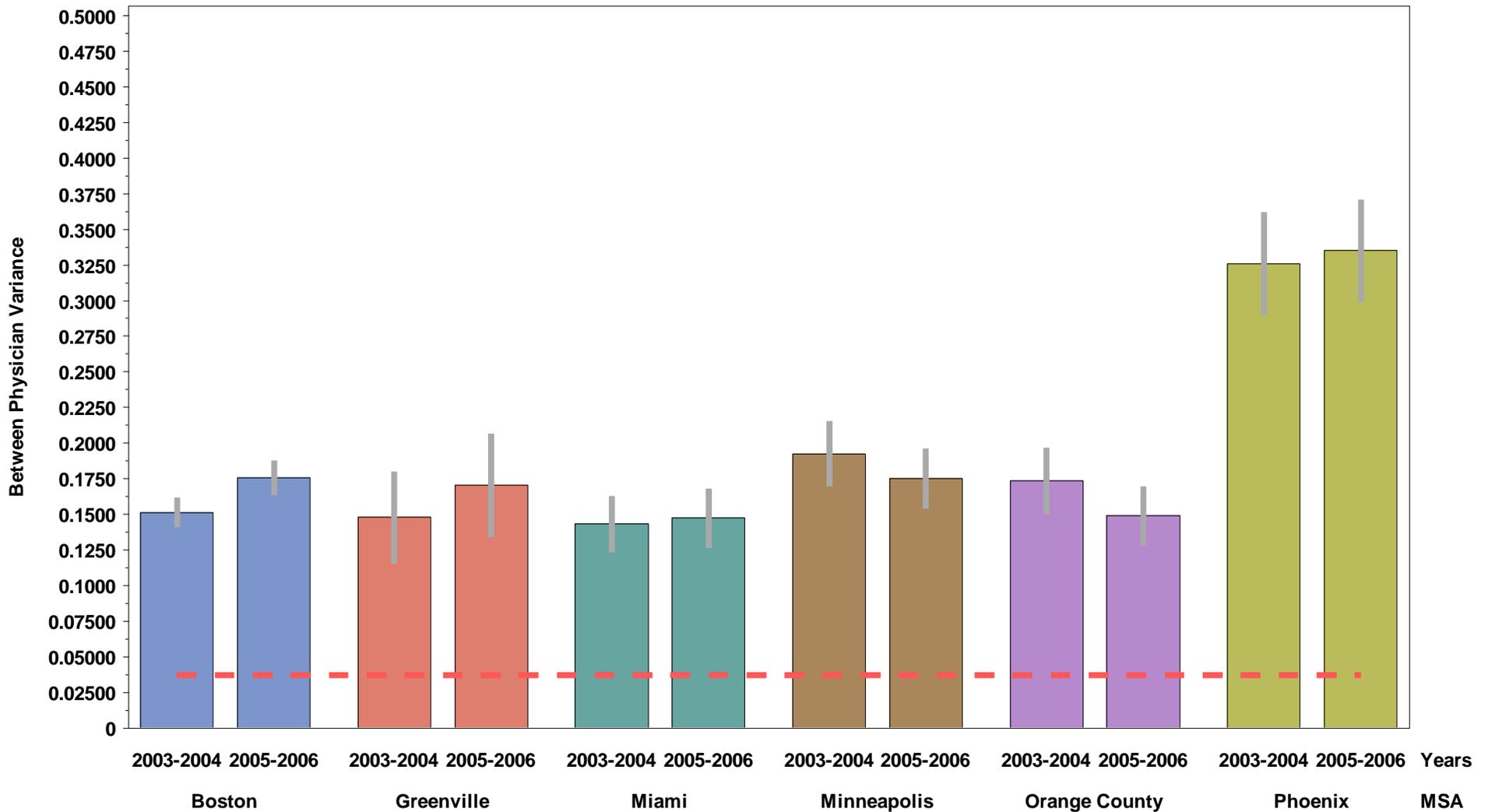
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Vertical gray bars indicate 95 % confidence intervals.  
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 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

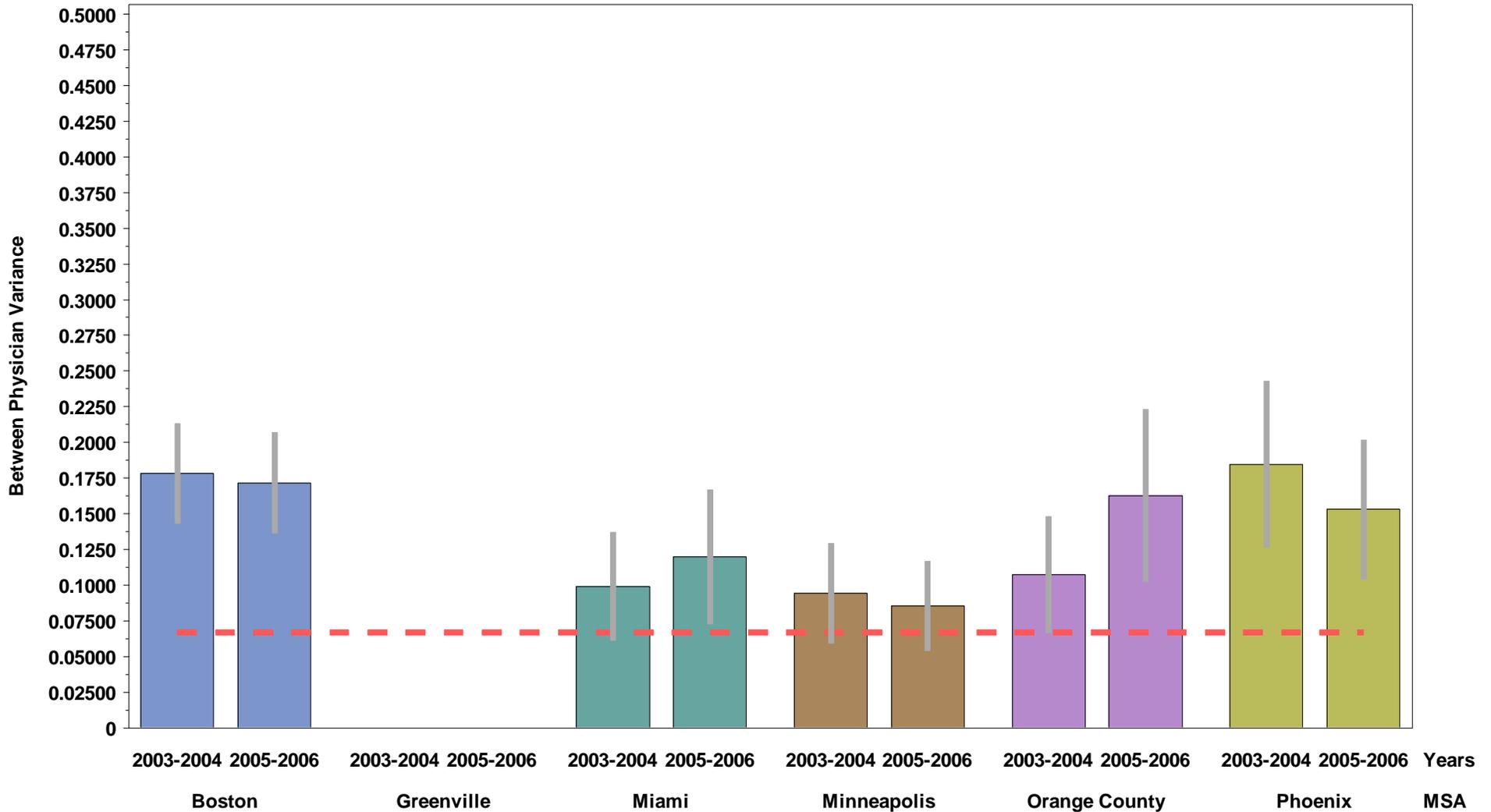
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Vertical gray bars indicate 95 % confidence intervals.  
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# Physician-to-Physician Variance Estimates for Physician Medicare Scores

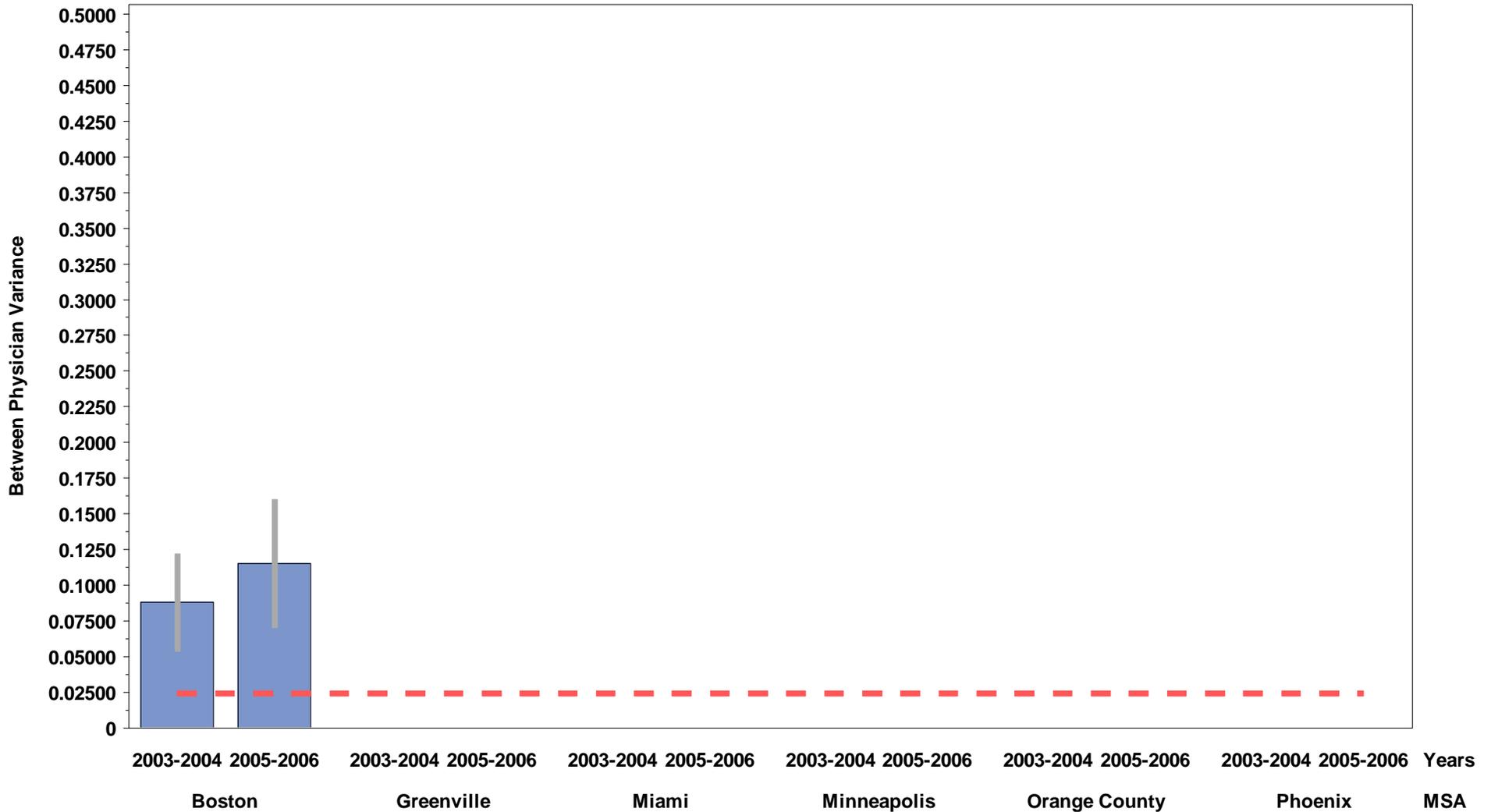
Specialty Group=Neurology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

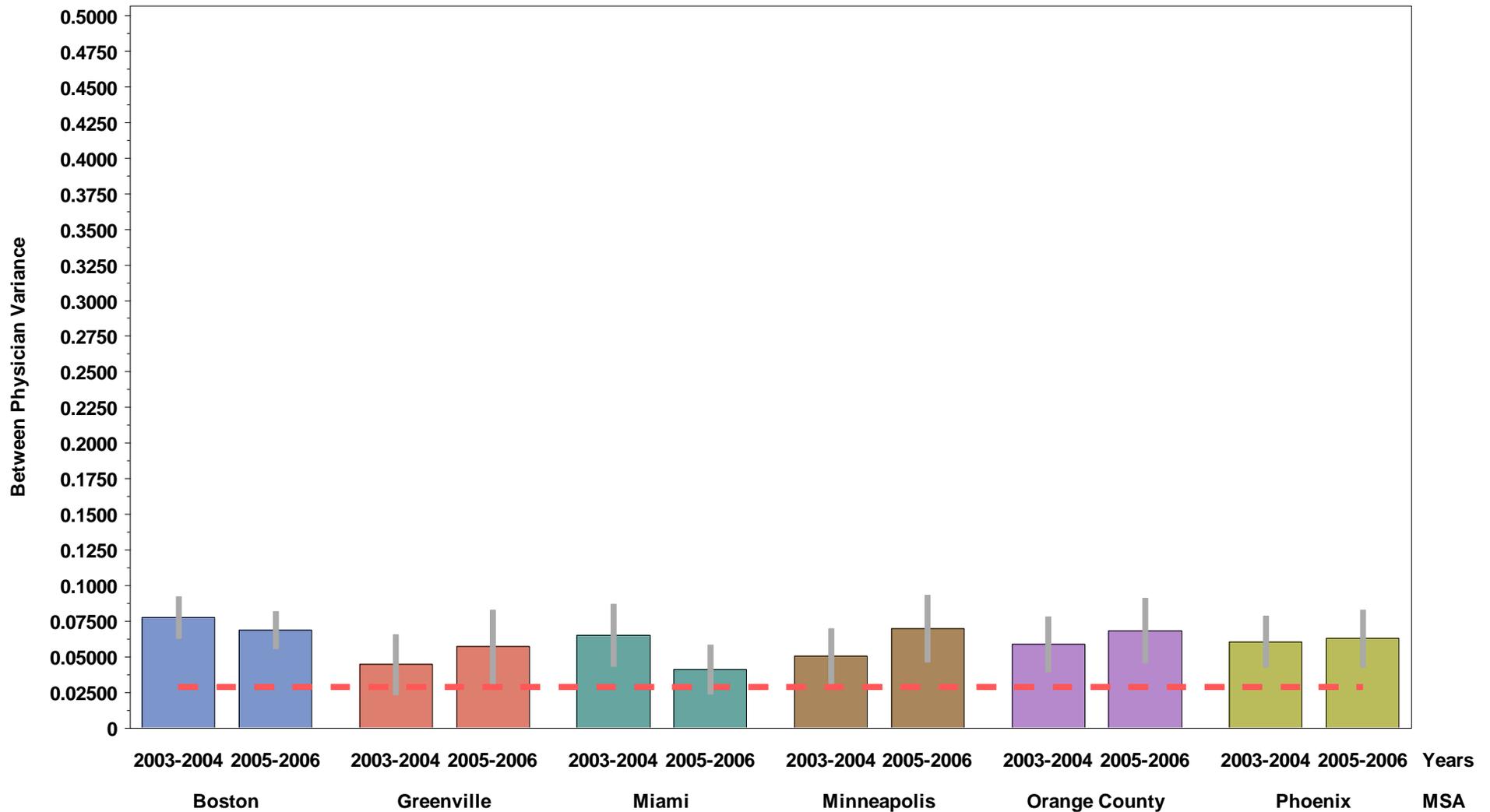
Specialty Group=Neurosurgery



Vertical gray bars indicate 95 % confidence intervals.  
Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

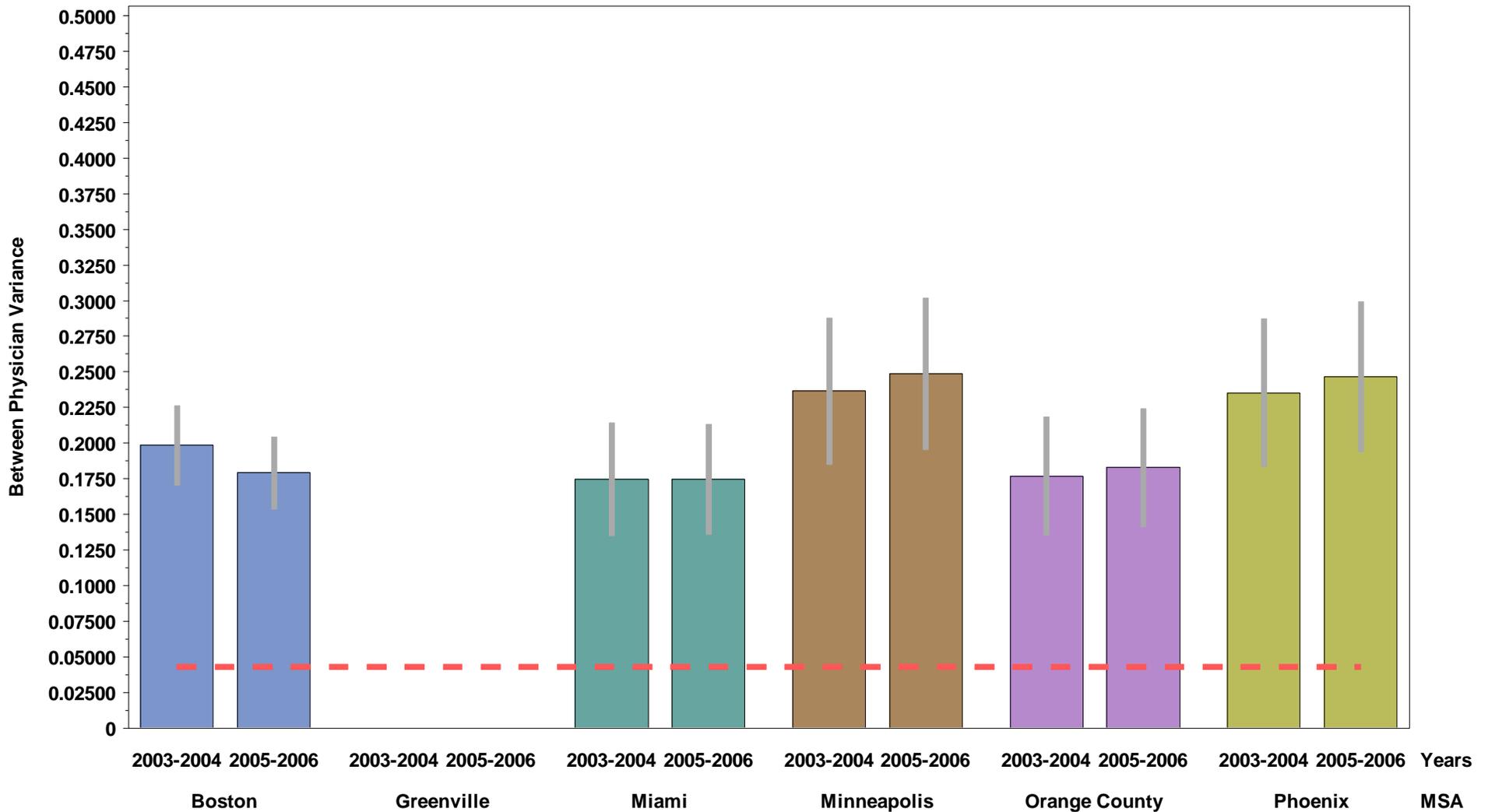
Specialty Group=Obstetrics/gynecology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

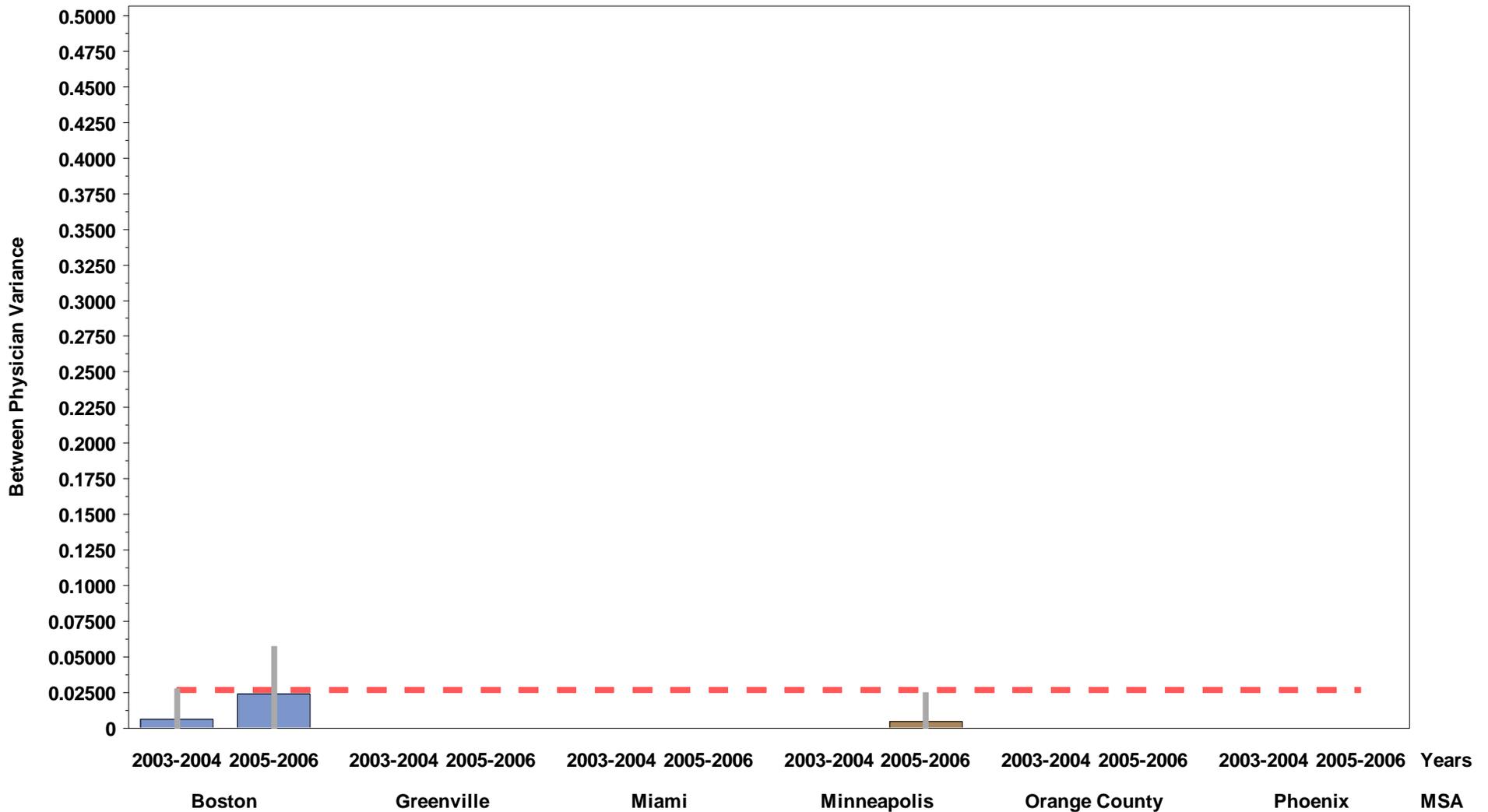
Specialty Group=Ophthalmology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

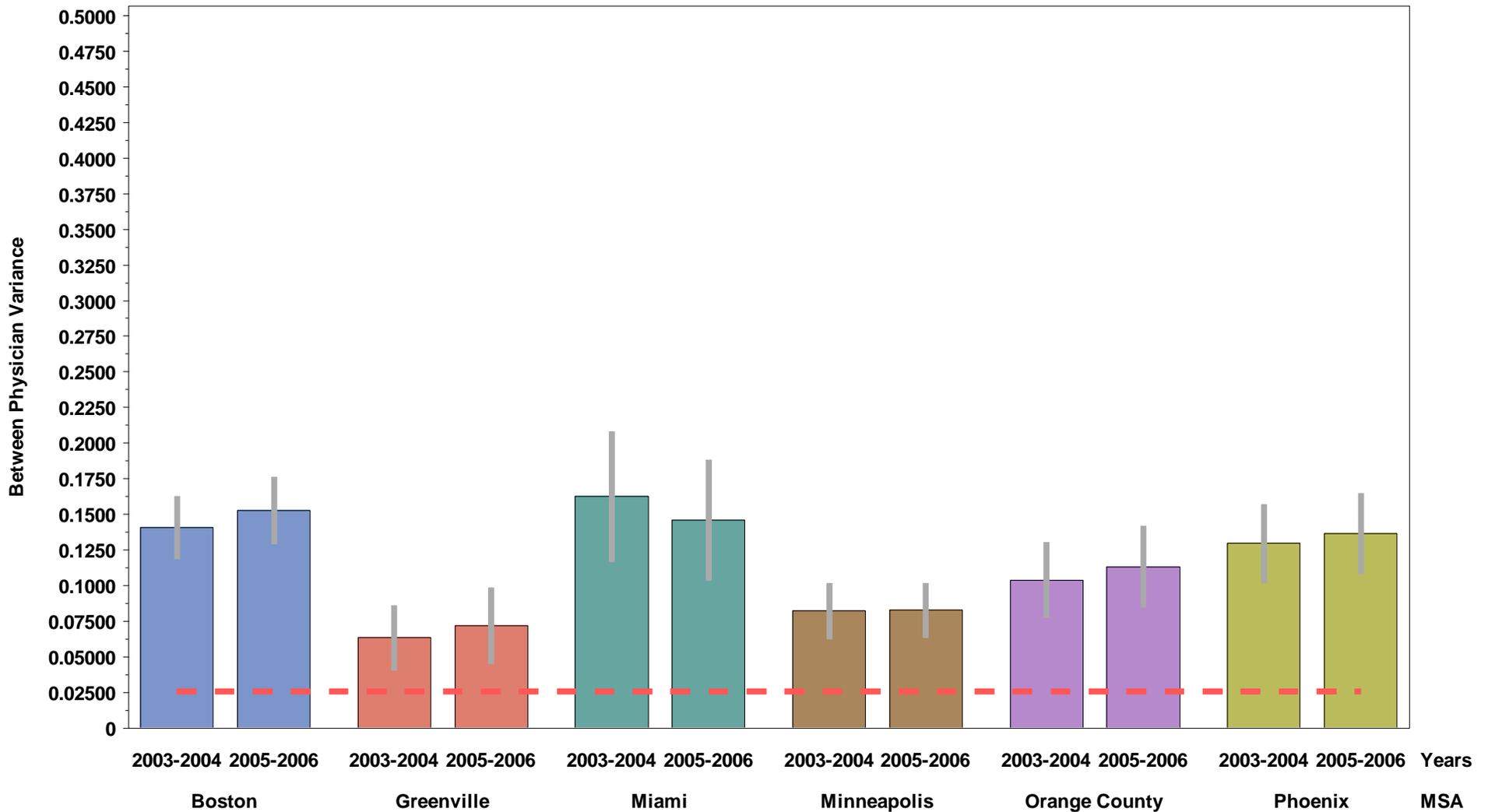
Specialty Group=Oral/Maxillofacial surgery



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

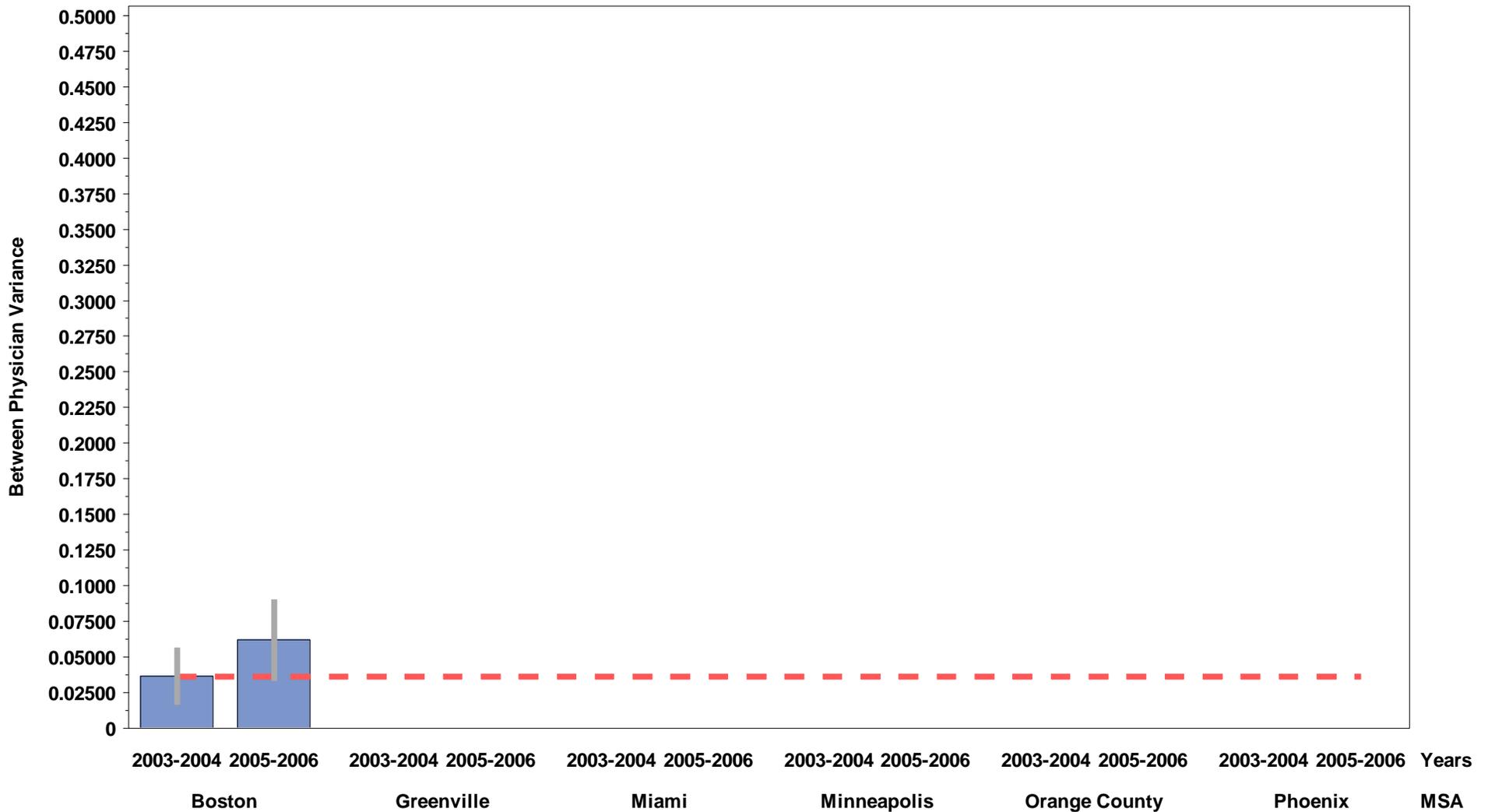
Specialty Group=Orthopedic surgery



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

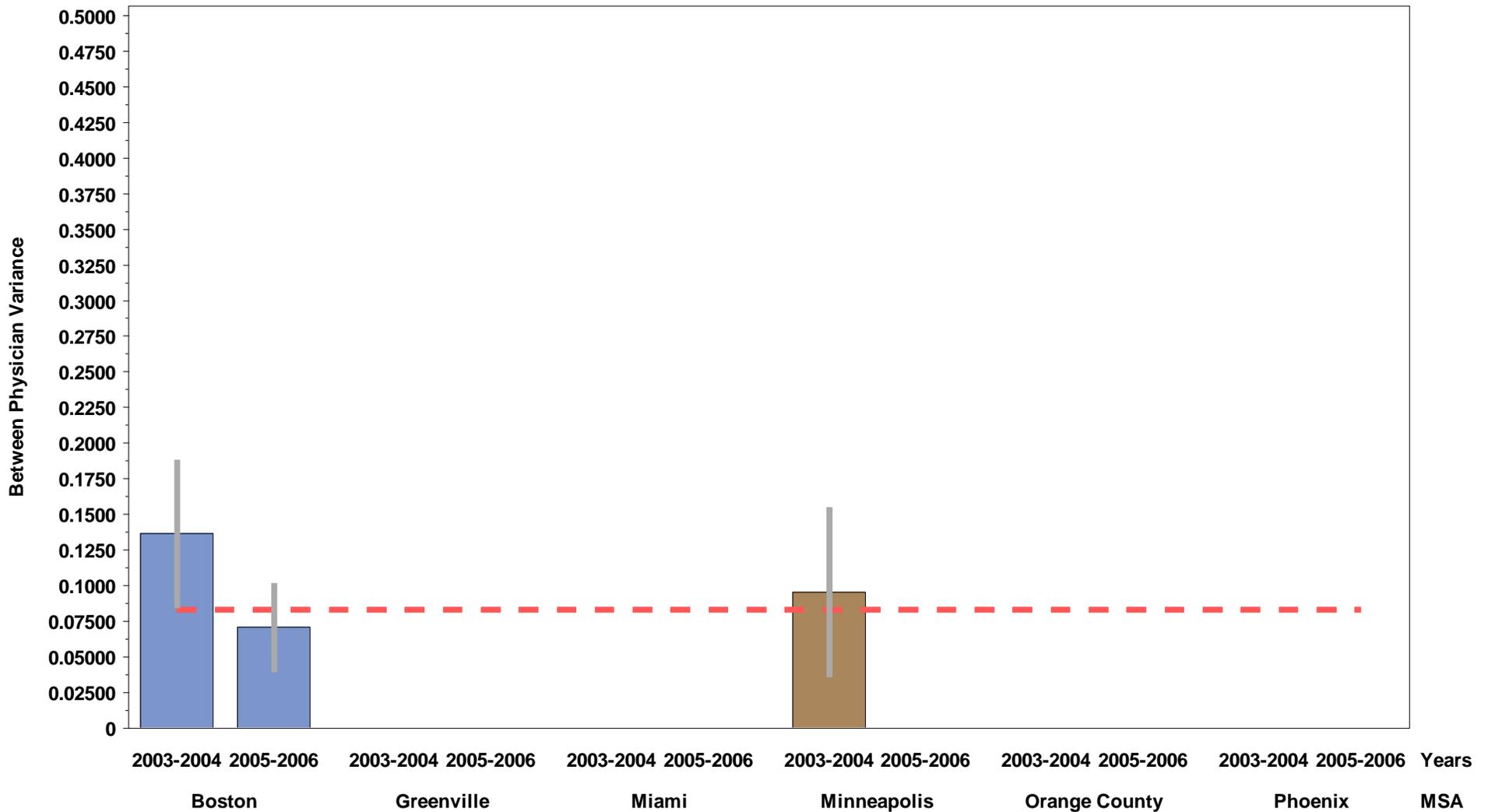
Specialty Group=Plastic and reconstructive surgery



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

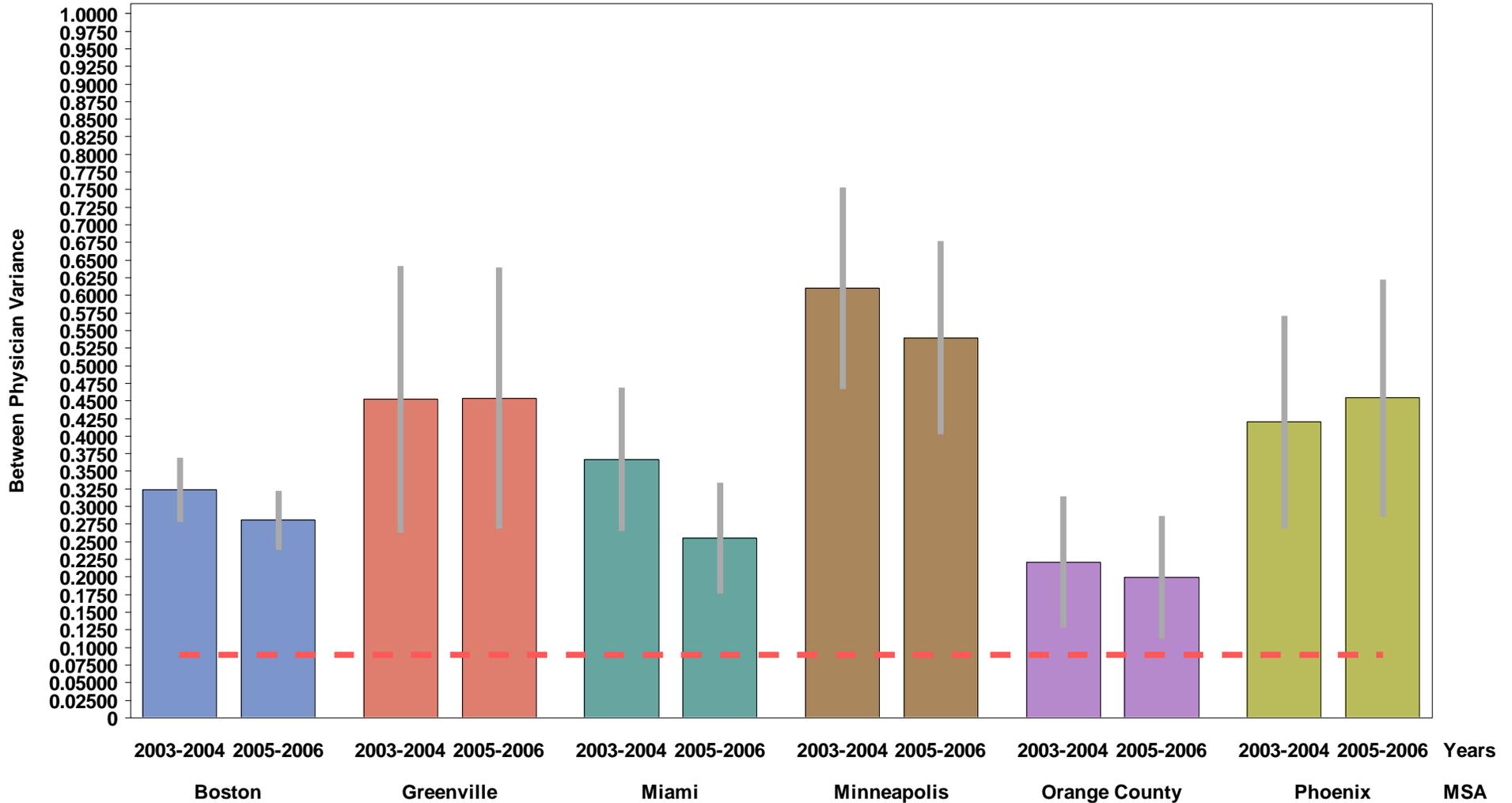
Specialty Group=Physical medicine and rehabilitation



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

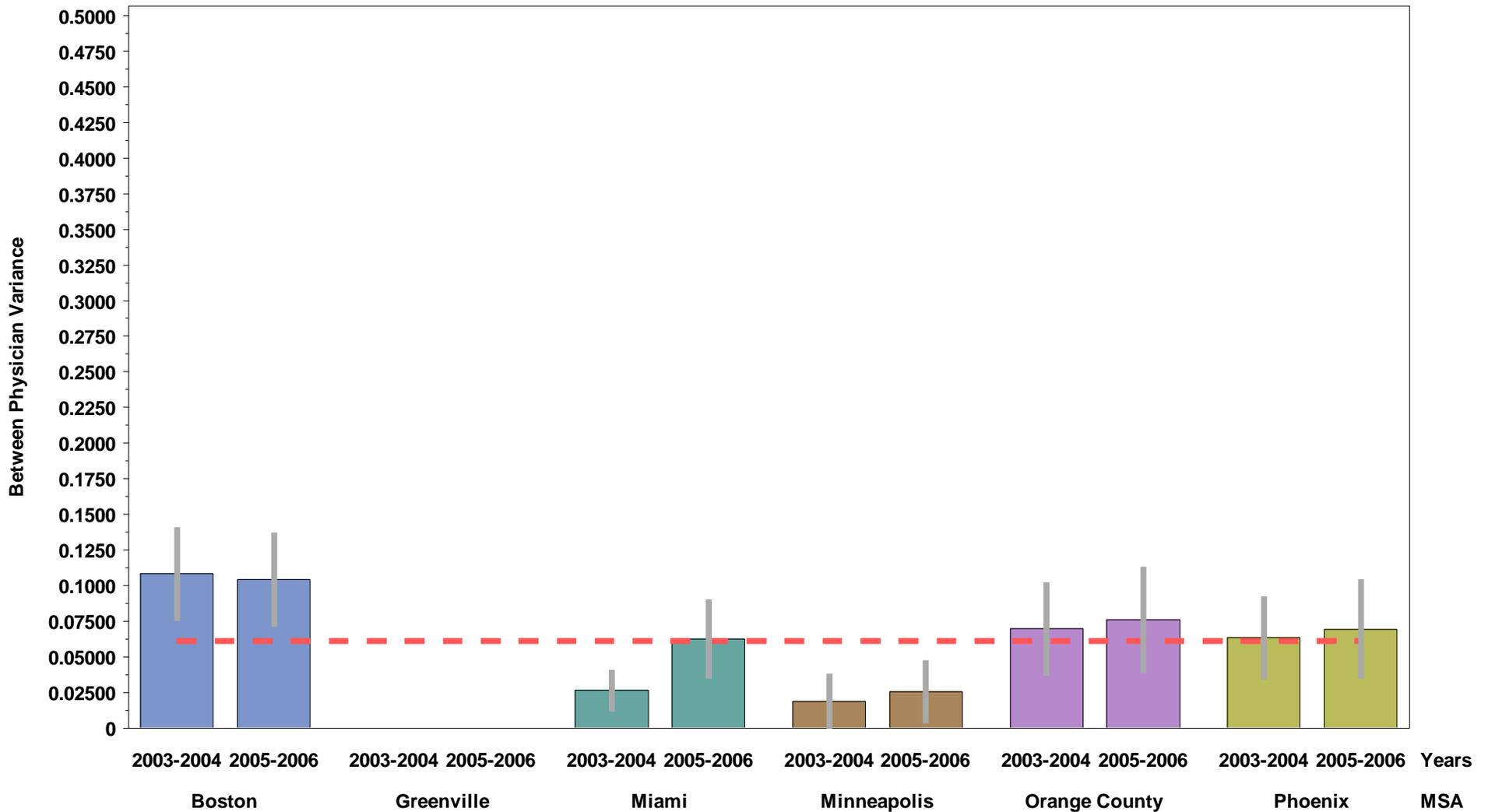
(Note: change in scale on vertical axis)  
Specialty Group=Psychiatry



Vertical gray bars indicate 95 % confidence intervals.  
Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

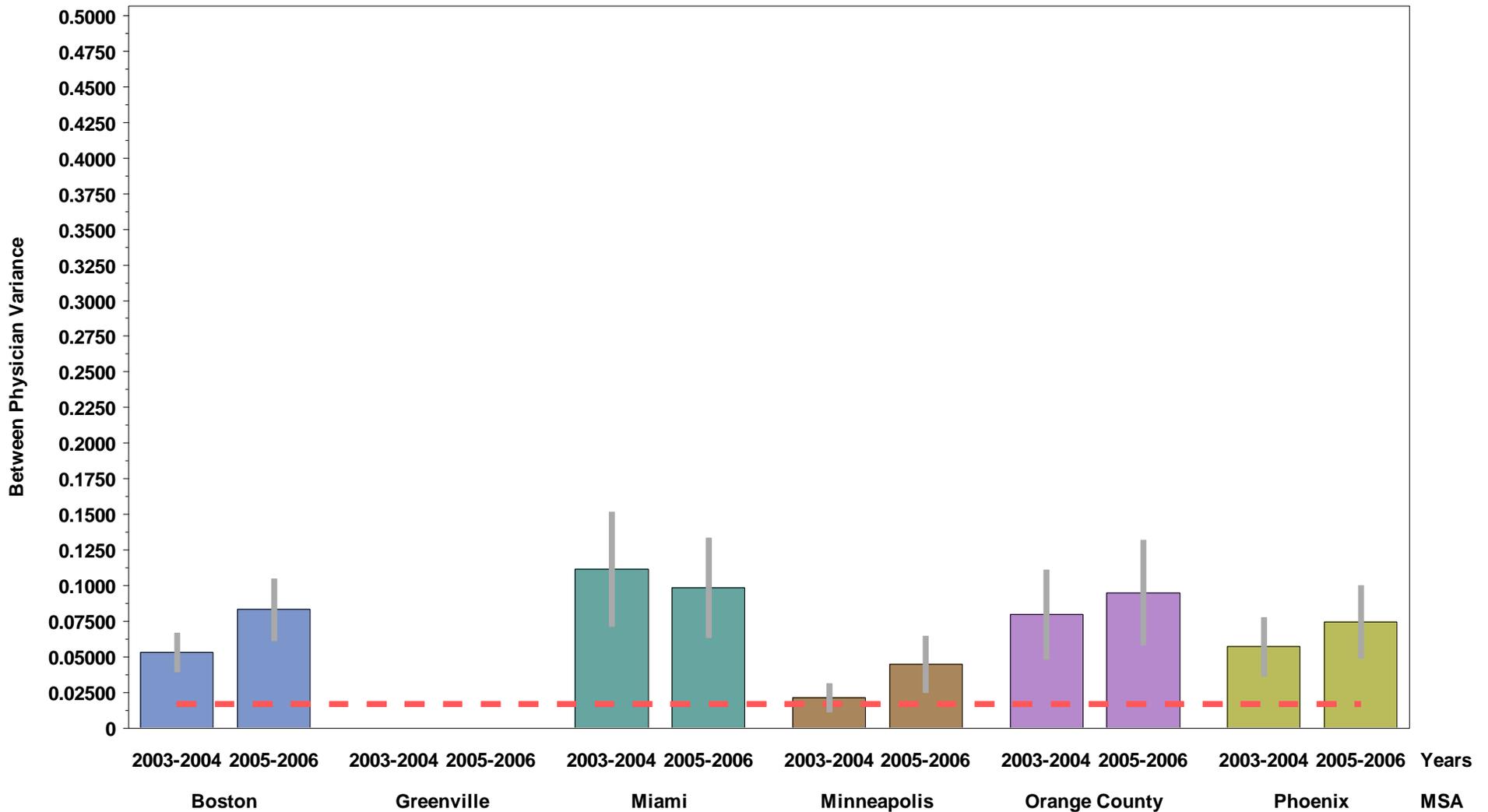
Specialty Group=Pulmonary disease



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

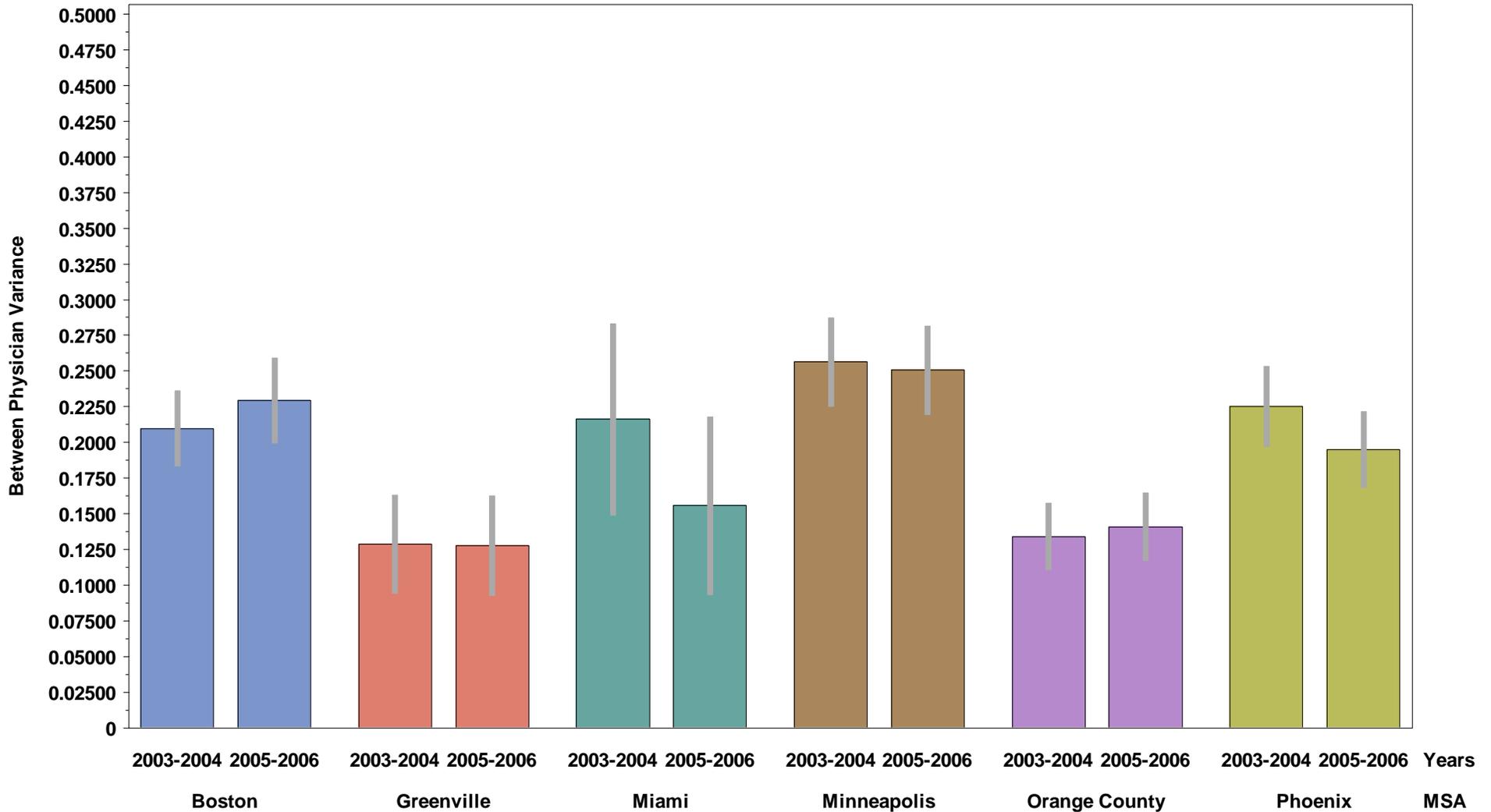
Specialty Group=Urology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

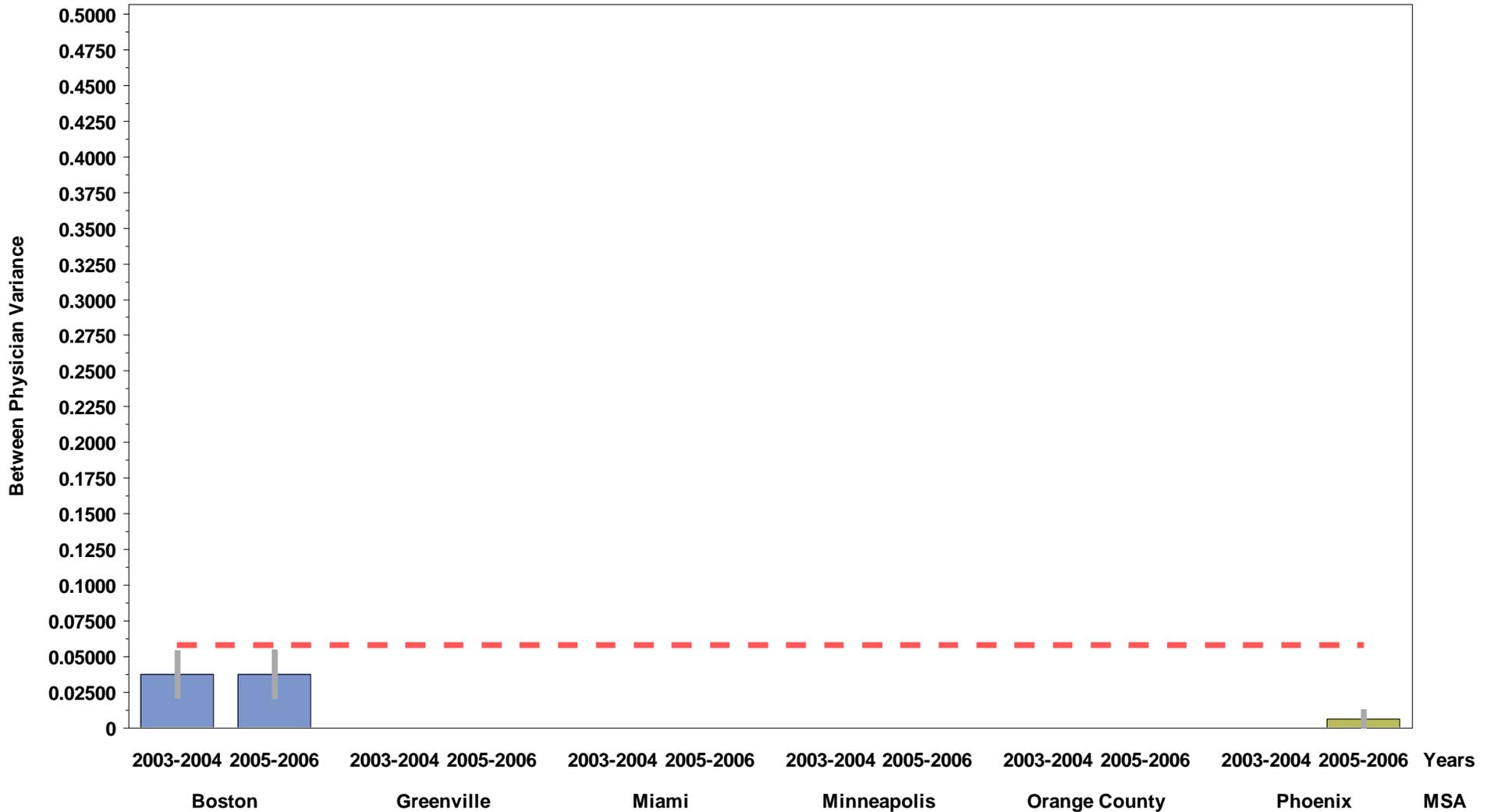
Specialty Group=Chiropractic



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

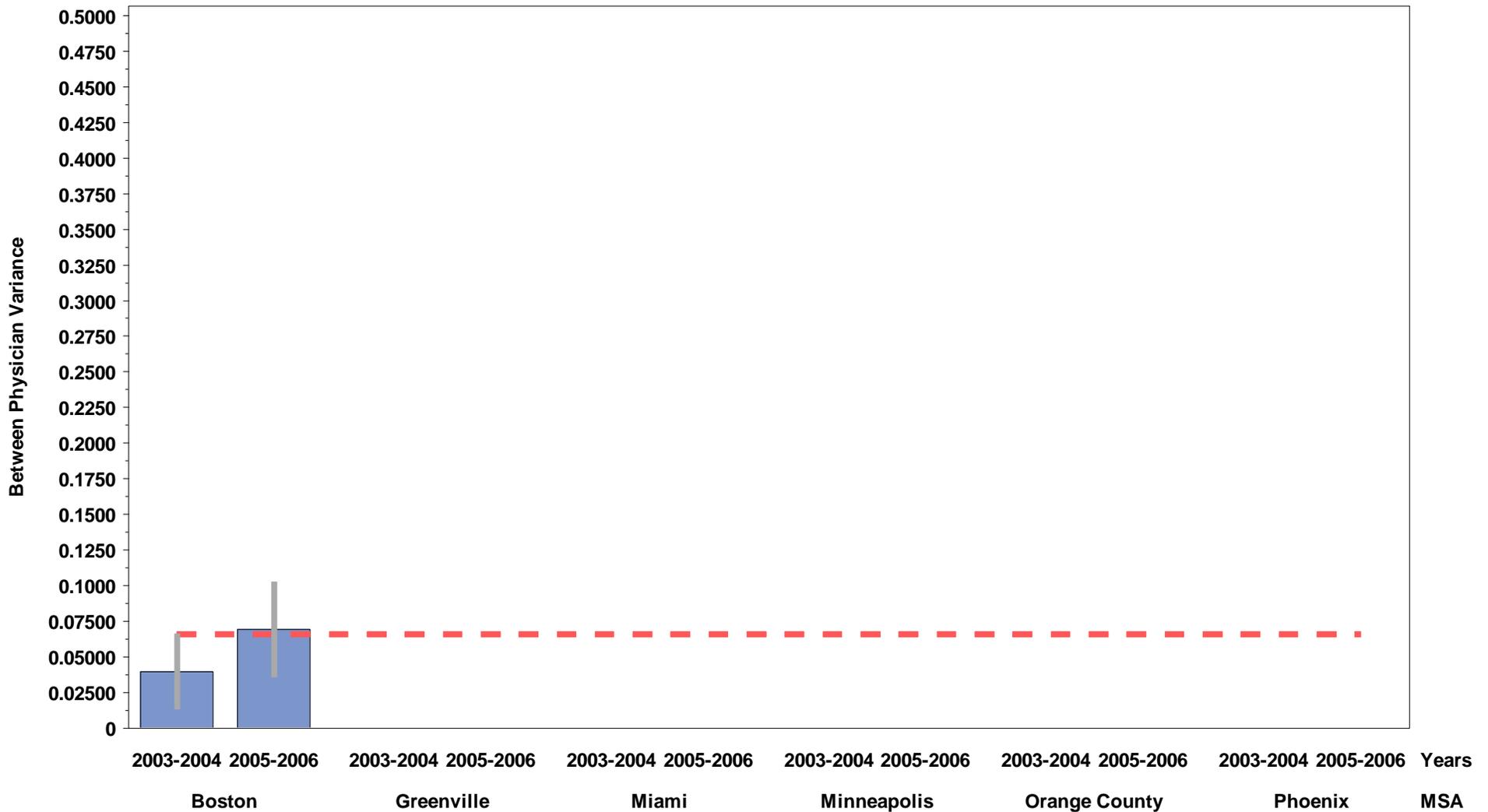
Specialty Group=Nephrology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

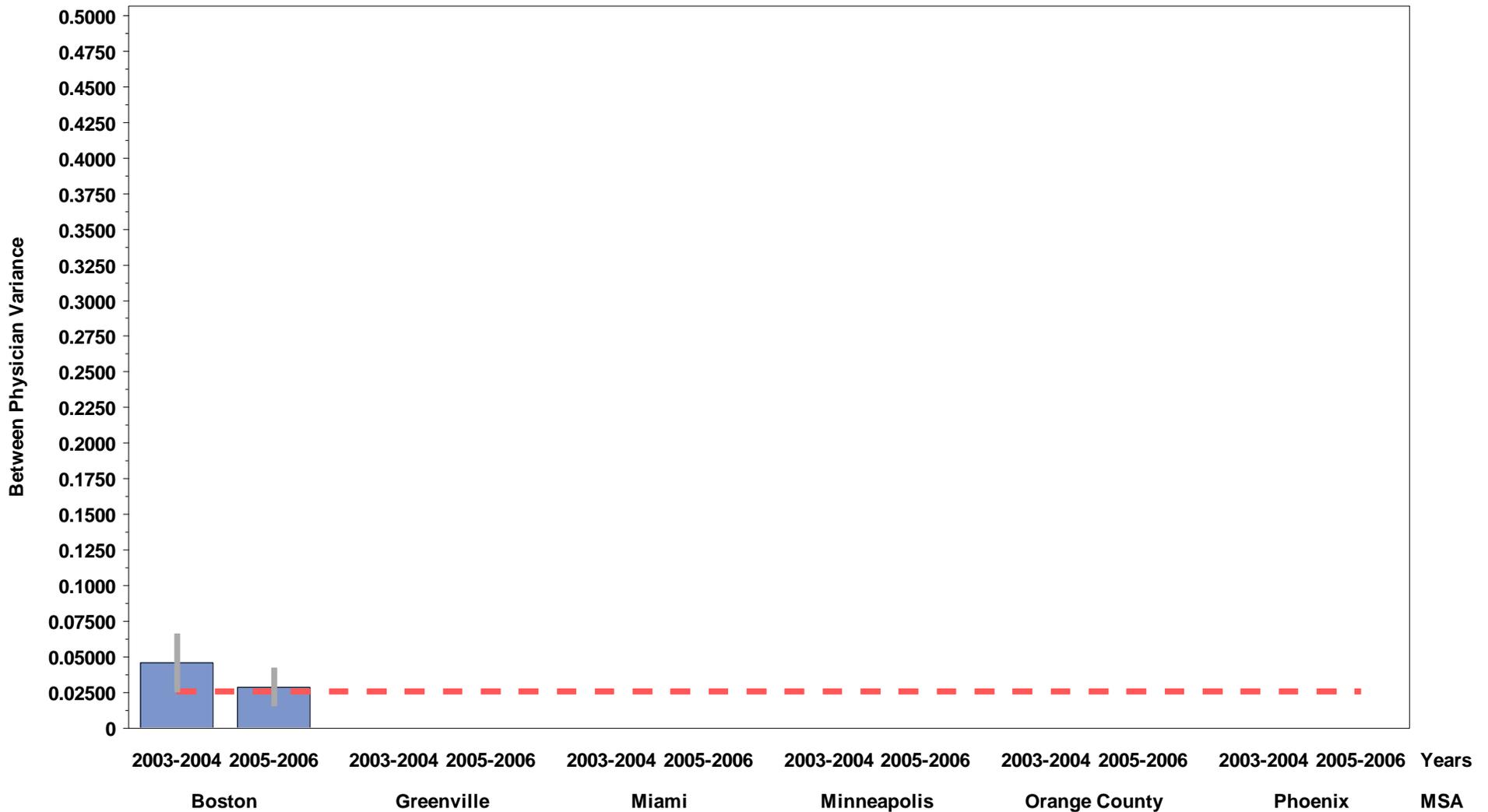
Specialty Group=Infectious disease



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

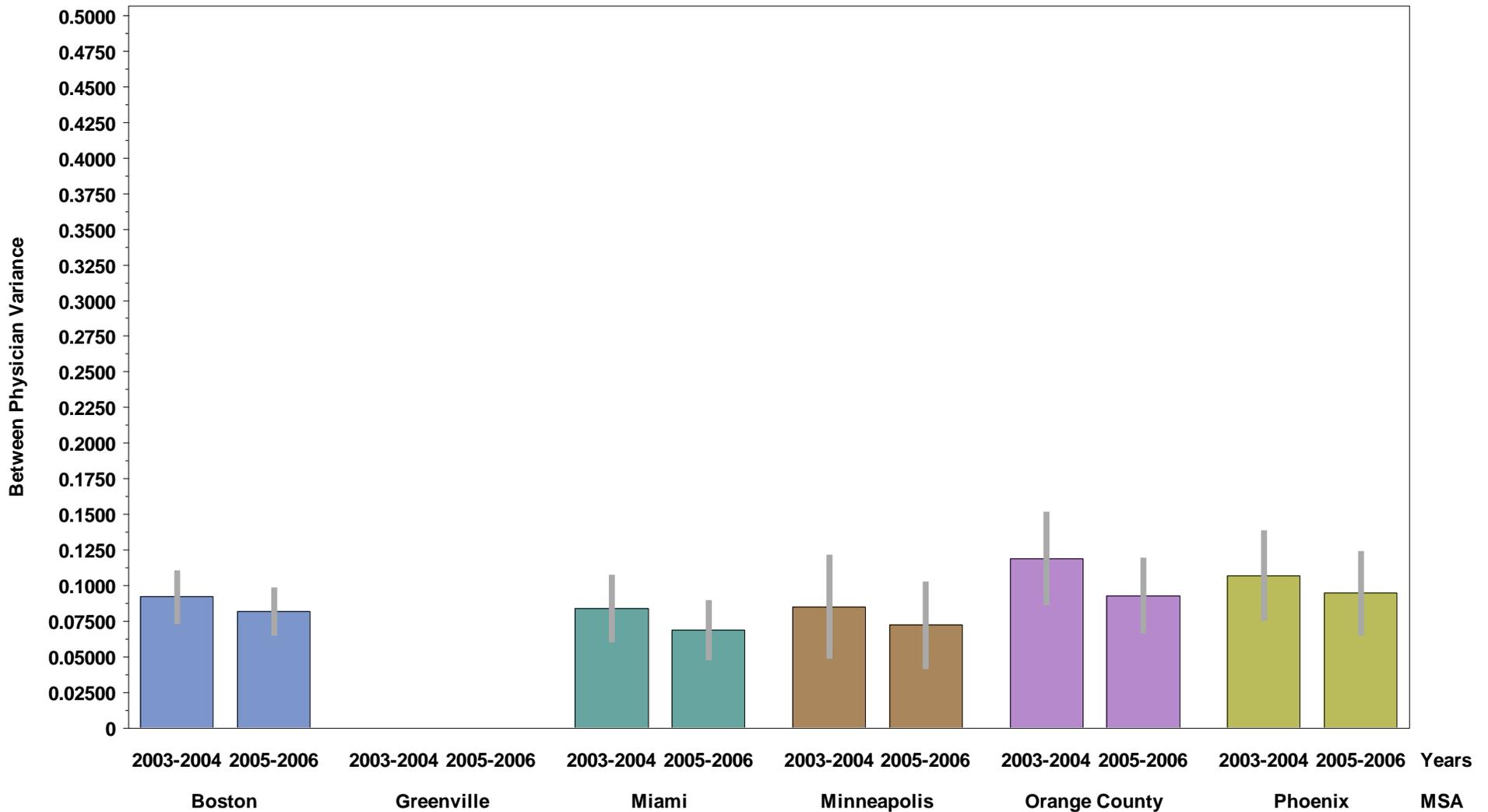
Specialty Group=Endocrinology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

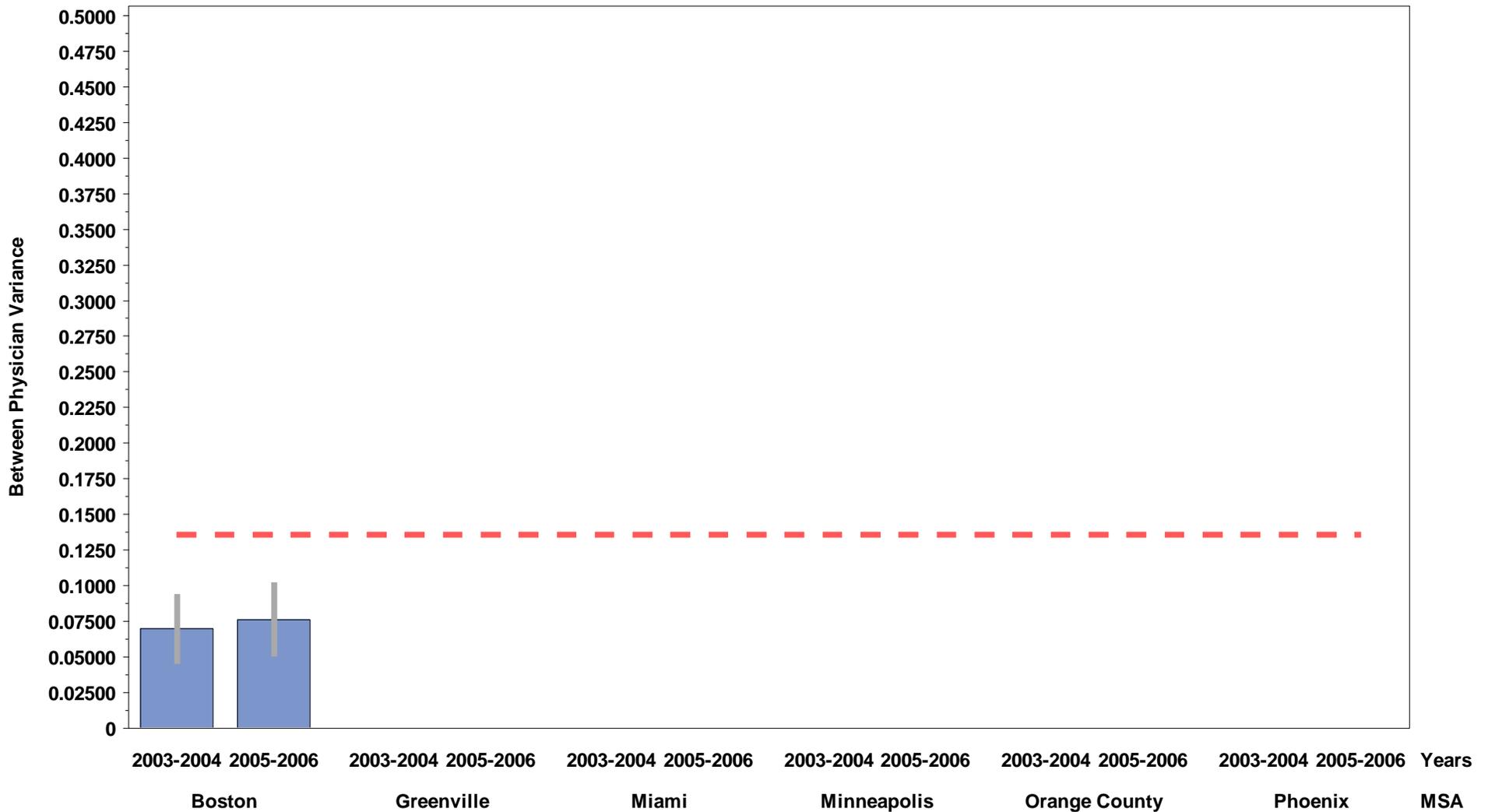
Specialty Group=Podiatry



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

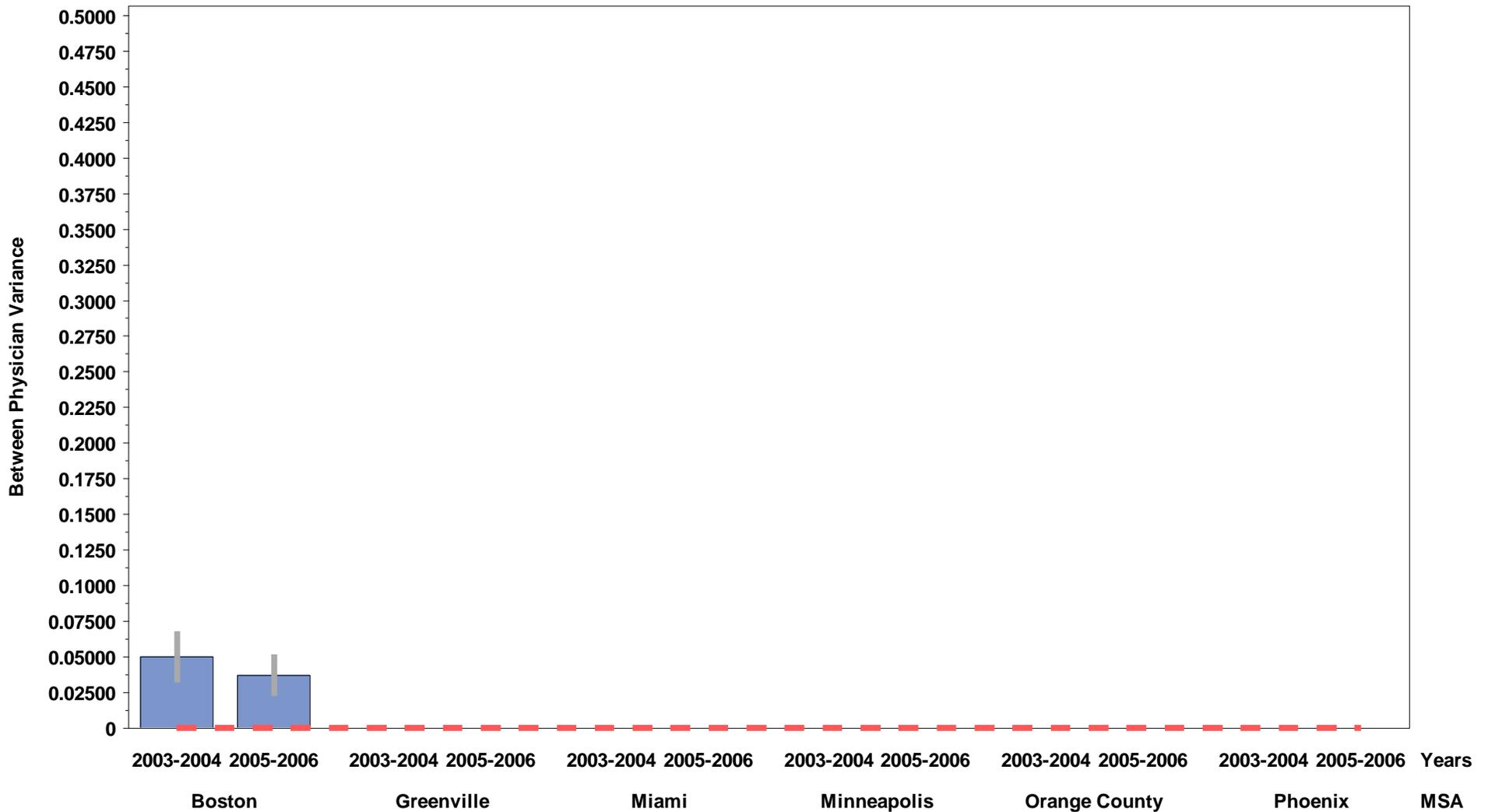
Specialty Group=Rheumatology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

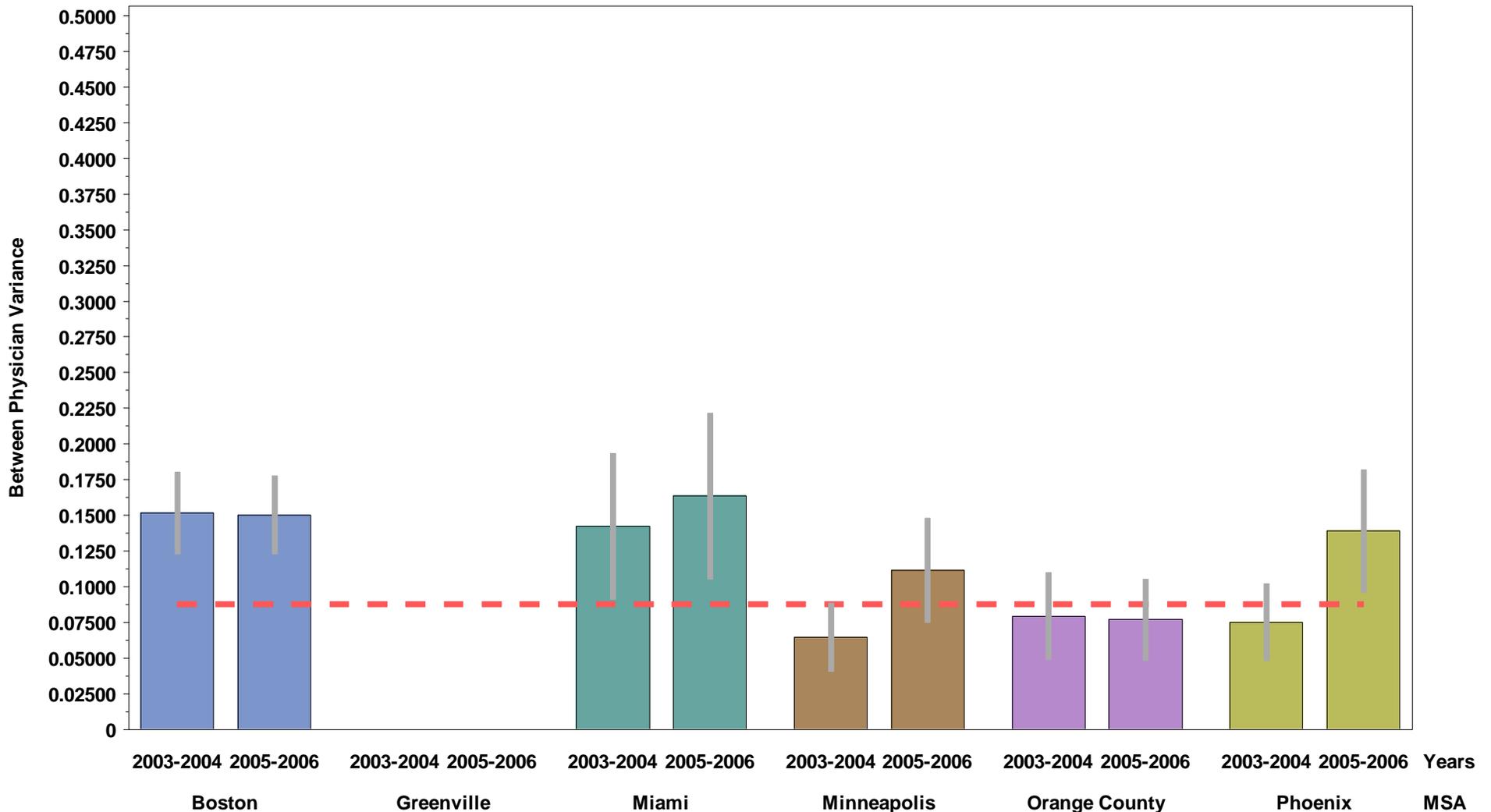
Specialty Group=Cardiothoracic surgery



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

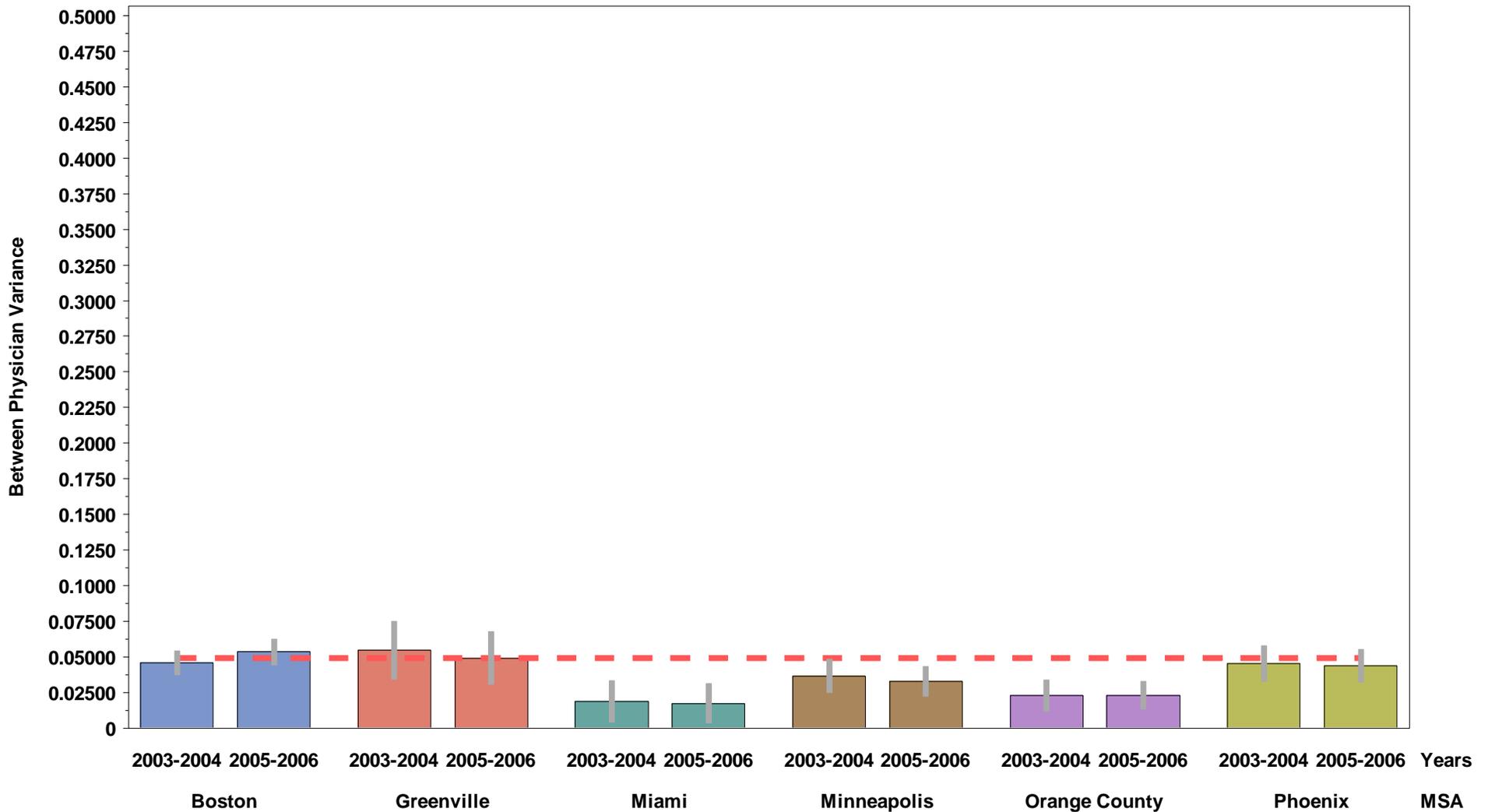
Specialty Group=Hematology/oncology



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# Physician-to-Physician Variance Estimates for Physician Medicare Scores

Specialty Group=Emergency medicine



Vertical gray bars indicate 95 % confidence intervals.  
 Red dashed line marks the RAND estimate for Massachusetts 2004-2005 commercial claims data.  
 Missing bars had fewer than 75 physicians in the specialty for that Period and MSA.

# APPENDIX B - RELIABILITY THRESHOLD TABLES

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**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	7,211	7,097	50.4	49.6	354,476	4,484,021	7.3	92.7	\$457,014,197	\$4,785,473,367	8.7	91.3
		Log	4,131	10177	28.9	71.1	35,097	4,803,400	0.7	99.3	\$124,931,604	\$5,117,555,960	2.4	97.6
	80%	Basic	8,742	5,566	61.1	38.9	709,580	4,128,917	14.7	85.3	\$856,646,243	\$4,385,841,321	16.3	83.7
		Log	5,114	9,194	35.7	64.3	67,986	4,770,511	1.4	98.6	\$242,347,821	\$5,000,139,743	4.6	95.4
	90%	Basic	11070	3,238	77.4	22.6	1,630,752	3,207,745	33.7	66.3	\$1,848,789,872	\$3,393,697,692	35.3	64.7
		Log	6,798	7,510	47.5	52.5	183,484	4,655,013	3.8	96.2	\$610,369,963	\$4,632,117,601	11.6	88.4
<b>Specialty Group</b>	---	Score												
<b>Allergy/immunology</b>	70%	Basic	51	34	60.0	40.0	4,096	14,618	21.9	78.1	\$2,345,264	\$9,765,502	19.4	80.6
		Log	24	61	28.2	71.8	314	18,400	1.7	98.3	\$194,647	\$11,916,119	1.6	98.4
	80%	Basic	59	26	69.4	30.6	5,515	13,199	29.5	70.5	\$2,875,452	\$9,235,314	23.7	76.3
		Log	34	51	40.0	60.0	1,047	17,667	5.6	94.4	\$609,642	\$11,501,124	5.0	95.0
	90%	Basic	77	8	90.6	9.4	13,158	5,556	70.3	29.7	\$9,656,970	\$2,453,796	79.7	20.3
		Log	50	35	58.8	41.2	3,062	15,652	16.4	83.6	\$1,660,639	\$10,450,127	13.7	86.3

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Cardiology	70%	Basic	178	495	26.4	73.6	2,102	328,295	0.6	99.4	\$4,455,995	\$605,185,002	0.7	99.3
		Log	136	537	20.2	79.8	860	329,537	0.3	99.7	\$4,569,108	\$605,071,889	0.7	99.3
	80%	Basic	237	436	35.2	64.8	5,259	325,138	1.6	98.4	\$13,585,493	\$596,055,504	2.2	97.8
		Log	165	508	24.5	75.5	1,481	328,916	0.4	99.6	\$8,889,813	\$600,751,184	1.5	98.5
	90%	Basic	313	360	46.5	53.5	13,948	316,449	4.2	95.8	\$33,499,921	\$576,141,076	5.5	94.5
		Log	225	448	33.4	66.6	4,002	326,395	1.2	98.8	\$24,352,901	\$585,288,096	4.0	96.0
Cardiothoracic surgery	70%	Basic	42	69	37.8	62.2	835	10,301	7.5	92.5	\$9,490,683	\$166,017,075	5.4	94.6
		Log	39	72	35.1	64.9	378	10,758	3.4	96.6	\$7,991,360	\$167,516,398	4.6	95.4
	80%	Basic	51	60	45.9	54.1	1,639	9,497	14.7	85.3	\$19,410,097	\$156,097,661	11.1	88.9
		Log	42	69	37.8	62.2	516	10,620	4.6	95.4	\$11,943,887	\$163,563,871	6.8	93.2
	90%	Basic	79	32	71.2	28.8	6,902	4,234	62.0	38.0	\$67,830,042	\$107,677,716	38.6	61.4
		Log	79	32	71.2	28.8	4,189	6,947	37.6	62.4	\$96,951,966	\$78,555,792	55.2	44.8
Chiropractic	70%	Basic	267	546	32.8	67.2	1,691	41,406	3.9	96.1	\$746,998	\$17,335,853	4.1	95.9
		Log	255	558	31.4	68.6	1,304	41,793	3.0	97.0	\$563,839	\$17,519,012	3.1	96.9
	80%	Basic	367	446	45.1	54.9	4,016	39,081	9.3	90.7	\$1,758,698	\$16,324,153	9.7	90.3
		Log	350	463	43.1	56.9	3,194	39,903	7.4	92.6	\$1,327,294	\$16,755,557	7.3	92.7
	90%	Basic	557	256	68.5	31.5	11,822	31,275	27.4	72.6	\$5,472,456	\$12,610,395	30.3	69.7
		Log	546	267	67.2	32.8	10,842	32,255	25.2	74.8	\$4,890,570	\$13,192,281	27.0	73.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dermatology	70%	Basic	51	284	15.2	84.8	1,571	248,093	0.6	99.4	\$671,175	\$72,543,854	0.9	99.1
		Log	28	307	8.4	91.6	120	249,544	0.0	100.0	\$82,601	\$73,132,428	0.1	99.9
	80%	Basic	65	270	19.4	80.6	3,066	246,598	1.2	98.8	\$1,990,537	\$71,224,492	2.7	97.3
		Log	36	299	10.7	89.3	238	249,426	0.1	99.9	\$144,936	\$73,070,093	0.2	99.8
	90%	Basic	92	243	27.5	72.5	6,255	243,409	2.5	97.5	\$3,945,088	\$69,269,941	5.4	94.6
		Log	52	283	15.5	84.5	795	248,869	0.3	99.7	\$461,584	\$72,753,445	0.6	99.4
Emergency medicine	70%	Basic	426	238	64.2	35.8	41,418	89,460	31.6	68.4	\$46,255,713	\$92,874,366	33.2	66.8
		Log	181	483	27.3	72.7	2,216	128,662	1.7	98.3	\$2,385,750	\$136,744,329	1.7	98.3
	80%	Basic	586	78	88.3	11.7	91,767	39,111	70.1	29.9	\$102,088,935	\$37,041,144	73.4	26.6
		Log	220	444	33.1	66.9	4,511	126,367	3.4	96.6	\$4,961,497	\$134,168,582	3.6	96.4
	90%	Basic	659	5	99.2	0.8	125,214	5,664	95.7	4.3	\$136,164,302	\$2,965,777	97.9	2.1
		Log	324	340	48.8	51.2	16,170	114,708	12.4	87.6	\$18,321,786	\$120,808,293	13.2	86.8
Endocrinology	70%	Basic	120	40	75.0	25.0	12,481	25,831	32.6	67.4	\$9,945,399	\$15,330,186	39.3	60.7
		Log	50	110	31.3	68.8	619	37,693	1.6	98.4	\$586,495	\$24,689,090	2.3	97.7
	80%	Basic	132	28	82.5	17.5	16,384	21,928	42.8	57.2	\$12,134,526	\$13,141,059	48.0	52.0
		Log	67	93	41.9	58.1	1,297	37,015	3.4	96.6	\$925,199	\$24,350,386	3.7	96.3
	90%	Basic	156	4	97.5	2.5	35,725	2,587	93.2	6.8	\$24,171,185	\$1,104,400	95.6	4.4
		Log	88	72	55.0	45.0	3,175	35,137	8.3	91.7	\$2,281,430	\$22,994,155	9.0	91.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	727	348	67.6	32.4	59,036	293,051	16.8	83.2	\$36,754,830	\$156,804,871	19.0	81.0
		Log	350	725	32.6	67.4	2,191	349,896	0.6	99.4	\$4,599,164	\$188,960,537	2.4	97.6
	80%	Basic	844	231	78.5	21.5	106,673	245,414	30.3	69.7	\$63,798,281	\$129,761,420	33.0	67.0
		Log	403	672	37.5	62.5	3,495	348,592	1.0	99.0	\$6,043,190	\$187,516,511	3.1	96.9
	90%	Basic	1,019	56	94.8	5.2	255,963	96,124	72.7	27.3	\$138,113,021	\$55,446,680	71.4	28.6
		Log	487	588	45.3	54.7	7,783	344,304	2.2	97.8	\$9,499,552	\$184,060,149	4.9	95.1
Gastroenterology	70%	Basic	150	203	42.5	57.5	9,901	149,773	6.2	93.8	\$10,809,114	\$136,640,731	7.3	92.7
		Log	84	269	23.8	76.2	1,078	158,596	0.7	99.3	\$1,786,823	\$145,663,022	1.2	98.8
	80%	Basic	196	157	55.5	44.5	23,774	135,900	14.9	85.1	\$25,338,149	\$122,111,696	17.2	82.8
		Log	97	256	27.5	72.5	1,844	157,830	1.2	98.8	\$2,731,751	\$144,718,094	1.9	98.1
	90%	Basic	291	62	82.4	17.6	83,255	76,419	52.1	47.9	\$80,933,050	\$66,516,795	54.9	45.1
		Log	136	217	38.5	61.5	6,082	153,592	3.8	96.2	\$7,603,702	\$139,846,143	5.2	94.8
General surgery	70%	Basic	257	305	45.7	54.3	8,710	104,112	7.7	92.3	\$31,169,256	\$346,566,764	8.3	91.7
		Log	189	373	33.6	66.4	2,094	110,728	1.9	98.1	\$15,501,961	\$362,234,059	4.1	95.9
	80%	Basic	311	251	55.3	44.7	16,905	95,917	15.0	85.0	\$54,566,434	\$323,169,586	14.4	85.6
		Log	233	329	41.5	58.5	4,532	108,290	4.0	96.0	\$33,856,270	\$343,879,750	9.0	91.0
	90%	Basic	439	123	78.1	21.9	49,188	63,634	43.6	56.4	\$160,460,085	\$217,275,935	42.5	57.5
		Log	313	249	55.7	44.3	13,148	99,674	11.7	88.3	\$74,633,660	\$303,102,360	19.8	80.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	201	240	45.6	54.4	3,294	75,882	4.2	95.8	\$14,754,566	\$255,459,117	5.5	94.5
		Log	163	278	37.0	63.0	1,376	77,800	1.7	98.3	\$10,273,038	\$259,940,645	3.8	96.2
	80%	Basic	250	191	56.7	43.3	6,180	72,996	7.8	92.2	\$30,440,139	\$239,773,544	11.3	88.7
		Log	208	233	47.2	52.8	3,029	76,147	3.8	96.2	\$22,998,834	\$247,214,849	8.5	91.5
	90%	Basic	336	105	76.2	23.8	17,874	61,302	22.6	77.4	\$78,016,388	\$192,197,295	28.9	71.1
		Log	281	160	63.7	36.3	8,082	71,094	10.2	89.8	\$50,616,074	\$219,597,609	18.7	81.3
Infectious disease	70%	Basic	159	15	91.4	8.6	10,210	18,052	36.1	63.9	\$22,132,499	\$16,704,918	57.0	43.0
		Log	96	78	55.2	44.8	1,052	27,210	3.7	96.3	\$4,463,063	\$34,374,354	11.5	88.5
	80%	Basic	167	7	96.0	4.0	17,700	10,562	62.6	37.4	\$28,202,555	\$10,634,862	72.6	27.4
		Log	121	53	69.5	30.5	2,287	25,975	8.1	91.9	\$9,516,487	\$29,320,930	24.5	75.5
	90%	Basic	174	.	100.0	.	28,262	.	100.0	.	\$38,837,417	.	100.0	.
		Log	135	39	77.6	22.4	3,554	24,708	12.6	87.4	\$13,164,949	\$25,672,468	33.9	66.1
Internal medicine	70%	Basic	1,605	1,966	44.9	55.1	61,119	1,425,060	4.1	95.9	\$81,592,112	\$1,261,074,893	6.1	93.9
		Log	691	2,880	19.4	80.6	3,536	1,482,643	0.2	99.8	\$16,766,768	\$1,325,900,237	1.2	98.8
	80%	Basic	1,983	1,588	55.5	44.5	133,597	1,352,582	9.0	91.0	\$154,615,403	\$1,188,051,602	11.5	88.5
		Log	872	2,699	24.4	75.6	6,926	1,479,253	0.5	99.5	\$34,267,098	\$1,308,399,907	2.6	97.4
	90%	Basic	2,690	881	75.3	24.7	400,964	1,085,215	27.0	73.0	\$399,480,024	\$943,186,981	29.8	70.2
		Log	1,160	2,411	32.5	67.5	16,507	1,469,672	1.1	98.9	\$74,236,936	\$1,268,430,069	5.5	94.5

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Nephrology	70%	Basic	118	35	77.1	22.9	10,111	23,110	30.4	69.6	\$21,648,368	\$46,094,867	32.0	68.0
		Log	50	103	32.7	67.3	563	32,658	1.7	98.3	\$1,940,056	\$65,803,179	2.9	97.1
	80%	Basic	137	16	89.5	10.5	17,111	16,110	51.5	48.5	\$39,278,508	\$28,464,727	58.0	42.0
		Log	64	89	41.8	58.2	1,297	31,924	3.9	96.1	\$6,775,173	\$60,968,062	10.0	90.0
	90%	Basic	149	4	97.4	2.6	25,696	7,525	77.3	22.7	\$56,969,075	\$10,774,160	84.1	15.9
		Log	91	62	59.5	40.5	3,619	29,602	10.9	89.1	\$11,985,488	\$55,757,747	17.7	82.3
Neurology	70%	Basic	249	227	52.3	47.7	8,072	72,112	10.1	89.9	\$16,972,876	\$91,587,712	15.6	84.4
		Log	149	327	31.3	68.7	1,331	78,853	1.7	98.3	\$3,684,065	\$104,876,523	3.4	96.6
	80%	Basic	312	164	65.5	34.5	16,592	63,592	20.7	79.3	\$35,539,848	\$73,020,740	32.7	67.3
		Log	189	287	39.7	60.3	2,813	77,371	3.5	96.5	\$8,218,049	\$100,342,539	7.6	92.4
	90%	Basic	407	69	85.5	14.5	42,363	37,821	52.8	47.2	\$69,117,747	\$39,442,841	63.7	36.3
		Log	249	227	52.3	47.7	7,288	72,896	9.1	90.9	\$17,598,234	\$90,962,354	16.2	83.8
Neurosurgery	70%	Basic	39	67	36.8	63.2	1,075	13,413	7.4	92.6	\$10,388,963	\$75,667,659	12.1	87.9
		Log	36	70	34.0	66.0	735	13,753	5.1	94.9	\$10,845,457	\$75,211,165	12.6	87.4
	80%	Basic	64	42	60.4	39.6	3,614	10,874	24.9	75.1	\$29,510,219	\$56,546,403	34.3	65.7
		Log	44	62	41.5	58.5	1,275	13,213	8.8	91.2	\$16,882,056	\$69,174,566	19.6	80.4
	90%	Basic	97	9	91.5	8.5	11,046	3,442	76.2	23.8	\$68,133,967	\$17,922,655	79.2	20.8
		Log	72	34	67.9	32.1	4,799	9,689	33.1	66.9	\$39,565,601	\$46,491,021	46.0	54.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	671	148	81.9	18.1	43,146	53,515	44.6	55.4	\$21,577,333	\$28,812,422	42.8	57.2
		Log	346	473	42.2	57.8	4,898	91,763	5.1	94.9	\$6,180,611	\$44,209,144	12.3	87.7
	80%	Basic	760	59	92.8	7.2	68,279	28,382	70.6	29.4	\$33,184,895	\$17,204,860	65.9	34.1
		Log	425	394	51.9	48.1	9,368	87,293	9.7	90.3	\$10,539,995	\$39,849,760	20.9	79.1
	90%	Basic	814	5	99.4	0.6	92,588	4,073	95.8	4.2	\$47,638,284	\$2,751,471	94.5	5.5
		Log	587	232	71.7	28.3	25,663	70,998	26.5	73.5	\$22,786,421	\$27,603,334	45.2	54.8
Ophthalmology	70%	Basic	142	404	26.0	74.0	1,586	502,685	0.3	99.7	\$844,787	\$212,166,717	0.4	99.6
		Log	107	439	19.6	80.4	770	503,501	0.2	99.8	\$344,289	\$212,667,215	0.2	99.8
	80%	Basic	162	384	29.7	70.3	2,789	501,482	0.6	99.4	\$1,545,397	\$211,466,107	0.7	99.3
		Log	134	412	24.5	75.5	1,327	502,944	0.3	99.7	\$655,336	\$212,356,168	0.3	99.7
	90%	Basic	201	345	36.8	63.2	7,074	497,197	1.4	98.6	\$3,672,710	\$209,338,794	1.7	98.3
		Log	165	381	30.2	69.8	2,782	501,489	0.6	99.4	\$1,426,448	\$211,585,056	0.7	99.3
Oral/Maxillofacial surgery	70%	Basic	144	.	100.0	.	4,303	.	100.0	.	\$2,553,772	.	100.0	.
		Log	113	31	78.5	21.5	1,931	2,372	44.9	55.1	\$1,187,635	\$1,366,137	46.5	53.5
	80%	Basic	144	.	100.0	.	4,303	.	100.0	.	\$2,553,772	.	100.0	.
		Log	131	13	91.0	9.0	2,886	1,417	67.1	32.9	\$1,917,390	\$636,382	75.1	24.9
	90%	Basic	144	.	100.0	.	4,303	.	100.0	.	\$2,553,772	.	100.0	.
		Log	144	.	100.0	.	4,303	.	100.0	.	\$2,553,772	.	100.0	.

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Orthopedic surgery	70%	Basic	211	379	35.8	64.2	3,580	171,155	2.0	98.0	\$9,996,956	\$539,288,500	1.8	98.2
		Log	190	400	32.2	67.8	1,896	172,839	1.1	98.9	\$8,503,506	\$540,781,950	1.5	98.5
	80%	Basic	244	346	41.4	58.6	7,255	167,480	4.2	95.8	\$19,352,334	\$529,933,122	3.5	96.5
		Log	217	373	36.8	63.2	3,780	170,955	2.2	97.8	\$18,528,118	\$530,757,338	3.4	96.6
	90%	Basic	330	260	55.9	44.1	27,522	147,213	15.8	84.2	\$67,539,173	\$481,746,283	12.3	87.7
		Log	274	316	46.4	53.6	11,400	163,335	6.5	93.5	\$46,333,586	\$502,951,870	8.4	91.6
Otolaryngology	70%	Basic	112	97	53.6	46.4	20,219	89,160	18.5	81.5	\$11,919,439	\$31,863,974	27.2	72.8
		Log	44	165	21.1	78.9	401	108,978	0.4	99.6	\$386,781	\$43,396,632	0.9	99.1
	80%	Basic	153	56	73.2	26.8	49,705	59,674	45.4	54.6	\$25,264,547	\$18,518,866	57.7	42.3
		Log	50	159	23.9	76.1	712	108,667	0.7	99.3	\$860,102	\$42,923,311	2.0	98.0
	90%	Basic	199	10	95.2	4.8	95,106	14,273	87.0	13.0	\$40,818,909	\$2,964,504	93.2	6.8
		Log	58	151	27.8	72.2	1,412	107,967	1.3	98.7	\$1,552,143	\$42,231,270	3.5	96.5
Physical medicine and rehabilitation	70%	Basic	75	60	55.6	44.4	3,034	14,873	16.9	83.1	\$11,693,002	\$24,759,472	32.1	67.9
		Log	35	100	25.9	74.1	318	17,589	1.8	98.2	\$2,602,069	\$33,850,405	7.1	92.9
	80%	Basic	100	35	74.1	25.9	7,208	10,699	40.3	59.7	\$20,085,776	\$16,366,698	55.1	44.9
		Log	49	86	36.3	63.7	808	17,099	4.5	95.5	\$6,606,281	\$29,846,193	18.1	81.9
	90%	Basic	126	9	93.3	6.7	14,280	3,627	79.7	20.3	\$31,895,169	\$4,557,305	87.5	12.5
		Log	70	65	51.9	48.1	2,157	15,750	12.0	88.0	\$11,608,729	\$24,843,745	31.8	68.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Plastic and reconstructive surgery	70%	Basic	108	18	85.7	14.3	10,783	11,653	48.1	51.9	\$20,430,279	\$8,945,125	69.5	30.5
		Log	50	76	39.7	60.3	1,007	21,429	4.5	95.5	\$2,242,654	\$27,132,750	7.6	92.4
	80%	Basic	117	9	92.9	7.1	14,288	8,148	63.7	36.3	\$24,109,755	\$5,265,649	82.1	17.9
		Log	69	57	54.8	45.2	2,362	20,074	10.5	89.5	\$6,414,515	\$22,960,889	21.8	78.2
	90%	Basic	126	.	100.0	.	22,436	.	100.0	.	\$29,375,404	.	100.0	.
		Log	93	33	73.8	26.2	5,894	16,542	26.3	73.7	\$13,112,890	\$16,262,514	44.6	55.4
Podiatry	70%	Basic	100	252	28.4	71.6	12,215	427,923	2.8	97.2	\$4,981,931	\$64,111,513	7.2	92.8
		Log	46	306	13.1	86.9	442	439,696	0.1	99.9	\$97,382	\$68,996,062	0.1	99.9
	80%	Basic	139	213	39.5	60.5	42,257	397,881	9.6	90.4	\$13,695,516	\$55,397,928	19.8	80.2
		Log	55	297	15.6	84.4	684	439,454	0.2	99.8	\$120,010	\$68,973,434	0.2	99.8
	90%	Basic	215	137	61.1	38.9	117,725	322,413	26.7	73.3	\$28,747,888	\$40,345,556	41.6	58.4
		Log	73	279	20.7	79.3	1,618	438,520	0.4	99.6	\$231,280	\$68,862,164	0.3	99.7
Psychiatry	70%	Basic	684	313	68.6	31.4	3,264	27,700	10.5	89.5	\$13,420,466	\$195,610,329	6.4	93.6
		Log	475	522	47.6	52.4	1,106	29,858	3.6	96.4	\$4,972,340	\$204,058,455	2.4	97.6
	80%	Basic	768	229	77.0	23.0	4,987	25,977	16.1	83.9	\$24,221,481	\$184,809,314	11.6	88.4
		Log	603	394	60.5	39.5	2,053	28,911	6.6	93.4	\$9,117,814	\$199,912,981	4.4	95.6
	90%	Basic	869	128	87.2	12.8	9,177	21,787	29.6	70.4	\$57,864,383	\$151,166,412	27.7	72.3
		Log	745	252	74.7	25.3	4,081	26,883	13.2	86.8	\$24,638,403	\$184,392,392	11.8	88.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pulmonary disease	70%	Basic	167	97	63.3	36.7	8,307	66,400	11.1	88.9	\$29,808,730	\$118,545,283	20.1	79.9
		Log	99	165	37.5	62.5	1,414	73,293	1.9	98.1	\$10,706,514	\$137,647,499	7.2	92.8
	80%	Basic	201	63	76.1	23.9	19,553	55,154	26.2	73.8	\$54,909,358	\$93,444,655	37.0	63.0
		Log	122	142	46.2	53.8	2,570	72,137	3.4	96.6	\$15,495,891	\$132,858,122	10.4	89.6
	90%	Basic	246	18	93.2	6.8	48,538	26,169	65.0	35.0	\$102,022,296	\$46,331,717	68.8	31.2
		Log	159	105	60.2	39.8	6,459	68,248	8.6	91.4	\$30,910,602	\$117,443,411	20.8	79.2
Rheumatology	70%	Basic	85	67	55.9	44.1	5,287	54,292	8.9	91.1	\$4,946,090	\$30,564,952	13.9	86.1
		Log	50	102	32.9	67.1	565	59,014	0.9	99.1	\$570,068	\$34,940,974	1.6	98.4
	80%	Basic	103	49	67.8	32.2	11,312	48,267	19.0	81.0	\$9,623,841	\$25,887,201	27.1	72.9
		Log	57	95	37.5	62.5	966	58,613	1.6	98.4	\$1,022,461	\$34,488,581	2.9	97.1
	90%	Basic	132	20	86.8	13.2	31,671	27,908	53.2	46.8	\$20,372,357	\$15,138,685	57.4	42.6
		Log	74	78	48.7	51.3	2,552	57,027	4.3	95.7	\$2,575,292	\$32,935,750	7.3	92.7
Urology	70%	Basic	72	150	32.4	67.6	3,030	132,096	2.2	97.8	\$4,707,601	\$165,151,710	2.8	97.2
		Log	55	167	24.8	75.2	582	134,544	0.4	99.6	\$903,560	\$168,955,751	0.5	99.5
	80%	Basic	90	132	40.5	59.5	7,852	127,274	5.8	94.2	\$12,966,297	\$156,893,014	7.6	92.4
		Log	57	165	25.7	74.3	688	134,438	0.5	99.5	\$978,732	\$168,880,579	0.6	99.4
	90%	Basic	133	89	59.9	40.1	32,697	102,429	24.2	75.8	\$45,488,789	\$124,370,522	26.8	73.2
		Log	68	154	30.6	69.4	2,066	133,060	1.5	98.5	\$4,815,325	\$165,043,986	2.8	97.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	7,463	7,054	51.4	48.6	350,208	4,059,844	7.9	92.1	\$526,505,769	\$4,491,635,540	10.5	89.5
		Log	4,129	10388	28.4	71.6	33,557	4,376,495	0.8	99.2	\$147,409,185	\$4,870,732,124	2.9	97.1
	80%	Basic	9,112	5,405	62.8	37.2	706,505	3,703,547	16.0	84.0	\$964,148,890	\$4,053,992,419	19.2	80.8
		Log	5,167	9,350	35.6	64.4	66,418	4,343,634	1.5	98.5	\$264,603,569	\$4,753,537,740	5.3	94.7
	90%	Basic	11440	3,077	78.8	21.2	1,547,204	2,862,848	35.1	64.9	\$1,967,235,236	\$3,050,906,073	39.2	60.8
		Log	7,027	7,490	48.4	51.6	190,496	4,219,556	4.3	95.7	\$721,403,008	\$4,296,738,301	14.4	85.6
<b>Specialty Group</b>	---	Score												
<b>Allergy/immunology</b>	70%	Basic	48	31	60.8	39.2	4,438	11,891	27.2	72.8	\$2,311,066	\$5,817,813	28.4	71.6
		Log	18	61	22.8	77.2	199	16,130	1.2	98.8	\$187,111	\$7,941,768	2.3	97.7
	80%	Basic	61	18	77.2	22.8	8,022	8,307	49.1	50.9	\$3,586,336	\$4,542,543	44.1	55.9
		Log	29	50	36.7	63.3	954	15,375	5.8	94.2	\$543,153	\$7,585,726	6.7	93.3
	90%	Basic	75	4	94.9	5.1	13,867	2,462	84.9	15.1	\$7,404,669	\$724,210	91.1	8.9
		Log	52	27	65.8	34.2	4,321	12,008	26.5	73.5	\$2,189,708	\$5,939,171	26.9	73.1

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Cardiology	70%	Basic	173	501	25.7	74.3	2,111	284,638	0.7	99.3	\$6,778,460	\$564,424,450	1.2	98.8
		Log	130	544	19.3	80.7	859	285,890	0.3	99.7	\$5,633,066	\$565,569,844	1.0	99.0
	80%	Basic	222	452	32.9	67.1	4,563	282,186	1.6	98.4	\$12,529,978	\$558,672,932	2.2	97.8
		Log	157	517	23.3	76.7	1,362	285,387	0.5	99.5	\$8,090,202	\$563,112,708	1.4	98.6
	90%	Basic	304	370	45.1	54.9	13,256	273,493	4.6	95.4	\$37,182,159	\$534,020,751	6.5	93.5
		Log	210	464	31.2	68.8	3,591	283,158	1.3	98.7	\$19,531,799	\$551,671,111	3.4	96.6
Cardiothoracic surgery	70%	Basic	55	54	50.5	49.5	2,316	7,479	23.6	76.4	\$28,782,251	\$144,291,464	16.6	83.4
		Log	35	74	32.1	67.9	391	9,404	4.0	96.0	\$9,457,795	\$163,615,920	5.5	94.5
	80%	Basic	77	32	70.6	29.4	5,466	4,329	55.8	44.2	\$62,163,524	\$110,910,191	35.9	64.1
		Log	49	60	45.0	55.0	1,022	8,773	10.4	89.6	\$22,715,348	\$150,358,367	13.1	86.9
	90%	Basic	94	15	86.2	13.8	7,932	1,863	81.0	19.0	\$107,958,377	\$65,115,338	62.4	37.6
		Log	96	13	88.1	11.9	6,513	3,282	66.5	33.5	\$141,587,065	\$31,486,650	81.8	18.2
Chiropractic	70%	Basic	315	502	38.6	61.4	2,403	34,263	6.6	93.4	\$1,097,510	\$13,085,178	7.7	92.3
		Log	278	539	34.0	66.0	1,523	35,143	4.2	95.8	\$720,632	\$13,462,056	5.1	94.9
	80%	Basic	427	390	52.3	47.7	4,971	31,695	13.6	86.4	\$2,256,370	\$11,926,318	15.9	84.1
		Log	383	434	46.9	53.1	3,544	33,122	9.7	90.3	\$1,598,282	\$12,584,406	11.3	88.7
	90%	Basic	638	179	78.1	21.9	14,559	22,107	39.7	60.3	\$6,183,361	\$7,999,327	43.6	56.4
		Log	590	227	72.2	27.8	11,488	25,178	31.3	68.7	\$4,986,772	\$9,195,916	35.2	64.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dermatology	70%	Basic	57	288	16.5	83.5	1,351	241,032	0.6	99.4	\$917,778	\$81,724,426	1.1	98.9
		Log	29	316	8.4	91.6	131	242,252	0.1	99.9	\$102,515	\$82,539,689	0.1	99.9
	80%	Basic	79	266	22.9	77.1	2,934	239,449	1.2	98.8	\$1,872,877	\$80,769,327	2.3	97.7
		Log	45	300	13.0	87.0	412	241,971	0.2	99.8	\$304,347	\$82,337,857	0.4	99.6
	90%	Basic	118	227	34.2	65.8	8,222	234,161	3.4	96.6	\$4,273,530	\$78,368,674	5.2	94.8
		Log	71	274	20.6	79.4	1,296	241,087	0.5	99.5	\$746,210	\$81,895,994	0.9	99.1
Emergency medicine	70%	Basic	418	277	60.1	39.9	34,478	92,041	27.3	72.7	\$44,675,249	\$108,022,736	29.3	70.7
		Log	179	516	25.8	74.2	1,970	124,549	1.6	98.4	\$3,043,828	\$149,654,157	2.0	98.0
	80%	Basic	596	99	85.8	14.2	82,426	44,093	65.1	34.9	\$100,890,592	\$51,807,393	66.1	33.9
		Log	219	476	31.5	68.5	3,887	122,632	3.1	96.9	\$5,571,634	\$147,126,351	3.6	96.4
	90%	Basic	693	2	99.7	0.3	124,210	2,309	98.2	1.8	\$151,261,434	\$1,436,551	99.1	0.9
		Log	322	373	46.3	53.7	14,503	112,016	11.5	88.5	\$20,811,076	\$131,886,909	13.6	86.4
Endocrinology	70%	Basic	136	33	80.5	19.5	16,766	20,803	44.6	55.4	\$12,767,497	\$12,997,811	49.6	50.4
		Log	60	109	35.5	64.5	687	36,882	1.8	98.2	\$517,550	\$25,247,758	2.0	98.0
	80%	Basic	155	14	91.7	8.3	26,307	11,262	70.0	30.0	\$19,709,371	\$6,055,937	76.5	23.5
		Log	76	93	45.0	55.0	1,339	36,230	3.6	96.4	\$993,168	\$24,772,140	3.9	96.1
	90%	Basic	165	4	97.6	2.4	34,131	3,438	90.8	9.2	\$24,026,633	\$1,738,675	93.3	6.7
		Log	97	72	57.4	42.6	3,187	34,382	8.5	91.5	\$2,434,158	\$23,331,150	9.4	90.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	678	395	63.2	36.8	44,832	273,308	14.1	85.9	\$29,076,262	\$147,396,626	16.5	83.5
		Log	336	737	31.3	68.7	1,929	316,211	0.6	99.4	\$4,331,086	\$172,141,802	2.5	97.5
	80%	Basic	826	247	77.0	23.0	100,469	217,671	31.6	68.4	\$63,865,284	\$112,607,604	36.2	63.8
		Log	390	683	36.3	63.7	3,327	314,813	1.0	99.0	\$5,710,201	\$170,762,687	3.2	96.8
	90%	Basic	1,012	61	94.3	5.7	231,818	86,322	72.9	27.1	\$135,029,997	\$41,442,891	76.5	23.5
		Log	463	610	43.2	56.8	6,646	311,494	2.1	97.9	\$9,410,025	\$167,062,863	5.3	94.7
Gastroenterology	70%	Basic	154	222	41.0	59.0	8,049	138,499	5.5	94.5	\$9,702,830	\$131,017,041	6.9	93.1
		Log	89	287	23.7	76.3	981	145,567	0.7	99.3	\$1,256,479	\$139,463,392	0.9	99.1
	80%	Basic	197	179	52.4	47.6	18,682	127,866	12.7	87.3	\$23,241,539	\$117,478,332	16.5	83.5
		Log	102	274	27.1	72.9	1,580	144,968	1.1	98.9	\$1,891,748	\$138,828,123	1.3	98.7
	90%	Basic	297	79	79.0	21.0	69,975	76,573	47.7	52.3	\$72,163,554	\$68,556,317	51.3	48.7
		Log	145	231	38.6	61.4	5,649	140,899	3.9	96.1	\$6,913,936	\$133,805,935	4.9	95.1
General surgery	70%	Basic	271	271	50.0	50.0	11,323	84,441	11.8	88.2	\$47,663,632	\$291,661,614	14.0	86.0
		Log	186	356	34.3	65.7	1,990	93,774	2.1	97.9	\$17,392,662	\$321,932,584	5.1	94.9
	80%	Basic	346	196	63.8	36.2	22,790	72,974	23.8	76.2	\$88,180,621	\$251,144,625	26.0	74.0
		Log	230	312	42.4	57.6	4,635	91,129	4.8	95.2	\$37,401,195	\$301,924,051	11.0	89.0
	90%	Basic	478	64	88.2	11.8	63,189	32,575	66.0	34.0	\$223,161,166	\$116,164,080	65.8	34.2
		Log	329	213	60.7	39.3	15,989	79,775	16.7	83.3	\$94,350,580	\$244,974,666	27.8	72.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>Hematology/oncology</b>	<b>70%</b>	<b>Basic</b>	192	259	42.6	57.4	3,365	72,922	4.4	95.6	\$12,436,035	\$271,029,491	4.4	95.6
		<b>Log</b>	153	298	33.9	66.1	1,380	74,907	1.8	98.2	\$11,340,555	\$272,124,971	4.0	96.0
	<b>80%</b>	<b>Basic</b>	253	198	56.1	43.9	7,565	68,722	9.9	90.1	\$36,734,591	\$246,730,935	13.0	87.0
		<b>Log</b>	194	257	43.0	57.0	2,934	73,353	3.8	96.2	\$23,444,862	\$260,020,664	8.3	91.7
	<b>90%</b>	<b>Basic</b>	340	111	75.4	24.6	18,214	58,073	23.9	76.1	\$91,454,489	\$192,011,037	32.3	67.7
		<b>Log</b>	278	173	61.6	38.4	8,718	67,569	11.4	88.6	\$64,340,823	\$219,124,703	22.7	77.3
<b>Infectious disease</b>	<b>70%</b>	<b>Basic</b>	166	21	88.8	11.2	7,734	14,512	34.8	65.2	\$17,351,453	\$17,685,372	49.5	50.5
		<b>Log</b>	103	84	55.1	44.9	979	21,267	4.4	95.6	\$4,861,880	\$30,174,945	13.9	86.1
	<b>80%</b>	<b>Basic</b>	173	14	92.5	7.5	9,607	12,639	43.2	56.8	\$20,708,337	\$14,328,488	59.1	40.9
		<b>Log</b>	123	64	65.8	34.2	1,776	20,470	8.0	92.0	\$8,082,801	\$26,954,024	23.1	76.9
	<b>90%</b>	<b>Basic</b>	184	3	98.4	1.6	20,345	1,901	91.5	8.5	\$32,462,198	\$2,574,627	92.7	7.3
		<b>Log</b>	149	38	79.7	20.3	3,761	18,485	16.9	83.1	\$13,486,902	\$21,549,923	38.5	61.5
<b>Internal medicine</b>	<b>70%</b>	<b>Basic</b>	1,753	2,011	46.6	53.4	57,567	1,252,822	4.4	95.6	\$97,225,477	\$1,174,990,326	7.6	92.4
		<b>Log</b>	687	3,077	18.3	81.7	3,055	1,307,334	0.2	99.8	\$20,042,867	\$1,252,172,936	1.6	98.4
	<b>80%</b>	<b>Basic</b>	2,171	1,593	57.7	42.3	128,600	1,181,789	9.8	90.2	\$182,838,407	\$1,089,377,396	14.4	85.6
		<b>Log</b>	892	2,872	23.7	76.3	5,732	1,304,657	0.4	99.6	\$36,852,976	\$1,235,362,827	2.9	97.1
	<b>90%</b>	<b>Basic</b>	2,856	908	75.9	24.1	362,658	947,731	27.7	72.3	\$413,582,096	\$858,633,707	32.5	67.5
		<b>Log</b>	1,258	2,506	33.4	66.6	15,672	1,294,717	1.2	98.8	\$91,102,381	\$1,181,113,422	7.2	92.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Nephrology	70%	Basic	138	35	79.8	20.2	11,104	21,455	34.1	65.9	\$23,188,634	\$46,452,405	33.3	66.7
		Log	72	101	41.6	58.4	1,173	31,386	3.6	96.4	\$3,910,314	\$65,730,725	5.6	94.4
	80%	Basic	157	16	90.8	9.2	17,892	14,667	55.0	45.0	\$37,455,233	\$32,185,806	53.8	46.2
		Log	88	85	50.9	49.1	2,258	30,301	6.9	93.1	\$8,412,181	\$61,228,858	12.1	87.9
	90%	Basic	172	1	99.4	0.6	31,433	1,126	96.5	3.5	\$66,143,068	\$3,497,971	95.0	5.0
		Log	122	51	70.5	29.5	6,412	26,147	19.7	80.3	\$17,245,404	\$52,395,635	24.8	75.2
Neurology	70%	Basic	275	212	56.5	43.5	10,274	65,229	13.6	86.4	\$24,402,266	\$80,919,551	23.2	76.8
		Log	140	347	28.7	71.3	1,423	74,080	1.9	98.1	\$7,631,120	\$97,690,697	7.2	92.8
	80%	Basic	338	149	69.4	30.6	19,475	56,028	25.8	74.2	\$41,988,437	\$63,333,380	39.9	60.1
		Log	180	307	37.0	63.0	2,684	72,819	3.6	96.4	\$10,850,485	\$94,471,332	10.3	89.7
	90%	Basic	441	46	90.6	9.4	49,160	26,343	65.1	34.9	\$76,461,145	\$28,860,672	72.6	27.4
		Log	257	230	52.8	47.2	7,601	67,902	10.1	89.9	\$23,537,622	\$81,784,195	22.3	77.7
Neurosurgery	70%	Basic	36	65	35.6	64.4	884	12,435	6.6	93.4	\$9,598,617	\$73,857,435	11.5	88.5
		Log	30	71	29.7	70.3	481	12,838	3.6	96.4	\$7,745,045	\$75,711,007	9.3	90.7
	80%	Basic	51	50	50.5	49.5	2,155	11,164	16.2	83.8	\$17,472,206	\$65,983,846	20.9	79.1
		Log	40	61	39.6	60.4	938	12,381	7.0	93.0	\$12,394,565	\$71,061,487	14.9	85.1
	90%	Basic	88	13	87.1	12.9	8,888	4,431	66.7	33.3	\$56,589,552	\$26,866,500	67.8	32.2
		Log	53	48	52.5	47.5	2,229	11,090	16.7	83.3	\$23,143,413	\$60,312,639	27.7	72.3

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	678	124	84.5	15.5	42,532	42,944	49.8	50.2	\$23,120,126	\$25,293,672	47.8	52.2
		Log	346	456	43.1	56.9	4,364	81,112	5.1	94.9	\$4,726,073	\$43,687,725	9.8	90.2
	80%	Basic	761	41	94.9	5.1	65,712	19,764	76.9	23.1	\$39,858,915	\$8,554,883	82.3	17.7
		Log	440	362	54.9	45.1	9,464	76,012	11.1	88.9	\$10,899,555	\$37,514,243	22.5	77.5
	90%	Basic	799	3	99.6	0.4	82,701	2,775	96.8	3.2	\$47,442,624	\$971,174	98.0	2.0
		Log	595	207	74.2	25.8	25,825	59,651	30.2	69.8	\$25,390,738	\$23,023,060	52.4	47.6
Ophthalmology	70%	Basic	149	402	27.0	73.0	2,142	468,400	0.5	99.5	\$1,206,389	\$207,351,868	0.6	99.4
		Log	107	444	19.4	80.6	753	469,789	0.2	99.8	\$580,618	\$207,977,639	0.3	99.7
	80%	Basic	174	377	31.6	68.4	4,109	466,433	0.9	99.1	\$2,236,874	\$206,321,383	1.1	98.9
		Log	131	420	23.8	76.2	1,304	469,238	0.3	99.7	\$881,526	\$207,676,731	0.4	99.6
	90%	Basic	216	335	39.2	60.8	9,416	461,126	2.0	98.0	\$5,062,392	\$203,495,865	2.4	97.6
		Log	165	386	29.9	70.1	2,805	467,737	0.6	99.4	\$1,755,547	\$206,802,710	0.8	99.2
Oral/Maxillofacial surgery	70%	Basic	147	1	99.3	0.7	4,203	58	98.6	1.4	\$2,535,931	\$10,582	99.6	0.4
		Log	92	56	62.2	37.8	1,072	3,189	25.2	74.8	\$630,749	\$1,915,764	24.8	75.2
	80%	Basic	148	.	100.0	.	4,261	.	100.0	.	\$2,546,513	.	100.0	.
		Log	124	24	83.8	16.2	2,305	1,956	54.1	45.9	\$1,643,500	\$903,013	64.5	35.5
	90%	Basic	148	.	100.0	.	4,261	.	100.0	.	\$2,546,513	.	100.0	.
		Log	141	7	95.3	4.7	3,393	868	79.6	20.4	\$2,086,985	\$459,528	82.0	18.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Orthopedic surgery	70%	Basic	213	387	35.5	64.5	3,298	160,964	2.0	98.0	\$11,526,764	\$529,509,787	2.1	97.9
		Log	198	402	33.0	67.0	1,990	162,272	1.2	98.8	\$10,976,013	\$530,060,538	2.0	98.0
	80%	Basic	253	347	42.2	57.8	7,669	156,593	4.7	95.3	\$23,175,050	\$517,861,501	4.3	95.7
		Log	221	379	36.8	63.2	3,563	160,699	2.2	97.8	\$17,986,142	\$523,050,409	3.3	96.7
	90%	Basic	349	251	58.2	41.8	29,302	134,960	17.8	82.2	\$76,415,630	\$464,620,921	14.1	85.9
		Log	292	308	48.7	51.3	13,829	150,433	8.4	91.6	\$63,310,930	\$477,725,621	11.7	88.3
Otolaryngology	70%	Basic	128	89	59.0	41.0	27,293	74,766	26.7	73.3	\$18,527,133	\$25,840,720	41.8	58.2
		Log	46	171	21.2	78.8	339	101,720	0.3	99.7	\$260,492	\$44,107,361	0.6	99.4
	80%	Basic	170	47	78.3	21.7	55,372	46,687	54.3	45.7	\$30,432,551	\$13,935,302	68.6	31.4
		Log	57	160	26.3	73.7	645	101,414	0.6	99.4	\$467,590	\$43,900,263	1.1	98.9
	90%	Basic	203	14	93.5	6.5	85,546	16,513	83.8	16.2	\$40,687,537	\$3,680,316	91.7	8.3
		Log	68	149	31.3	68.7	1,430	100,629	1.4	98.6	\$1,715,670	\$42,652,183	3.9	96.1
Physical medicine and rehabilitation	70%	Basic	113	30	79.0	21.0	8,584	10,882	44.1	55.9	\$21,653,808	\$12,033,466	64.3	35.7
		Log	52	91	36.4	63.6	723	18,743	3.7	96.3	\$5,121,592	\$28,565,682	15.2	84.8
	80%	Basic	122	21	85.3	14.7	10,765	8,701	55.3	44.7	\$23,826,609	\$9,860,665	70.7	29.3
		Log	64	79	44.8	55.2	1,340	18,126	6.9	93.1	\$8,028,867	\$25,658,407	23.8	76.2
	90%	Basic	132	11	92.3	7.7	13,854	5,612	71.2	28.8	\$27,629,333	\$6,057,941	82.0	18.0
		Log	92	51	64.3	35.7	4,189	15,277	21.5	78.5	\$14,441,839	\$19,245,435	42.9	57.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Plastic and reconstructive surgery	70%	Basic	101	27	78.9	21.1	6,179	12,397	33.3	66.7	\$14,316,861	\$12,744,486	52.9	47.1
		Log	59	69	46.1	53.9	1,079	17,497	5.8	94.2	\$3,884,192	\$23,177,155	14.4	85.6
	80%	Basic	112	16	87.5	12.5	10,202	8,374	54.9	45.1	\$18,839,700	\$8,221,647	69.6	30.4
		Log	79	49	61.7	38.3	2,431	16,145	13.1	86.9	\$7,098,627	\$19,962,720	26.2	73.8
	90%	Basic	122	6	95.3	4.7	13,934	4,642	75.0	25.0	\$22,691,612	\$4,369,735	83.9	16.1
		Log	99	29	77.3	22.7	5,289	13,287	28.5	71.5	\$13,026,596	\$14,034,751	48.1	51.9
Podiatry	70%	Basic	95	246	27.9	72.1	16,724	403,630	4.0	96.0	\$6,073,069	\$59,274,423	9.3	90.7
		Log	42	299	12.3	87.7	332	420,022	0.1	99.9	\$60,840	\$65,286,652	0.1	99.9
	80%	Basic	140	201	41.1	58.9	47,241	373,113	11.2	88.8	\$14,537,749	\$50,809,743	22.2	77.8
		Log	54	287	15.8	84.2	621	419,733	0.1	99.9	\$98,677	\$65,248,815	0.2	99.8
	90%	Basic	216	125	63.3	36.7	131,477	288,877	31.3	68.7	\$30,460,935	\$34,886,557	46.6	53.4
		Log	70	271	20.5	79.5	1,495	418,859	0.4	99.6	\$298,288	\$65,049,204	0.5	99.5
Psychiatry	70%	Basic	618	270	69.6	30.4	3,011	22,639	11.7	88.3	\$13,887,988	\$174,407,089	7.4	92.6
		Log	441	447	49.7	50.3	1,095	24,555	4.3	95.7	\$5,208,039	\$183,087,038	2.8	97.2
	80%	Basic	694	194	78.2	21.8	4,558	21,092	17.8	82.2	\$23,760,228	\$164,534,849	12.6	87.4
		Log	539	349	60.7	39.3	1,881	23,769	7.3	92.7	\$9,792,103	\$178,502,974	5.2	94.8
	90%	Basic	784	104	88.3	11.7	8,808	16,842	34.3	65.7	\$59,197,491	\$129,097,586	31.4	68.6
		Log	685	203	77.1	22.9	4,030	21,620	15.7	84.3	\$24,772,333	\$163,522,744	13.2	86.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Boston, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pulmonary disease	70%	Basic	187	86	68.5	31.5	10,461	54,512	16.1	83.9	\$37,779,423	\$99,948,545	27.4	72.6
		Log	105	168	38.5	61.5	1,484	63,489	2.3	97.7	\$15,649,987	\$122,077,981	11.4	88.6
	80%	Basic	215	58	78.8	21.2	19,948	45,025	30.7	69.3	\$55,044,218	\$82,683,750	40.0	60.0
		Log	126	147	46.2	53.8	2,375	62,598	3.7	96.3	\$19,456,552	\$118,271,416	14.1	85.9
	90%	Basic	261	12	95.6	4.4	47,865	17,108	73.7	26.3	\$108,254,983	\$29,472,985	78.6	21.4
		Log	170	103	62.3	37.7	6,298	58,675	9.7	90.3	\$32,647,407	\$105,080,561	23.7	76.3
Rheumatology	70%	Basic	96	66	59.3	40.7	4,859	49,031	9.0	91.0	\$4,121,148	\$29,285,957	12.3	87.7
		Log	60	102	37.0	63.0	585	53,305	1.1	98.9	\$497,959	\$32,909,146	1.5	98.5
	80%	Basic	113	49	69.8	30.2	11,225	42,665	20.8	79.2	\$8,692,570	\$24,714,535	26.0	74.0
		Log	71	91	43.8	56.2	1,144	52,746	2.1	97.9	\$836,796	\$32,570,309	2.5	97.5
	90%	Basic	145	17	89.5	10.5	32,620	21,270	60.5	39.5	\$19,704,112	\$13,702,993	59.0	41.0
		Log	85	77	52.5	47.5	2,423	51,467	4.5	95.5	\$1,703,748	\$31,703,357	5.1	94.9
Urology	70%	Basic	73	149	32.9	67.1	1,927	131,851	1.4	98.6	\$3,782,112	\$150,561,206	2.5	97.5
		Log	56	166	25.2	74.8	590	133,188	0.4	99.6	\$1,638,126	\$152,705,192	1.1	98.9
	80%	Basic	81	141	36.5	63.5	3,519	130,259	2.6	97.4	\$5,704,210	\$148,639,108	3.7	96.3
		Log	64	158	28.8	71.2	961	132,817	0.7	99.3	\$2,556,486	\$151,786,832	1.7	98.3
	90%	Basic	110	112	49.5	50.5	15,563	118,215	11.6	88.4	\$21,804,646	\$132,538,672	14.1	85.9
		Log	73	149	32.9	67.1	1,914	131,864	1.4	98.6	\$4,435,053	\$149,908,265	2.9	97.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Greenville, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	<b>Score</b>												
	70%	<b>Basic</b>	461	915	33.5	66.5	46,167	859,255	5.1	94.9	\$37,497,417	\$639,448,254	5.5	94.5
		<b>Log</b>	213	1,163	15.5	84.5	3,625	901,797	0.4	99.6	\$4,381,092	\$672,564,579	0.6	99.4
	80%	<b>Basic</b>	642	734	46.7	53.3	105,539	799,883	11.7	88.3	\$82,508,579	\$594,437,092	12.2	87.8
		<b>Log</b>	282	1,094	20.5	79.5	8,479	896,943	0.9	99.1	\$11,212,373	\$665,733,298	1.7	98.3
	90%	<b>Basic</b>	959	417	69.7	30.3	303,237	602,185	33.5	66.5	\$248,401,658	\$428,544,013	36.7	63.3
		<b>Log</b>	444	932	32.3	67.7	28,378	877,044	3.1	96.9	\$48,610,468	\$628,335,203	7.2	92.8
<b>Specialty Group</b>	---	<b>Score</b>												
<b>Chiropractic</b>	70%	<b>Basic</b>	69	127	35.2	64.8	657	16,668	3.8	96.2	\$245,322	\$4,646,753	5.0	95.0
		<b>Log</b>	58	138	29.6	70.4	377	16,948	2.2	97.8	\$115,388	\$4,776,687	2.4	97.6
	80%	<b>Basic</b>	88	108	44.9	55.1	1,212	16,113	7.0	93.0	\$430,368	\$4,461,707	8.8	91.2
		<b>Log</b>	73	123	37.2	62.8	704	16,621	4.1	95.9	\$219,947	\$4,672,128	4.5	95.5
	90%	<b>Basic</b>	128	68	65.3	34.7	3,532	13,793	20.4	79.6	\$1,108,639	\$3,783,436	22.7	77.3
		<b>Log</b>	111	85	56.6	43.4	2,321	15,004	13.4	86.6	\$752,316	\$4,139,759	15.4	84.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Greenville, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Emergency medicine	70%	Basic	46	66	41.1	58.9	6,796	31,971	17.5	82.5	\$7,115,900	\$21,559,310	24.8	75.2
		Log	9	103	8.0	92.0	65	38,702	0.2	99.8	\$29,353	\$28,645,857	0.1	99.9
	80%	Basic	80	32	71.4	28.6	19,281	19,486	49.7	50.3	\$17,559,119	\$11,116,091	61.2	38.8
		Log	12	100	10.7	89.3	173	38,594	0.4	99.6	\$129,892	\$28,545,318	0.5	99.5
	90%	Basic	108	4	96.4	3.6	34,202	4,565	88.2	11.8	\$26,104,807	\$2,570,403	91.0	9.0
		Log	23	89	20.5	79.5	1,204	37,563	3.1	96.9	\$2,113,304	\$26,561,906	7.4	92.6
Family/General practice	70%	Basic	118	301	28.2	71.8	20,091	394,014	4.9	95.1	\$8,855,381	\$101,013,337	8.1	91.9
		Log	33	386	7.9	92.1	208	413,897	0.1	99.9	\$341,973	\$109,526,745	0.3	99.7
	80%	Basic	180	239	43.0	57.0	50,570	363,535	12.2	87.8	\$18,716,288	\$91,152,430	17.0	83.0
		Log	39	380	9.3	90.7	456	413,649	0.1	99.9	\$407,061	\$109,461,657	0.4	99.6
	90%	Basic	305	114	72.8	27.2	174,036	240,069	42.0	58.0	\$57,063,773	\$52,804,945	51.9	48.1
		Log	64	355	15.3	84.7	2,894	411,211	0.7	99.3	\$1,750,652	\$108,118,066	1.6	98.4
General surgery	70%	Basic	30	80	27.3	72.7	2,914	52,348	5.3	94.7	\$8,504,728	\$116,117,231	6.8	93.2
		Log	13	97	11.8	88.2	286	54,976	0.5	99.5	\$905,015	\$123,716,944	0.7	99.3
	80%	Basic	45	65	40.9	59.1	8,173	47,089	14.8	85.2	\$21,416,790	\$103,205,169	17.2	82.8
		Log	22	88	20.0	80.0	1,159	54,103	2.1	97.9	\$4,721,748	\$119,900,211	3.8	96.2
	90%	Basic	97	13	88.2	11.8	40,023	15,239	72.4	27.6	\$96,528,094	\$28,093,865	77.5	22.5
		Log	38	72	34.5	65.5	4,733	50,529	8.6	91.4	\$18,472,420	\$106,149,539	14.8	85.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Greenville, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Internal medicine	70%	Basic	37	189	16.4	83.6	978	299,102	0.3	99.7	\$3,537,854	\$201,272,516	1.7	98.3
		Log	18	208	8.0	92.0	96	299,984	0.0	100.0	\$619,885	\$204,190,485	0.3	99.7
	80%	Basic	47	179	20.8	79.2	2,245	297,835	0.7	99.3	\$5,844,761	\$198,965,609	2.9	97.1
		Log	22	204	9.7	90.3	170	299,910	0.1	99.9	\$1,444,609	\$203,365,761	0.7	99.3
	90%	Basic	80	146	35.4	64.6	12,283	287,797	4.1	95.9	\$20,443,398	\$184,366,972	10.0	90.0
		Log	34	192	15.0	85.0	653	299,427	0.2	99.8	\$4,253,328	\$200,557,042	2.1	97.9
Obstetrics/gynecology	70%	Basic	116	19	85.9	14.1	13,496	9,561	58.5	41.5	\$5,882,950	\$8,824,786	40.0	60.0
		Log	57	78	42.2	57.8	2,376	20,681	10.3	89.7	\$1,636,763	\$13,070,973	11.1	88.9
	80%	Basic	129	6	95.6	4.4	18,720	4,337	81.2	18.8	\$7,677,066	\$7,030,670	52.2	47.8
		Log	82	53	60.7	39.3	5,386	17,671	23.4	76.6	\$3,113,494	\$11,594,242	21.2	78.8
	90%	Basic	133	2	98.5	1.5	21,984	1,073	95.3	4.7	\$8,881,779	\$5,825,957	60.4	39.6
		Log	114	21	84.4	15.6	12,826	10,231	55.6	44.4	\$8,494,532	\$6,213,204	57.8	42.2
Orthopedic surgery	70%	Basic	13	76	14.6	85.4	1,061	50,594	2.1	97.9	\$2,382,674	\$154,457,599	1.5	98.5
		Log	6	83	6.7	93.3	169	51,486	0.3	99.7	\$592,151	\$156,248,122	0.4	99.6
	80%	Basic	28	61	31.5	68.5	4,884	46,771	9.5	90.5	\$8,858,268	\$147,982,005	5.6	94.4
		Log	8	81	9.0	91.0	352	51,303	0.7	99.3	\$870,283	\$155,969,990	0.6	99.4
	90%	Basic	53	36	59.6	40.4	16,334	35,321	31.6	68.4	\$36,095,921	\$120,744,352	23.0	77.0
		Log	24	65	27.0	73.0	3,521	48,134	6.8	93.2	\$11,442,291	\$145,397,982	7.3	92.7

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Greenville, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Psychiatry	70%	Basic	32	57	36.0	64.0	174	4,997	3.4	96.6	\$972,608	\$31,556,722	3.0	97.0
		Log	19	70	21.3	78.7	48	5,123	0.9	99.1	\$140,564	\$32,388,766	0.4	99.6
	80%	Basic	45	44	50.6	49.4	454	4,717	8.8	91.2	\$2,005,919	\$30,523,411	6.2	93.8
		Log	24	65	27.0	73.0	79	5,092	1.5	98.5	\$305,339	\$32,223,991	0.9	99.1
	90%	Basic	55	34	61.8	38.2	843	4,328	16.3	83.7	\$2,175,247	\$30,354,083	6.7	93.3
		Log	36	53	40.4	59.6	226	4,945	4.4	95.6	\$1,331,625	\$31,197,705	4.1	95.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Greenville, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	527	877	37.5	62.5	56,263	692,307	7.5	92.5	\$45,890,956	\$558,283,999	7.6	92.4
		Log	243	1,161	17.3	82.7	5,411	743,159	0.7	99.3	\$10,213,542	\$593,961,413	1.7	98.3
	80%	Basic	710	694	50.6	49.4	117,905	630,665	15.8	84.2	\$102,362,992	\$501,811,963	16.9	83.1
		Log	324	1,080	23.1	76.9	11,276	737,294	1.5	98.5	\$18,890,140	\$585,284,815	3.1	96.9
	90%	Basic	1,027	377	73.1	26.9	277,851	470,719	37.1	62.9	\$251,805,062	\$352,369,893	41.7	58.3
		Log	502	902	35.8	64.2	34,036	714,534	4.5	95.5	\$68,722,432	\$535,452,523	11.4	88.6
<b>Specialty Group</b>	---	Score												
<b>Chiropractic</b>	70%	Basic	74	123	37.6	62.4	787	13,925	5.3	94.7	\$382,411	\$3,465,915	9.9	90.1
		Log	62	135	31.5	68.5	482	14,230	3.3	96.7	\$152,033	\$3,696,293	4.0	96.0
	80%	Basic	102	95	51.8	48.2	2,191	12,521	14.9	85.1	\$829,581	\$3,018,745	21.6	78.4
		Log	75	122	38.1	61.9	772	13,940	5.2	94.8	\$353,050	\$3,495,276	9.2	90.8
	90%	Basic	150	47	76.1	23.9	5,495	9,217	37.4	62.6	\$1,685,474	\$2,162,852	43.8	56.2
		Log	117	80	59.4	40.6	2,699	12,013	18.3	81.7	\$917,556	\$2,930,770	23.8	76.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Greenville, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Emergency medicine	70%	Basic	58	57	50.4	49.6	11,030	27,948	28.3	71.7	\$9,067,761	\$21,523,969	29.6	70.4
		Log	9	106	7.8	92.2	110	38,868	0.3	99.7	\$263,927	\$30,327,803	0.9	99.1
	80%	Basic	100	15	87.0	13.0	27,792	11,186	71.3	28.7	\$22,718,521	\$7,873,209	74.3	25.7
		Log	12	103	10.4	89.6	250	38,728	0.6	99.4	\$373,709	\$30,218,021	1.2	98.8
	90%	Basic	114	1	99.1	0.9	37,684	1,294	96.7	3.3	\$30,419,894	\$171,836	99.4	0.6
		Log	21	94	18.3	81.7	1,060	37,918	2.7	97.3	\$1,995,289	\$28,596,441	6.5	93.5
Family/General practice	70%	Basic	136	287	32.2	67.8	25,830	312,418	7.6	92.4	\$10,773,664	\$83,779,253	11.4	88.6
		Log	35	388	8.3	91.7	310	337,938	0.1	99.9	\$355,154	\$94,197,763	0.4	99.6
	80%	Basic	190	233	44.9	55.1	53,179	285,069	15.7	84.3	\$23,237,233	\$71,315,684	24.6	75.4
		Log	44	379	10.4	89.6	613	337,635	0.2	99.8	\$467,039	\$94,085,878	0.5	99.5
	90%	Basic	310	113	73.3	26.7	152,000	186,248	44.9	55.1	\$54,564,796	\$39,988,121	57.7	42.3
		Log	65	358	15.4	84.6	1,904	336,344	0.6	99.4	\$960,837	\$93,592,080	1.0	99.0
General surgery	70%	Basic	38	70	35.2	64.8	3,874	38,286	9.2	90.8	\$14,470,288	\$88,610,546	14.0	86.0
		Log	19	89	17.6	82.4	703	41,457	1.7	98.3	\$4,059,748	\$99,021,086	3.9	96.1
	80%	Basic	59	49	54.6	45.4	13,277	28,883	31.5	68.5	\$34,527,444	\$68,553,390	33.5	66.5
		Log	24	84	22.2	77.8	1,247	40,913	3.0	97.0	\$6,583,670	\$96,497,164	6.4	93.6
	90%	Basic	101	7	93.5	6.5	36,578	5,582	86.8	13.2	\$89,882,280	\$13,198,554	87.2	12.8
		Log	54	54	50.0	50.0	8,075	34,085	19.2	80.8	\$28,867,444	\$74,213,390	28.0	72.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Greenville, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Internal medicine	70%	Basic	35	207	14.5	85.5	948	247,533	0.4	99.6	\$2,721,816	\$191,958,853	1.4	98.6
		Log	13	229	5.4	94.6	83	248,398	0.0	100.0	\$719,130	\$193,961,539	0.4	99.6
	80%	Basic	48	194	19.8	80.2	1,984	246,497	0.8	99.2	\$5,774,501	\$188,906,168	3.0	97.0
		Log	21	221	8.7	91.3	210	248,271	0.1	99.9	\$1,759,650	\$192,921,019	0.9	99.1
	90%	Basic	98	144	40.5	59.5	13,286	235,195	5.3	94.7	\$29,536,221	\$165,144,448	15.2	84.8
		Log	38	204	15.7	84.3	911	247,570	0.4	99.6	\$7,335,958	\$187,344,711	3.8	96.2
Obstetrics/gynecology	70%	Basic	130	15	89.7	10.3	12,426	6,440	65.9	34.1	\$5,447,484	\$8,254,651	39.8	60.2
		Log	77	68	53.1	46.9	3,196	15,670	16.9	83.1	\$2,951,195	\$10,750,940	21.5	78.5
	80%	Basic	140	5	96.6	3.4	16,205	2,661	85.9	14.1	\$7,516,675	\$6,185,460	54.9	45.1
		Log	105	40	72.4	27.6	6,840	12,026	36.3	63.7	\$4,828,596	\$8,873,539	35.2	64.8
	90%	Basic	143	2	98.6	1.4	17,901	965	94.9	5.1	\$8,542,486	\$5,159,649	62.3	37.7
		Log	137	8	94.5	5.5	14,743	4,123	78.1	21.9	\$12,605,114	\$1,097,021	92.0	8.0
Orthopedic surgery	70%	Basic	17	70	19.5	80.5	1,028	40,938	2.4	97.6	\$2,150,946	\$134,028,761	1.6	98.4
		Log	13	74	14.9	85.1	484	41,482	1.2	98.8	\$1,486,133	\$134,693,574	1.1	98.9
	80%	Basic	26	61	29.9	70.1	2,810	39,156	6.7	93.3	\$6,759,445	\$129,420,262	5.0	95.0
		Log	18	69	20.7	79.3	1,229	40,737	2.9	97.1	\$3,742,668	\$132,437,039	2.7	97.3
	90%	Basic	54	33	62.1	37.9	13,948	28,018	33.2	66.8	\$35,193,608	\$100,986,099	25.8	74.2
		Log	32	55	36.8	63.2	4,345	37,621	10.4	89.6	\$14,918,711	\$121,260,996	11.0	89.0

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Greenville, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Psychiatry	70%	Basic	39	48	44.8	55.2	340	4,819	6.6	93.4	\$876,586	\$26,662,051	3.2	96.8
		Log	15	72	17.2	82.8	43	5,116	0.8	99.2	\$226,222	\$27,312,415	0.8	99.2
	80%	Basic	45	42	51.7	48.3	467	4,692	9.1	90.9	\$999,592	\$26,539,045	3.6	96.4
		Log	25	62	28.7	71.3	115	5,044	2.2	97.8	\$781,758	\$26,756,879	2.8	97.2
	90%	Basic	57	30	65.5	34.5	959	4,200	18.6	81.4	\$1,980,303	\$25,558,334	7.2	92.8
		Log	38	49	43.7	56.3	299	4,860	5.8	94.2	\$1,121,523	\$26,417,114	4.1	95.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	2,021	2,166	48.3	51.7	199,551	1,591,186	11.1	88.9	\$369,675,407	\$1,657,793,033	18.2	81.8
		Log	843	3,344	20.1	79.9	10,270	1,780,467	0.6	99.4	\$71,274,472	\$1,956,193,968	3.5	96.5
	80%	Basic	2,465	1,722	58.9	41.1	324,845	1,465,892	18.1	81.9	\$557,170,903	\$1,470,297,537	27.5	72.5
		Log	1,123	3,064	26.8	73.2	21,396	1,769,341	1.2	98.8	\$120,402,287	\$1,907,066,153	5.9	94.1
	90%	Basic	3,156	1,031	75.4	24.6	613,835	1,176,902	34.3	65.7	\$929,690,571	\$1,097,777,869	45.9	54.1
		Log	1,693	2,494	40.4	59.6	68,480	1,722,257	3.8	96.2	\$251,430,927	\$1,776,037,513	12.4	87.6
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	25	207	10.8	89.2	581	172,557	0.3	99.7	\$1,920,739	\$208,448,480	0.9	99.1
		Log	12	220	5.2	94.8	69	173,069	0.0	100.0	\$284,099	\$210,085,120	0.1	99.9
	80%	Basic	34	198	14.7	85.3	1,235	171,903	0.7	99.3	\$4,905,419	\$205,463,800	2.3	97.7
		Log	18	214	7.8	92.2	212	172,926	0.1	99.9	\$1,454,061	\$208,915,158	0.7	99.3
	90%	Basic	65	167	28.0	72.0	6,331	166,807	3.7	96.3	\$17,779,705	\$192,589,514	8.5	91.5
		Log	29	203	12.5	87.5	793	172,345	0.5	99.5	\$6,159,424	\$204,209,795	2.9	97.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	76	88	46.3	53.7	975	7,418	11.6	88.4	\$354,323	\$2,197,725	13.9	86.1
		Log	59	105	36.0	64.0	365	8,028	4.3	95.7	\$145,797	\$2,406,251	5.7	94.3
	80%	Basic	102	62	62.2	37.8	1,739	6,654	20.7	79.3	\$631,158	\$1,920,890	24.7	75.3
		Log	87	77	53.0	47.0	901	7,492	10.7	89.3	\$348,943	\$2,203,105	13.7	86.3
	90%	Basic	141	23	86.0	14.0	3,461	4,932	41.2	58.8	\$1,219,726	\$1,332,322	47.8	52.2
		Log	129	35	78.7	21.3	2,512	5,881	29.9	70.1	\$883,155	\$1,668,893	34.6	65.4
Dermatology	70%	Basic	12	110	9.8	90.2	184	82,299	0.2	99.8	\$88,467	\$29,278,771	0.3	99.7
		Log	8	114	6.6	93.4	39	82,444	0.0	100.0	\$12,441	\$29,354,797	0.0	100.0
	80%	Basic	22	100	18.0	82.0	1,318	81,165	1.6	98.4	\$1,060,556	\$28,306,682	3.6	96.4
		Log	13	109	10.7	89.3	157	82,326	0.2	99.8	\$54,539	\$29,312,699	0.2	99.8
	90%	Basic	42	80	34.4	65.6	3,996	78,487	4.8	95.2	\$1,871,261	\$27,495,977	6.4	93.6
		Log	24	98	19.7	80.3	740	81,743	0.9	99.1	\$249,543	\$29,117,695	0.8	99.2
Emergency medicine	70%	Basic	188	1	99.5	0.5	23,967	928	96.3	3.7	\$40,468,998	\$931,403	97.8	2.2
		Log	100	89	52.9	47.1	3,510	21,385	14.1	85.9	\$14,505,639	\$26,894,762	35.0	65.0
	80%	Basic	189	.	100.0	.	24,895	.	100.0	.	\$41,400,401	.	100.0	.
		Log	125	64	66.1	33.9	6,468	18,427	26.0	74.0	\$17,328,323	\$24,072,078	41.9	58.1
	90%	Basic	189	.	100.0	.	24,895	.	100.0	.	\$41,400,401	.	100.0	.
		Log	178	11	94.2	5.8	17,663	7,232	70.9	29.1	\$29,840,732	\$11,559,669	72.1	27.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	561	356	61.2	38.8	81,394	295,153	21.6	78.4	\$161,233,363	\$351,459,199	31.4	68.6
		Log	146	771	15.9	84.1	1,164	375,383	0.3	99.7	\$24,765,493	\$487,927,069	4.8	95.2
	80%	Basic	679	238	74.0	26.0	128,467	248,080	34.1	65.9	\$259,928,351	\$252,764,211	50.7	49.3
		Log	187	730	20.4	79.6	2,385	374,162	0.6	99.4	\$42,060,741	\$470,631,821	8.2	91.8
	90%	Basic	815	102	88.9	11.1	227,149	149,398	60.3	39.7	\$397,741,795	\$114,950,767	77.6	22.4
		Log	299	618	32.6	67.4	7,966	368,581	2.1	97.9	\$74,605,769	\$438,086,793	14.6	85.4
Gastroenterology	70%	Basic	30	63	32.3	67.7	5,028	50,280	9.1	90.9	\$7,126,266	\$49,124,802	12.7	87.3
		Log	9	84	9.7	90.3	158	55,150	0.3	99.7	\$198,170	\$56,052,898	0.4	99.6
	80%	Basic	47	46	50.5	49.5	13,008	42,300	23.5	76.5	\$14,561,667	\$41,689,401	25.9	74.1
		Log	14	79	15.1	84.9	594	54,714	1.1	98.9	\$974,278	\$55,276,790	1.7	98.3
	90%	Basic	80	13	86.0	14.0	34,897	20,411	63.1	36.9	\$33,309,212	\$22,941,856	59.2	40.8
		Log	25	68	26.9	73.1	2,737	52,571	4.9	95.1	\$3,217,733	\$53,033,335	5.7	94.3
General surgery	70%	Basic	99	108	47.8	52.2	5,042	38,088	11.7	88.3	\$13,921,159	\$91,921,165	13.2	86.8
		Log	71	136	34.3	65.7	1,060	42,070	2.5	97.5	\$6,851,191	\$98,991,133	6.5	93.5
	80%	Basic	125	82	60.4	39.6	10,938	32,192	25.4	74.6	\$22,194,718	\$83,647,606	21.0	79.0
		Log	87	120	42.0	58.0	1,918	41,212	4.4	95.6	\$10,057,309	\$95,785,015	9.5	90.5
	90%	Basic	177	30	85.5	14.5	24,413	18,717	56.6	43.4	\$65,725,644	\$40,116,680	62.1	37.9
		Log	129	78	62.3	37.7	6,638	36,492	15.4	84.6	\$28,451,946	\$77,390,378	26.9	73.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	31	70	30.7	69.3	579	18,080	3.1	96.9	\$2,449,616	\$77,313,984	3.1	96.9
		Log	29	72	28.7	71.3	397	18,262	2.1	97.9	\$2,668,244	\$77,095,356	3.3	96.7
	80%	Basic	40	61	39.6	60.4	1,171	17,488	6.3	93.7	\$4,863,912	\$74,899,688	6.1	93.9
		Log	38	63	37.6	62.4	908	17,751	4.9	95.1	\$7,018,728	\$72,744,872	8.8	91.2
	90%	Basic	66	35	65.3	34.7	4,193	14,466	22.5	77.5	\$26,273,901	\$53,489,699	32.9	67.1
		Log	61	40	60.4	39.6	3,142	15,517	16.8	83.2	\$22,520,556	\$57,243,044	28.2	71.8
Internal medicine	70%	Basic	383	457	45.6	54.4	21,865	283,507	7.2	92.8	\$39,399,911	\$364,924,313	9.7	90.3
		Log	151	689	18.0	82.0	1,007	304,365	0.3	99.7	\$8,103,466	\$396,220,758	2.0	98.0
	80%	Basic	466	374	55.5	44.5	38,326	267,046	12.6	87.4	\$65,244,157	\$339,080,067	16.1	83.9
		Log	202	638	24.0	76.0	2,204	303,168	0.7	99.3	\$14,112,571	\$390,211,653	3.5	96.5
	90%	Basic	647	193	77.0	23.0	105,152	200,220	34.4	65.6	\$140,676,087	\$263,648,137	34.8	65.2
		Log	287	553	34.2	65.8	6,154	299,218	2.0	98.0	\$25,351,503	\$378,972,721	6.3	93.7
Neurology	70%	Basic	56	63	47.1	52.9	3,564	33,125	9.7	90.3	\$6,683,740	\$37,653,223	15.1	84.9
		Log	19	100	16.0	84.0	299	36,390	0.8	99.2	\$1,189,730	\$43,147,233	2.7	97.3
	80%	Basic	70	49	58.8	41.2	6,395	30,294	17.4	82.6	\$11,350,339	\$32,986,624	25.6	74.4
		Log	29	90	24.4	75.6	783	35,906	2.1	97.9	\$3,198,975	\$41,137,988	7.2	92.8
	90%	Basic	98	21	82.4	17.6	16,595	20,094	45.2	54.8	\$22,610,881	\$21,726,082	51.0	49.0
		Log	49	70	41.2	58.8	2,304	34,385	6.3	93.7	\$6,272,204	\$38,064,759	14.1	85.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	200	52	79.4	20.6	12,584	22,370	36.0	64.0	\$15,645,505	\$12,955,898	54.7	45.3
		Log	90	162	35.7	64.3	886	34,068	2.5	97.5	\$3,281,957	\$25,319,446	11.5	88.5
	80%	Basic	231	21	91.7	8.3	20,101	14,853	57.5	42.5	\$20,004,415	\$8,596,988	69.9	30.1
		Log	112	140	44.4	55.6	1,902	33,052	5.4	94.6	\$9,855,912	\$18,745,491	34.5	65.5
	90%	Basic	247	5	98.0	2.0	25,927	9,027	74.2	25.8	\$22,673,854	\$5,927,549	79.3	20.7
		Log	165	87	65.5	34.5	6,132	28,822	17.5	82.5	\$13,877,304	\$14,724,099	48.5	51.5
Ophthalmology	70%	Basic	32	166	16.2	83.8	810	169,603	0.5	99.5	\$308,978	\$75,205,170	0.4	99.6
		Log	10	188	5.1	94.9	110	170,303	0.1	99.9	\$84,046	\$75,430,102	0.1	99.9
	80%	Basic	51	147	25.8	74.2	2,213	168,200	1.3	98.7	\$980,079	\$74,534,069	1.3	98.7
		Log	22	176	11.1	88.9	453	169,960	0.3	99.7	\$241,294	\$75,272,854	0.3	99.7
	90%	Basic	69	129	34.8	65.2	4,840	165,573	2.8	97.2	\$2,338,910	\$73,175,238	3.1	96.9
		Log	44	154	22.2	77.8	1,411	169,002	0.8	99.2	\$517,268	\$74,996,880	0.7	99.3
Orthopedic surgery	70%	Basic	54	115	32.0	68.0	1,732	55,996	3.0	97.0	\$7,779,493	\$137,936,339	5.3	94.7
		Log	34	135	20.1	79.9	406	57,322	0.7	99.3	\$6,041,011	\$139,674,821	4.1	95.9
	80%	Basic	68	101	40.2	59.8	3,545	54,183	6.1	93.9	\$10,526,666	\$135,189,166	7.2	92.8
		Log	44	125	26.0	74.0	888	56,840	1.5	98.5	\$6,769,859	\$138,945,973	4.6	95.4
	90%	Basic	102	67	60.4	39.6	11,612	46,116	20.1	79.9	\$29,928,369	\$115,787,463	20.5	79.5
		Log	73	96	43.2	56.8	4,177	53,551	7.2	92.8	\$17,138,375	\$128,577,457	11.8	88.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Podiatry	70%	Basic	72	115	38.5	61.5	15,847	274,732	5.5	94.5	\$6,304,770	\$45,341,204	12.2	87.8
		Log	14	173	7.5	92.5	165	290,414	0.1	99.9	\$42,903	\$51,603,071	0.1	99.9
	80%	Basic	96	91	51.3	48.7	34,298	256,281	11.8	88.2	\$11,336,982	\$40,308,992	22.0	78.0
		Log	20	167	10.7	89.3	337	290,242	0.1	99.9	\$97,631	\$51,548,343	0.2	99.8
	90%	Basic	128	59	68.4	31.6	71,763	218,816	24.7	75.3	\$21,156,798	\$30,489,176	41.0	59.0
		Log	27	160	14.4	85.6	835	289,744	0.3	99.7	\$397,505	\$51,248,469	0.8	99.2
Psychiatry	70%	Basic	104	99	51.2	48.8	853	15,898	5.1	94.9	\$2,245,399	\$88,828,883	2.5	97.5
		Log	67	136	33.0	67.0	252	16,499	1.5	98.5	\$783,426	\$90,290,856	0.9	99.1
	80%	Basic	129	74	63.5	36.5	1,702	15,049	10.2	89.8	\$6,980,373	\$84,093,909	7.7	92.3
		Log	96	107	47.3	52.7	620	16,131	3.7	96.3	\$3,401,698	\$87,672,584	3.7	96.3
	90%	Basic	153	50	75.4	24.6	3,435	13,316	20.5	79.5	\$11,317,691	\$79,756,591	12.4	87.6
		Log	117	86	57.6	42.4	1,082	15,669	6.5	93.5	\$6,030,192	\$85,044,090	6.6	93.4
Pulmonary disease	70%	Basic	79	14	84.9	15.1	23,362	15,889	59.5	40.5	\$61,388,101	\$23,802,601	72.1	27.9
		Log	14	79	15.1	84.9	295	38,956	0.8	99.2	\$1,197,021	\$83,993,681	1.4	98.6
	80%	Basic	90	3	96.8	3.2	33,491	5,760	85.3	14.7	\$77,436,627	\$7,754,075	90.9	9.1
		Log	17	76	18.3	81.7	500	38,751	1.3	98.7	\$2,152,920	\$83,037,782	2.5	97.5
	90%	Basic	93	.	100.0	.	39,251	.	100.0	.	\$85,190,702	.	100.0	.
		Log	35	58	37.6	62.4	3,245	36,006	8.3	91.7	\$13,069,003	\$72,121,699	15.3	84.7

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Miami, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Urology	70%	Basic	19	82	18.8	81.2	1,184	55,263	2.1	97.9	\$2,356,579	\$60,469,873	3.8	96.2
		Log	10	91	9.9	90.1	88	56,359	0.2	99.8	\$1,119,838	\$61,706,614	1.8	98.2
	80%	Basic	26	75	25.7	74.3	2,003	54,444	3.5	96.5	\$3,765,083	\$59,061,369	6.0	94.0
		Log	12	89	11.9	88.1	166	56,281	0.3	99.7	\$1,274,505	\$61,551,947	2.0	98.0
	90%	Basic	44	57	43.6	56.4	5,925	50,522	10.5	89.5	\$8,475,634	\$54,350,818	13.5	86.5
		Log	22	79	21.8	78.2	949	55,498	1.7	98.3	\$2,848,715	\$59,977,737	4.5	95.5

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	2,009	2,145	48.4	51.6	143,025	1,369,357	9.5	90.5	\$233,718,979	\$1,665,414,095	12.3	87.7
		Log	909	3,245	21.9	78.1	12,609	1,499,773	0.8	99.2	\$56,969,493	\$1,842,163,581	3.0	97.0
	80%	Basic	2,492	1,662	60.0	40.0	260,082	1,252,300	17.2	82.8	\$395,930,112	\$1,503,202,962	20.8	79.2
		Log	1,213	2,941	29.2	70.8	27,149	1,485,233	1.8	98.2	\$98,219,395	\$1,800,913,679	5.2	94.8
	90%	Basic	3,185	969	76.7	23.3	530,455	981,927	35.1	64.9	\$810,231,102	\$1,088,901,972	42.7	57.3
		Log	1,735	2,419	41.8	58.2	71,347	1,441,035	4.7	95.3	\$214,682,639	\$1,684,450,435	11.3	88.7
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	24	200	10.7	89.3	573	127,844	0.4	99.6	\$2,750,714	\$175,889,344	1.5	98.5
		Log	8	216	3.6	96.4	31	128,386	0.0	100.0	\$144,209	\$178,495,849	0.1	99.9
	80%	Basic	40	184	17.9	82.1	1,864	126,553	1.5	98.5	\$6,278,924	\$172,361,134	3.5	96.5
		Log	14	210	6.3	93.8	159	128,258	0.1	99.9	\$1,440,711	\$177,199,347	0.8	99.2
	90%	Basic	68	156	30.4	69.6	6,416	122,001	5.0	95.0	\$17,747,910	\$160,892,148	9.9	90.1
		Log	29	195	12.9	87.1	860	127,557	0.7	99.3	\$7,597,361	\$171,042,697	4.3	95.7

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	98	51	65.8	34.2	1,546	4,819	24.3	75.7	\$717,976	\$1,428,106	33.5	66.5
		Log	58	91	38.9	61.1	457	5,908	7.2	92.8	\$217,450	\$1,928,632	10.1	89.9
	80%	Basic	118	31	79.2	20.8	2,278	4,087	35.8	64.2	\$945,536	\$1,200,546	44.1	55.9
		Log	89	60	59.7	40.3	1,149	5,216	18.1	81.9	\$484,146	\$1,661,936	22.6	77.4
	90%	Basic	141	8	94.6	5.4	4,210	2,155	66.1	33.9	\$1,537,566	\$608,516	71.6	28.4
		Log	126	23	84.6	15.4	2,647	3,718	41.6	58.4	\$1,058,584	\$1,087,498	49.3	50.7
Dermatology	70%	Basic	33	102	24.4	75.6	476	71,833	0.7	99.3	\$205,367	\$28,820,102	0.7	99.3
		Log	22	113	16.3	83.7	155	72,154	0.2	99.8	\$81,137	\$28,944,332	0.3	99.7
	80%	Basic	42	93	31.1	68.9	1,450	70,859	2.0	98.0	\$582,859	\$28,442,610	2.0	98.0
		Log	29	106	21.5	78.5	338	71,971	0.5	99.5	\$168,549	\$28,856,920	0.6	99.4
	90%	Basic	58	77	43.0	57.0	3,311	68,998	4.6	95.4	\$1,227,527	\$27,797,942	4.2	95.8
		Log	41	94	30.4	69.6	936	71,373	1.3	98.7	\$389,673	\$28,635,796	1.3	98.7
Emergency medicine	70%	Basic	229	2	99.1	0.9	22,425	1,787	92.6	7.4	\$49,084,532	\$4,520,152	91.6	8.4
		Log	139	92	60.2	39.8	4,975	19,237	20.5	79.5	\$17,337,188	\$36,267,496	32.3	67.7
	80%	Basic	230	1	99.6	0.4	24,211	1	100.0	0.0	\$53,604,577	\$107	100.0	0.0
		Log	180	51	77.9	22.1	9,851	14,361	40.7	59.3	\$26,089,587	\$27,515,097	48.7	51.3
	90%	Basic	231	.	100.0	.	24,212	.	100.0	.	\$53,604,684	.	100.0	.
		Log	222	9	96.1	3.9	18,642	5,570	77.0	23.0	\$39,873,496	\$13,731,188	74.4	25.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	427	478	47.2	52.8	33,759	313,149	9.7	90.3	\$55,262,407	\$470,659,841	10.5	89.5
		Log	129	776	14.3	85.7	919	345,989	0.3	99.7	\$13,291,412	\$512,630,836	2.5	97.5
	80%	Basic	542	363	59.9	40.1	62,111	284,797	17.9	82.1	\$98,908,687	\$427,013,561	18.8	81.2
		Log	175	730	19.3	80.7	1,990	344,918	0.6	99.4	\$18,249,629	\$507,672,619	3.5	96.5
	90%	Basic	714	191	78.9	21.1	134,025	212,883	38.6	61.4	\$228,843,955	\$297,078,293	43.5	56.5
		Log	253	652	28.0	72.0	5,936	340,972	1.7	98.3	\$28,836,788	\$497,085,460	5.5	94.5
Gastroenterology	70%	Basic	36	58	38.3	61.7	6,138	38,002	13.9	86.1	\$7,028,915	\$36,072,703	16.3	83.7
		Log	6	88	6.4	93.6	152	43,988	0.3	99.7	\$280,835	\$42,820,783	0.7	99.3
	80%	Basic	61	33	64.9	35.1	16,499	27,641	37.4	62.6	\$15,281,824	\$27,819,794	35.5	64.5
		Log	9	85	9.6	90.4	457	43,683	1.0	99.0	\$1,275,608	\$41,826,010	3.0	97.0
	90%	Basic	86	8	91.5	8.5	32,599	11,541	73.9	26.1	\$30,530,146	\$12,571,472	70.8	29.2
		Log	27	67	28.7	71.3	3,506	40,634	7.9	92.1	\$4,813,347	\$38,288,271	11.2	88.8
General surgery	70%	Basic	131	68	65.8	34.2	8,259	22,507	26.8	73.2	\$23,283,488	\$59,795,744	28.0	72.0
		Log	83	116	41.7	58.3	1,671	29,095	5.4	94.6	\$9,898,977	\$73,180,255	11.9	88.1
	80%	Basic	164	35	82.4	17.6	14,388	16,378	46.8	53.2	\$40,942,786	\$42,136,446	49.3	50.7
		Log	107	92	53.8	46.2	3,535	27,231	11.5	88.5	\$17,383,492	\$65,695,740	20.9	79.1
	90%	Basic	193	6	97.0	3.0	25,652	5,114	83.4	16.6	\$73,423,214	\$9,656,018	88.4	11.6
		Log	145	54	72.9	27.1	8,906	21,860	28.9	71.1	\$35,355,748	\$47,723,484	42.6	57.4

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	32	75	29.9	70.1	777	15,884	4.7	95.3	\$3,531,377	\$71,239,138	4.7	95.3
		Log	25	82	23.4	76.6	264	16,397	1.6	98.4	\$3,176,836	\$71,593,679	4.2	95.8
	80%	Basic	46	61	43.0	57.0	1,653	15,008	9.9	90.1	\$8,919,945	\$65,850,570	11.9	88.1
		Log	33	74	30.8	69.2	532	16,129	3.2	96.8	\$5,112,714	\$69,657,801	6.8	93.2
	90%	Basic	77	30	72.0	28.0	6,792	9,869	40.8	59.2	\$34,985,158	\$39,785,357	46.8	53.2
		Log	52	55	48.6	51.4	1,856	14,805	11.1	88.9	\$17,850,081	\$56,920,434	23.9	76.1
Internal medicine	70%	Basic	374	441	45.9	54.1	19,066	234,636	7.5	92.5	\$37,313,640	\$359,897,906	9.4	90.6
		Log	132	683	16.2	83.8	930	252,772	0.4	99.6	\$5,291,739	\$391,919,807	1.3	98.7
	80%	Basic	473	342	58.0	42.0	37,905	215,797	14.9	85.1	\$69,134,483	\$328,077,063	17.4	82.6
		Log	180	635	22.1	77.9	2,037	251,665	0.8	99.2	\$10,296,847	\$386,914,699	2.6	97.4
	90%	Basic	647	168	79.4	20.6	97,427	156,275	38.4	61.6	\$154,673,604	\$242,537,942	38.9	61.1
		Log	272	543	33.4	66.6	6,294	247,408	2.5	97.5	\$24,519,732	\$372,691,814	6.2	93.8
Neurology	70%	Basic	42	74	36.2	63.8	1,783	30,400	5.5	94.5	\$4,846,545	\$34,158,347	12.4	87.6
		Log	20	96	17.2	82.8	258	31,925	0.8	99.2	\$1,607,161	\$37,397,731	4.1	95.9
	80%	Basic	65	51	56.0	44.0	5,442	26,741	16.9	83.1	\$11,235,647	\$27,769,245	28.8	71.2
		Log	26	90	22.4	77.6	524	31,659	1.6	98.4	\$2,558,522	\$36,446,370	6.6	93.4
	90%	Basic	96	20	82.8	17.2	15,005	17,178	46.6	53.4	\$21,953,009	\$17,051,883	56.3	43.7
		Log	41	75	35.3	64.7	1,570	30,613	4.9	95.1	\$4,706,394	\$34,298,498	12.1	87.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	242	22	91.7	8.3	16,716	11,254	59.8	40.2	\$18,264,425	\$11,972,244	60.4	39.6
		Log	125	139	47.3	52.7	1,397	26,573	5.0	95.0	\$1,881,414	\$28,355,255	6.2	93.8
	80%	Basic	255	9	96.6	3.4	20,636	7,334	73.8	26.2	\$22,500,623	\$7,736,046	74.4	25.6
		Log	156	108	59.1	40.9	3,003	24,967	10.7	89.3	\$3,876,156	\$26,360,513	12.8	87.2
	90%	Basic	264	.	100.0	.	27,970	.	100.0	.	\$30,236,669	.	100.0	.
		Log	209	55	79.2	20.8	8,748	19,222	31.3	68.7	\$16,477,682	\$13,758,987	54.5	45.5
Ophthalmology	70%	Basic	58	158	26.9	73.1	1,193	147,593	0.8	99.2	\$651,804	\$73,826,097	0.9	99.1
		Log	39	177	18.1	81.9	408	148,378	0.3	99.7	\$267,533	\$74,210,368	0.4	99.6
	80%	Basic	72	144	33.3	66.7	2,399	146,387	1.6	98.4	\$1,216,003	\$73,261,898	1.6	98.4
		Log	49	167	22.7	77.3	720	148,066	0.5	99.5	\$388,125	\$74,089,776	0.5	99.5
	90%	Basic	83	133	38.4	61.6	3,898	144,888	2.6	97.4	\$2,114,307	\$72,363,594	2.8	97.2
		Log	72	144	33.3	66.7	2,182	146,604	1.5	98.5	\$1,217,919	\$73,259,982	1.6	98.4
Orthopedic surgery	70%	Basic	51	113	31.1	68.9	1,805	45,396	3.8	96.2	\$3,446,653	\$122,894,091	2.7	97.3
		Log	33	131	20.1	79.9	438	46,763	0.9	99.1	\$1,187,337	\$125,153,407	0.9	99.1
	80%	Basic	72	92	43.9	56.1	4,784	42,417	10.1	89.9	\$7,383,665	\$118,957,079	5.8	94.2
		Log	51	113	31.1	68.9	1,714	45,487	3.6	96.4	\$6,509,104	\$119,831,640	5.2	94.8
	90%	Basic	117	47	71.3	28.7	16,496	30,705	34.9	65.1	\$41,027,588	\$85,313,156	32.5	67.5
		Log	74	90	45.1	54.9	4,666	42,535	9.9	90.1	\$16,171,851	\$110,168,893	12.8	87.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Podiatry	70%	Basic	73	103	41.5	58.5	19,685	216,666	8.3	91.7	\$6,868,492	\$37,821,118	15.4	84.6
		Log	14	162	8.0	92.0	91	236,260	0.0	100.0	\$39,752	\$44,649,858	0.1	99.9
	80%	Basic	104	72	59.1	40.9	43,851	192,500	18.6	81.4	\$14,480,742	\$30,208,868	32.4	67.6
		Log	14	162	8.0	92.0	91	236,260	0.0	100.0	\$39,752	\$44,649,858	0.1	99.9
	90%	Basic	136	40	77.3	22.7	91,032	145,319	38.5	61.5	\$24,603,425	\$20,086,185	55.1	44.9
		Log	22	154	12.5	87.5	648	235,703	0.3	99.7	\$134,978	\$44,554,632	0.3	99.7
Psychiatry	70%	Basic	93	84	52.5	47.5	1,165	13,588	7.9	92.1	\$3,322,244	\$77,756,739	4.1	95.9
		Log	53	124	29.9	70.1	155	14,598	1.1	98.9	\$972,227	\$80,106,756	1.2	98.8
	80%	Basic	108	69	61.0	39.0	1,823	12,930	12.4	87.6	\$5,917,925	\$75,161,058	7.3	92.7
		Log	70	107	39.5	60.5	381	14,372	2.6	97.4	\$1,750,982	\$79,328,001	2.2	97.8
	90%	Basic	140	37	79.1	20.9	4,662	10,091	31.6	68.4	\$16,547,289	\$64,531,694	20.4	79.6
		Log	99	78	55.9	44.1	1,150	13,603	7.8	92.2	\$7,339,717	\$73,739,266	9.1	90.9
Pulmonary disease	70%	Basic	48	44	52.2	47.8	6,812	25,618	21.0	79.0	\$15,661,904	\$55,075,228	22.1	77.9
		Log	15	77	16.3	83.7	191	32,239	0.6	99.4	\$1,094,342	\$69,642,790	1.5	98.5
	80%	Basic	72	20	78.3	21.7	16,146	16,284	49.8	50.2	\$34,710,050	\$36,027,082	49.1	50.9
		Log	19	73	20.7	79.3	377	32,053	1.2	98.8	\$2,140,648	\$68,596,484	3.0	97.0
	90%	Basic	91	1	98.9	1.1	30,136	2,294	92.9	7.1	\$68,455,402	\$2,281,730	96.8	3.2
		Log	29	63	31.5	68.5	1,404	31,026	4.3	95.7	\$5,558,529	\$65,178,603	7.9	92.1

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Miami, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Urology	70%	Basic	18	72	20.0	80.0	847	48,381	1.7	98.3	\$1,478,496	\$43,587,195	3.3	96.7
		Log	8	82	8.9	91.1	117	49,111	0.2	99.8	\$199,944	\$44,865,747	0.4	99.6
	80%	Basic	28	62	31.1	68.9	2,642	46,586	5.4	94.6	\$3,885,836	\$41,179,855	8.6	91.4
		Log	12	78	13.3	86.7	291	48,937	0.6	99.4	\$454,823	\$44,610,868	1.0	99.0
	90%	Basic	43	47	47.8	52.2	6,612	42,616	13.4	86.6	\$8,719,649	\$36,346,042	19.3	80.7
		Log	22	68	24.4	75.6	1,396	47,832	2.8	97.2	\$2,780,759	\$42,284,932	6.2	93.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	3,009	3,230	48.2	51.8	251,711	1,525,813	14.2	85.8	\$231,900,960	\$1,354,508,521	14.6	85.4
		Log	1,360	4,879	21.8	78.2	19,913	1,757,611	1.1	98.9	\$47,568,958	\$1,538,840,523	3.0	97.0
	80%	Basic	3,751	2,488	60.1	39.9	434,155	1,343,369	24.4	75.6	\$390,256,942	\$1,196,152,539	24.6	75.4
		Log	1,810	4,429	29.0	71.0	39,271	1,738,253	2.2	97.8	\$84,259,761	\$1,502,149,720	5.3	94.7
	90%	Basic	4,892	1,347	78.4	21.6	838,826	938,698	47.2	52.8	\$755,833,320	\$830,576,161	47.6	52.4
		Log	2,765	3,474	44.3	55.7	123,872	1,653,652	7.0	93.0	\$268,968,040	\$1,317,441,441	17.0	83.0
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	31	186	14.3	85.7	257	53,586	0.5	99.5	\$695,727	\$158,283,673	0.4	99.6
		Log	27	190	12.4	87.6	128	53,715	0.2	99.8	\$574,457	\$158,404,943	0.4	99.6
	80%	Basic	39	178	18.0	82.0	689	53,154	1.3	98.7	\$1,195,193	\$157,784,207	0.8	99.2
		Log	30	187	13.8	86.2	196	53,647	0.4	99.6	\$682,815	\$158,296,585	0.4	99.6
	90%	Basic	75	142	34.6	65.4	4,160	49,683	7.7	92.3	\$7,337,288	\$151,642,112	4.6	95.4
		Log	42	175	19.4	80.6	835	53,008	1.6	98.4	\$3,954,304	\$155,025,096	2.5	97.5

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	279	645	30.2	69.8	1,735	40,863	4.1	95.9	\$775,866	\$12,415,085	5.9	94.1
		Log	269	655	29.1	70.9	1,345	41,253	3.2	96.8	\$592,662	\$12,598,289	4.5	95.5
	80%	Basic	386	538	41.8	58.2	3,564	39,034	8.4	91.6	\$1,486,629	\$11,704,322	11.3	88.7
		Log	385	539	41.7	58.3	3,224	39,374	7.6	92.4	\$1,303,959	\$11,886,992	9.9	90.1
	90%	Basic	621	303	67.2	32.8	11,600	30,998	27.2	72.8	\$4,321,340	\$8,869,611	32.8	67.2
		Log	598	326	64.7	35.3	10,115	32,483	23.7	76.3	\$3,816,313	\$9,374,638	28.9	71.1
Dermatology	70%	Basic	10	95	9.5	90.5	645	75,543	0.8	99.2	\$291,703	\$20,976,085	1.4	98.6
		Log	6	99	5.7	94.3	61	76,127	0.1	99.9	\$87,204	\$21,180,584	0.4	99.6
	80%	Basic	12	93	11.4	88.6	825	75,363	1.1	98.9	\$332,898	\$20,934,890	1.6	98.4
		Log	7	98	6.7	93.3	85	76,103	0.1	99.9	\$90,428	\$21,177,360	0.4	99.6
	90%	Basic	29	76	27.6	72.4	3,164	73,024	4.2	95.8	\$1,122,270	\$20,145,518	5.3	94.7
		Log	10	95	9.5	90.5	310	75,878	0.4	99.6	\$371,591	\$20,896,197	1.7	98.3
Emergency medicine	70%	Basic	302	20	93.8	6.2	38,178	6,265	85.9	14.1	\$37,238,227	\$5,599,417	86.9	13.1
		Log	48	274	14.9	85.1	624	43,819	1.4	98.6	\$985,323	\$41,852,321	2.3	97.7
	80%	Basic	320	2	99.4	0.6	43,044	1,399	96.9	3.1	\$41,441,217	\$1,396,427	96.7	3.3
		Log	73	249	22.7	77.3	1,833	42,610	4.1	95.9	\$2,043,376	\$40,794,268	4.8	95.2
	90%	Basic	322	.	100.0	.	44,443	.	100.0	.	\$42,837,644	.	100.0	.
		Log	158	164	49.1	50.9	10,818	33,625	24.3	75.7	\$10,883,939	\$31,953,705	25.4	74.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	901	673	57.2	42.8	98,376	475,478	17.1	82.9	\$44,368,782	\$166,610,452	21.0	79.0
		Log	191	1,383	12.1	87.9	2,364	571,490	0.4	99.6	\$3,200,575	\$207,778,659	1.5	98.5
	80%	Basic	1,164	410	74.0	26.0	195,796	378,058	34.1	65.9	\$83,211,168	\$127,768,066	39.4	60.6
		Log	293	1,281	18.6	81.4	6,258	567,596	1.1	98.9	\$7,750,732	\$203,228,502	3.7	96.3
	90%	Basic	1,470	104	93.4	6.6	417,454	156,400	72.7	27.3	\$161,106,207	\$49,873,027	76.4	23.6
		Log	495	1,079	31.4	68.6	21,264	552,590	3.7	96.3	\$17,935,517	\$193,043,717	8.5	91.5
Gastroenterology	70%	Basic	54	29	65.1	34.9	11,937	16,212	42.4	57.6	\$15,382,426	\$17,135,273	47.3	52.7
		Log	15	68	18.1	81.9	150	27,999	0.5	99.5	\$597,711	\$31,919,988	1.8	98.2
	80%	Basic	77	6	92.8	7.2	24,213	3,936	86.0	14.0	\$29,172,463	\$3,345,236	89.7	10.3
		Log	18	65	21.7	78.3	356	27,793	1.3	98.7	\$790,512	\$31,727,187	2.4	97.6
	90%	Basic	83	.	100.0	.	28,149	.	100.0	.	\$32,517,699	.	100.0	.
		Log	26	57	31.3	68.7	1,646	26,503	5.8	94.2	\$2,693,802	\$29,823,897	8.3	91.7
General surgery	70%	Basic	103	108	48.8	51.2	5,698	31,696	15.2	84.8	\$21,878,732	\$110,084,746	16.6	83.4
		Log	81	130	38.4	61.6	2,499	34,895	6.7	93.3	\$16,447,034	\$115,516,444	12.5	87.5
	80%	Basic	144	67	68.2	31.8	15,132	22,262	40.5	59.5	\$48,332,785	\$83,630,693	36.6	63.4
		Log	97	114	46.0	54.0	3,994	33,400	10.7	89.3	\$26,682,540	\$105,280,938	20.2	79.8
	90%	Basic	206	5	97.6	2.4	33,805	3,589	90.4	9.6	\$114,813,896	\$17,149,582	87.0	13.0
		Log	162	49	76.8	23.2	15,906	21,488	42.5	57.5	\$78,764,199	\$53,199,279	59.7	40.3

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	73	58	55.7	44.3	2,583	17,384	12.9	87.1	\$14,787,965	\$98,229,088	13.1	86.9
		Log	29	102	22.1	77.9	146	19,821	0.7	99.3	\$831,475	\$112,185,578	0.7	99.3
	80%	Basic	86	45	65.6	34.4	4,830	15,137	24.2	75.8	\$24,574,747	\$88,442,306	21.7	78.3
		Log	38	93	29.0	71.0	321	19,646	1.6	98.4	\$2,005,146	\$111,011,907	1.8	98.2
	90%	Basic	112	19	85.5	14.5	11,264	8,703	56.4	43.6	\$62,095,381	\$50,921,672	54.9	45.1
		Log	62	69	47.3	52.7	1,356	18,611	6.8	93.2	\$9,593,309	\$103,423,744	8.5	91.5
Internal medicine	70%	Basic	256	695	26.9	73.1	10,264	428,525	2.3	97.7	\$11,168,678	\$291,818,521	3.7	96.3
		Log	92	859	9.7	90.3	421	438,368	0.1	99.9	\$1,747,993	\$301,239,206	0.6	99.4
	80%	Basic	363	588	38.2	61.8	24,333	414,456	5.5	94.5	\$27,139,241	\$275,847,958	9.0	91.0
		Log	123	828	12.9	87.1	882	437,907	0.2	99.8	\$3,974,281	\$299,012,918	1.3	98.7
	90%	Basic	601	350	63.2	36.8	87,454	351,335	19.9	80.1	\$87,380,002	\$215,607,197	28.8	71.2
		Log	210	741	22.1	77.9	4,081	434,708	0.9	99.1	\$21,141,643	\$281,845,556	7.0	93.0
Neurology	70%	Basic	67	80	45.6	54.4	3,488	23,179	13.1	86.9	\$6,386,929	\$29,650,588	17.7	82.3
		Log	37	110	25.2	74.8	663	26,004	2.5	97.5	\$1,944,876	\$34,092,641	5.4	94.6
	80%	Basic	101	46	68.7	31.3	10,123	16,544	38.0	62.0	\$14,876,616	\$21,160,901	41.3	58.7
		Log	44	103	29.9	70.1	1,038	25,629	3.9	96.1	\$2,644,806	\$33,392,711	7.3	92.7
	90%	Basic	140	7	95.2	4.8	23,019	3,648	86.3	13.7	\$31,122,329	\$4,915,188	86.4	13.6
		Log	74	73	50.3	49.7	4,225	22,442	15.8	84.2	\$7,727,092	\$28,310,425	21.4	78.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	335	12	96.5	3.5	19,293	3,101	86.2	13.8	\$13,078,037	\$7,173,086	64.6	35.4
		Log	210	137	60.5	39.5	5,481	16,913	24.5	75.5	\$5,461,971	\$14,789,152	27.0	73.0
	80%	Basic	345	2	99.4	0.6	21,842	552	97.5	2.5	\$16,574,765	\$3,676,358	81.8	18.2
		Log	282	65	81.3	18.7	11,407	10,987	50.9	49.1	\$11,162,681	\$9,088,442	55.1	44.9
	90%	Basic	347	.	100.0	.	22,394	.	100.0	.	\$20,251,123	.	100.0	.
		Log	331	16	95.4	4.6	18,559	3,835	82.9	17.1	\$18,484,170	\$1,766,953	91.3	8.7
Ophthalmology	70%	Basic	17	177	8.8	91.2	380	185,444	0.2	99.8	\$200,474	\$86,455,006	0.2	99.8
		Log	9	185	4.6	95.4	66	185,758	0.0	100.0	\$45,374	\$86,610,106	0.1	99.9
	80%	Basic	24	170	12.4	87.6	719	185,105	0.4	99.6	\$339,627	\$86,315,853	0.4	99.6
		Log	13	181	6.7	93.3	131	185,693	0.1	99.9	\$72,535	\$86,582,945	0.1	99.9
	90%	Basic	34	160	17.5	82.5	1,790	184,034	1.0	99.0	\$852,394	\$85,803,086	1.0	99.0
		Log	23	171	11.9	88.1	672	185,152	0.4	99.6	\$277,677	\$86,377,803	0.3	99.7
Oral/Maxillofacial surgery	70%	Basic	84	.	100.0	.	1,936	.	100.0	.	\$1,048,571	.	100.0	.
		Log	83	1	98.8	1.2	1,720	216	88.8	11.2	\$997,972	\$50,599	95.2	4.8
	80%	Basic	84	.	100.0	.	1,936	.	100.0	.	\$1,048,571	.	100.0	.
		Log	83	1	98.8	1.2	1,720	216	88.8	11.2	\$997,972	\$50,599	95.2	4.8
	90%	Basic	84	.	100.0	.	1,936	.	100.0	.	\$1,048,571	.	100.0	.
		Log	84	.	100.0	.	1,936	.	100.0	.	\$1,048,571	.	100.0	.

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Orthopedic surgery	70%	Basic	76	190	28.6	71.4	2,870	64,211	4.3	95.7	\$8,452,504	\$220,877,710	3.7	96.3
		Log	65	201	24.4	75.6	1,685	65,396	2.5	97.5	\$6,664,603	\$222,665,611	2.9	97.1
	80%	Basic	107	159	40.2	59.8	7,207	59,874	10.7	89.3	\$23,135,960	\$206,194,254	10.1	89.9
		Log	85	181	32.0	68.0	3,475	63,606	5.2	94.8	\$12,058,695	\$217,271,519	5.3	94.7
	90%	Basic	172	94	64.7	35.3	22,706	44,375	33.8	66.2	\$70,922,104	\$158,408,110	30.9	69.1
		Log	153	113	57.5	42.5	16,653	50,428	24.8	75.2	\$60,097,335	\$169,232,879	26.2	73.8
Otolaryngology	70%	Basic	87	16	84.5	15.5	21,448	11,066	66.0	34.0	\$12,114,910	\$3,699,415	76.6	23.4
		Log	22	81	21.4	78.6	244	32,270	0.8	99.2	\$129,318	\$15,685,007	0.8	99.2
	80%	Basic	101	2	98.1	1.9	30,998	1,516	95.3	4.7	\$15,568,522	\$245,803	98.4	1.6
		Log	27	76	26.2	73.8	555	31,959	1.7	98.3	\$323,421	\$15,490,904	2.0	98.0
	90%	Basic	103	.	100.0	.	32,514	.	100.0	.	\$15,814,325	.	100.0	.
		Log	34	69	33.0	67.0	1,348	31,166	4.1	95.9	\$1,293,233	\$14,521,092	8.2	91.8
Physical medicine and rehabilitation	70%	Basic	62	13	82.7	17.3	3,645	2,951	55.3	44.7	\$7,361,985	\$2,221,502	76.8	23.2
		Log	32	43	42.7	57.3	387	6,209	5.9	94.1	\$806,939	\$8,776,548	8.4	91.6
	80%	Basic	69	6	92.0	8.0	4,670	1,926	70.8	29.2	\$8,237,479	\$1,346,008	86.0	14.0
		Log	41	34	54.7	45.3	798	5,798	12.1	87.9	\$1,669,721	\$7,913,766	17.4	82.6
	90%	Basic	73	2	97.3	2.7	6,010	586	91.1	8.9	\$9,159,069	\$424,418	95.6	4.4
		Log	53	22	70.7	29.3	1,874	4,722	28.4	71.6	\$4,691,614	\$4,891,873	49.0	51.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Podiatry	70%	Basic	32	52	38.1	61.9	9,420	38,780	19.5	80.5	\$3,628,865	\$7,384,206	33.0	67.0
		Log	3	81	3.6	96.4	57	48,143	0.1	99.9	\$35,724	\$10,977,347	0.3	99.7
	80%	Basic	45	39	53.6	46.4	13,692	34,508	28.4	71.6	\$4,914,129	\$6,098,942	44.6	55.4
		Log	5	79	6.0	94.0	156	48,044	0.3	99.7	\$56,973	\$10,956,098	0.5	99.5
	90%	Basic	71	13	84.5	15.5	30,659	17,541	63.6	36.4	\$8,423,016	\$2,590,055	76.5	23.5
		Log	10	74	11.9	88.1	670	47,530	1.4	98.6	\$181,677	\$10,831,394	1.6	98.4
Psychiatry	70%	Basic	116	136	46.0	54.0	595	10,639	5.3	94.7	\$951,172	\$60,617,537	1.5	98.5
		Log	83	169	32.9	67.1	214	11,020	1.9	98.1	\$316,984	\$61,251,725	0.5	99.5
	80%	Basic	143	109	56.7	43.3	1,174	10,060	10.5	89.5	\$1,982,575	\$59,586,134	3.2	96.8
		Log	100	152	39.7	60.3	358	10,876	3.2	96.8	\$805,389	\$60,763,320	1.3	98.7
	90%	Basic	184	68	73.0	27.0	2,814	8,420	25.0	75.0	\$6,841,341	\$54,727,368	11.1	88.9
		Log	137	115	54.4	45.6	967	10,267	8.6	91.4	\$3,006,783	\$58,561,926	4.9	95.1
Pulmonary disease	70%	Basic	86	1	98.9	1.1	13,028	1,626	88.9	11.1	\$23,262,228	\$1,085,416	95.5	4.5
		Log	37	50	42.5	57.5	1,188	13,466	8.1	91.9	\$5,188,531	\$19,159,113	21.3	78.7
	80%	Basic	87	.	100.0	.	14,654	.	100.0	.	\$24,347,644	.	100.0	.
		Log	45	42	51.7	48.3	2,014	12,640	13.7	86.3	\$8,231,547	\$16,116,097	33.8	66.2
	90%	Basic	87	.	100.0	.	14,654	.	100.0	.	\$24,347,644	.	100.0	.
		Log	68	19	78.2	21.8	6,264	8,390	42.7	57.3	\$15,918,187	\$8,429,457	65.4	34.6

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Minneapolis, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Urology	70%	Basic	38	44	46.3	53.7	5,935	39,264	13.1	86.9	\$8,827,179	\$54,191,715	14.0	86.0
		Log	21	61	25.6	74.4	470	44,729	1.0	99.0	\$912,232	\$62,106,662	1.4	98.6
	80%	Basic	54	28	65.9	34.1	14,714	30,485	32.6	67.4	\$22,344,713	\$40,674,181	35.5	64.5
		Log	21	61	25.6	74.4	470	44,729	1.0	99.0	\$912,232	\$62,106,662	1.4	98.6
	90%	Basic	78	4	95.1	4.9	38,837	6,362	85.9	14.1	\$53,519,677	\$9,499,217	84.9	15.1
		Log	35	47	42.7	57.3	4,373	40,826	9.7	90.3	\$7,087,084	\$55,931,810	11.2	88.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	3,396	2,943	53.6	46.4	279,323	1,157,420	19.4	80.6	\$265,402,533	\$1,181,568,788	18.3	81.7
		Log	1,531	4,808	24.2	75.8	21,602	1,415,141	1.5	98.5	\$58,391,464	\$1,388,579,857	4.0	96.0
	80%	Basic	4,201	2,138	66.3	33.7	453,596	983,147	31.6	68.4	\$421,413,868	\$1,025,557,453	29.1	70.9
		Log	2,027	4,312	32.0	68.0	43,758	1,392,985	3.0	97.0	\$116,025,289	\$1,330,946,032	8.0	92.0
	90%	Basic	5,298	1,041	83.6	16.4	796,935	639,808	55.5	44.5	\$756,188,029	\$690,783,292	52.3	47.7
		Log	3,099	3,240	48.9	51.1	132,129	1,304,614	9.2	90.8	\$317,589,356	\$1,129,381,965	21.9	78.1
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	27	191	12.4	87.6	194	45,802	0.4	99.6	\$523,587	\$143,637,683	0.4	99.6
		Log	23	195	10.6	89.4	89	45,907	0.2	99.8	\$426,224	\$143,735,046	0.3	99.7
	80%	Basic	39	179	17.9	82.1	729	45,267	1.6	98.4	\$1,752,872	\$142,408,398	1.2	98.8
		Log	29	189	13.3	86.7	250	45,746	0.5	99.5	\$1,466,829	\$142,694,441	1.0	99.0
	90%	Basic	80	138	36.7	63.3	4,061	41,935	8.8	91.2	\$8,151,016	\$136,010,254	5.7	94.3
		Log	54	164	24.8	75.2	1,558	44,438	3.4	96.6	\$7,194,944	\$136,966,326	5.0	95.0

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	387	575	40.2	59.8	2,933	31,084	8.6	91.4	\$1,180,477	\$9,098,158	11.5	88.5
		Log	340	622	35.3	64.7	2,011	32,006	5.9	94.1	\$796,986	\$9,481,649	7.8	92.2
	80%	Basic	530	432	55.1	44.9	5,930	28,087	17.4	82.6	\$2,243,182	\$8,035,453	21.8	78.2
		Log	475	487	49.4	50.6	4,287	29,730	12.6	87.4	\$1,567,513	\$8,711,122	15.3	84.7
	90%	Basic	790	172	82.1	17.9	16,464	17,553	48.4	51.6	\$5,751,053	\$4,527,582	56.0	44.0
		Log	727	235	75.6	24.4	12,756	21,261	37.5	62.5	\$4,533,917	\$5,744,718	44.1	55.9
Dermatology	70%	Basic	7	107	6.1	93.9	129	73,715	0.2	99.8	\$49,143	\$25,805,159	0.2	99.8
		Log	4	110	3.5	96.5	30	73,814	0.0	100.0	\$17,688	\$25,836,614	0.1	99.9
	80%	Basic	12	102	10.5	89.5	682	73,162	0.9	99.1	\$173,425	\$25,680,877	0.7	99.3
		Log	4	110	3.5	96.5	30	73,814	0.0	100.0	\$17,688	\$25,836,614	0.1	99.9
	90%	Basic	34	80	29.8	70.2	4,694	69,150	6.4	93.6	\$1,714,978	\$24,139,324	6.6	93.4
		Log	10	104	8.8	91.2	313	73,531	0.4	99.6	\$323,100	\$25,531,202	1.2	98.8
Emergency medicine	70%	Basic	342	8	97.7	2.3	39,917	2,446	94.2	5.8	\$43,006,563	\$2,299,089	94.9	5.1
		Log	64	286	18.3	81.7	1,026	41,337	2.4	97.6	\$1,448,658	\$43,856,994	3.2	96.8
	80%	Basic	350	.	100.0	.	42,363	.	100.0	.	\$45,305,652	.	100.0	.
		Log	85	265	24.3	75.7	2,110	40,253	5.0	95.0	\$2,567,357	\$42,738,295	5.7	94.3
	90%	Basic	350	.	100.0	.	42,363	.	100.0	.	\$45,305,652	.	100.0	.
		Log	224	126	64.0	36.0	17,247	25,116	40.7	59.3	\$19,110,844	\$26,194,808	42.2	57.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	1,068	524	67.1	32.9	122,596	316,627	27.9	72.1	\$60,372,463	\$126,731,362	32.3	67.7
		Log	234	1,358	14.7	85.3	2,858	436,365	0.7	99.3	\$6,179,271	\$180,924,554	3.3	96.7
	80%	Basic	1,329	263	83.5	16.5	224,155	215,068	51.0	49.0	\$104,982,035	\$82,121,790	56.1	43.9
		Log	325	1,267	20.4	79.6	6,197	433,026	1.4	98.6	\$10,496,156	\$176,607,669	5.6	94.4
	90%	Basic	1,561	31	98.1	1.9	395,195	44,028	90.0	10.0	\$169,216,560	\$17,887,265	90.4	9.6
		Log	524	1,068	32.9	67.1	19,518	419,705	4.4	95.6	\$22,283,712	\$164,820,113	11.9	88.1
Gastroenterology	70%	Basic	77	15	83.7	16.3	16,821	7,591	68.9	31.1	\$19,871,671	\$8,236,863	70.7	29.3
		Log	20	72	21.7	78.3	469	23,943	1.9	98.1	\$827,564	\$27,280,970	2.9	97.1
	80%	Basic	91	1	98.9	1.1	23,762	650	97.3	2.7	\$27,496,191	\$612,343	97.8	2.2
		Log	24	68	26.1	73.9	814	23,598	3.3	96.7	\$1,342,255	\$26,766,279	4.8	95.2
	90%	Basic	92	.	100.0	.	24,412	.	100.0	.	\$28,108,534	.	100.0	.
		Log	39	53	42.4	57.6	3,083	21,329	12.6	87.4	\$4,539,608	\$23,568,926	16.2	83.8
General surgery	70%	Basic	144	83	63.4	36.6	10,361	20,381	33.7	66.3	\$39,057,131	\$74,981,059	34.2	65.8
		Log	100	127	44.1	55.9	2,798	27,944	9.1	90.9	\$23,742,125	\$90,296,065	20.8	79.2
	80%	Basic	195	32	85.9	14.1	19,440	11,302	63.2	36.8	\$73,759,911	\$40,278,279	64.7	35.3
		Log	132	95	58.1	41.9	5,872	24,870	19.1	80.9	\$41,316,010	\$72,722,180	36.2	63.8
	90%	Basic	224	3	98.7	1.3	28,800	1,942	93.7	6.3	\$102,247,499	\$11,790,691	89.7	10.3
		Log	182	45	80.2	19.8	14,163	16,579	46.1	53.9	\$76,579,364	\$37,458,826	67.2	32.8

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	56	77	42.1	57.9	1,272	16,493	7.2	92.8	\$10,706,372	\$99,025,721	9.8	90.2
		Log	31	102	23.3	76.7	191	17,574	1.1	98.9	\$1,395,413	\$108,336,680	1.3	98.7
	80%	Basic	65	68	48.9	51.1	1,865	15,900	10.5	89.5	\$14,464,628	\$95,267,465	13.2	86.8
		Log	38	95	28.6	71.4	357	17,408	2.0	98.0	\$3,687,416	\$106,044,677	3.4	96.6
	90%	Basic	101	32	75.9	24.1	6,711	11,054	37.8	62.2	\$47,278,749	\$62,453,344	43.1	56.9
		Log	61	72	45.9	54.1	1,217	16,548	6.9	93.1	\$13,251,000	\$96,481,093	12.1	87.9
Internal medicine	70%	Basic	291	676	30.1	69.9	11,440	314,778	3.5	96.5	\$18,192,686	\$257,675,575	6.6	93.4
		Log	94	873	9.7	90.3	429	325,789	0.1	99.9	\$2,436,645	\$273,431,616	0.9	99.1
	80%	Basic	440	527	45.5	54.5	31,003	295,215	9.5	90.5	\$44,029,044	\$231,839,217	16.0	84.0
		Log	133	834	13.8	86.2	1,015	325,203	0.3	99.7	\$6,599,392	\$269,268,869	2.4	97.6
	90%	Basic	698	269	72.2	27.8	104,042	222,176	31.9	68.1	\$118,646,288	\$157,221,973	43.0	57.0
		Log	246	721	25.4	74.6	4,796	321,422	1.5	98.5	\$32,287,377	\$243,580,884	11.7	88.3
Neurology	70%	Basic	88	65	57.5	42.5	6,014	17,497	25.6	74.4	\$9,144,202	\$22,649,887	28.8	71.2
		Log	44	109	28.8	71.2	753	22,758	3.2	96.8	\$2,009,171	\$29,784,918	6.3	93.7
	80%	Basic	120	33	78.4	21.6	11,683	11,828	49.7	50.3	\$16,652,034	\$15,142,055	52.4	47.6
		Log	63	90	41.2	58.8	1,998	21,513	8.5	91.5	\$3,729,245	\$28,064,844	11.7	88.3
	90%	Basic	151	2	98.7	1.3	22,557	954	95.9	4.1	\$30,338,962	\$1,455,127	95.4	4.6
		Log	103	50	67.3	32.7	7,664	15,847	32.6	67.4	\$12,586,242	\$19,207,847	39.6	60.4

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	345	17	95.3	4.7	14,730	3,256	81.9	18.1	\$9,907,811	\$6,894,939	59.0	41.0
		Log	255	107	70.4	29.6	6,469	11,517	36.0	64.0	\$7,601,169	\$9,201,581	45.2	54.8
	80%	Basic	358	4	98.9	1.1	17,148	838	95.3	4.7	\$13,794,836	\$3,007,914	82.1	17.9
		Log	311	51	85.9	14.1	10,678	7,308	59.4	40.6	\$11,628,680	\$5,174,070	69.2	30.8
	90%	Basic	362	.	100.0	.	17,986	.	100.0	.	\$16,802,750	.	100.0	.
		Log	351	11	97.0	3.0	15,720	2,266	87.4	12.6	\$16,113,181	\$689,569	95.9	4.1
Ophthalmology	70%	Basic	20	179	10.1	89.9	303	163,737	0.2	99.8	\$119,371	\$81,709,118	0.1	99.9
		Log	11	188	5.5	94.5	41	163,999	0.0	100.0	\$14,305	\$81,814,184	0.0	100.0
	80%	Basic	25	174	12.6	87.4	523	163,517	0.3	99.7	\$216,537	\$81,611,952	0.3	99.7
		Log	14	185	7.0	93.0	90	163,950	0.1	99.9	\$32,475	\$81,796,014	0.0	100.0
	90%	Basic	42	157	21.1	78.9	2,103	161,937	1.3	98.7	\$1,025,736	\$80,802,753	1.3	98.7
		Log	26	173	13.1	86.9	558	163,482	0.3	99.7	\$317,655	\$81,510,834	0.4	99.6
Oral/Maxillofacial surgery	70%	Basic	83	.	100.0	.	1,487	.	100.0	.	\$709,670	.	100.0	.
		Log	79	4	95.2	4.8	1,017	470	68.4	31.6	\$578,770	\$130,900	81.6	18.4
	80%	Basic	83	.	100.0	.	1,487	.	100.0	.	\$709,670	.	100.0	.
		Log	81	2	97.6	2.4	1,173	314	78.9	21.1	\$630,340	\$79,330	88.8	11.2
	90%	Basic	83	.	100.0	.	1,487	.	100.0	.	\$709,670	.	100.0	.
		Log	82	1	98.8	1.2	1,323	164	89.0	11.0	\$679,400	\$30,270	95.7	4.3

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Orthopedic surgery	70%	Basic	75	195	27.8	72.2	2,600	58,164	4.3	95.7	\$10,533,306	\$215,595,268	4.7	95.3
		Log	64	206	23.7	76.3	1,464	59,300	2.4	97.6	\$4,942,942	\$221,185,632	2.2	97.8
	80%	Basic	109	161	40.4	59.6	7,453	53,311	12.3	87.7	\$26,338,120	\$199,790,454	11.6	88.4
		Log	92	178	34.1	65.9	4,184	56,580	6.9	93.1	\$17,242,279	\$208,886,295	7.6	92.4
	90%	Basic	196	74	72.6	27.4	28,155	32,609	46.3	53.7	\$98,077,362	\$128,051,212	43.4	56.6
		Log	173	97	64.1	35.9	20,517	40,247	33.8	66.2	\$83,384,531	\$142,744,043	36.9	63.1
Otolaryngology	70%	Basic	96	4	96.0	4.0	24,515	2,796	89.8	10.2	\$12,995,535	\$759,655	94.5	5.5
		Log	19	81	19.0	81.0	282	27,029	1.0	99.0	\$317,520	\$13,437,670	2.3	97.7
	80%	Basic	100	.	100.0	.	27,311	.	100.0	.	\$13,755,190	.	100.0	.
		Log	24	76	24.0	76.0	498	26,813	1.8	98.2	\$488,985	\$13,266,205	3.6	96.4
	90%	Basic	100	.	100.0	.	27,311	.	100.0	.	\$13,755,190	.	100.0	.
		Log	32	68	32.0	68.0	1,438	25,873	5.3	94.7	\$1,855,674	\$11,899,516	13.5	86.5
Podiatry	70%	Basic	36	57	38.7	61.3	8,556	37,036	18.8	81.2	\$2,897,032	\$7,694,438	27.4	72.6
		Log	4	89	4.3	95.7	24	45,568	0.1	99.9	\$3,576	\$10,587,894	0.0	100.0
	80%	Basic	64	29	68.8	31.2	20,088	25,504	44.1	55.9	\$6,072,253	\$4,519,217	57.3	42.7
		Log	6	87	6.5	93.5	109	45,483	0.2	99.8	\$15,990	\$10,575,480	0.2	99.8
	90%	Basic	84	9	90.3	9.7	33,515	12,077	73.5	26.5	\$8,805,771	\$1,785,699	83.1	16.9
		Log	10	83	10.8	89.2	531	45,061	1.2	98.8	\$304,855	\$10,286,615	2.9	97.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Minneapolis, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Psychiatry	70%	Basic	133	115	53.6	46.4	599	7,456	7.4	92.6	\$1,122,411	\$50,724,549	2.2	97.8
		Log	95	153	38.3	61.7	228	7,827	2.8	97.2	\$640,015	\$51,206,945	1.2	98.8
	80%	Basic	164	84	66.1	33.9	1,275	6,780	15.8	84.2	\$2,575,692	\$49,271,268	5.0	95.0
		Log	116	132	46.8	53.2	380	7,675	4.7	95.3	\$904,879	\$50,942,081	1.7	98.3
	90%	Basic	191	57	77.0	23.0	2,255	5,800	28.0	72.0	\$7,734,614	\$44,112,346	14.9	85.1
		Log	152	96	61.3	38.7	927	7,128	11.5	88.5	\$3,398,545	\$48,448,415	6.6	93.4
Pulmonary disease	70%	Basic	87	.	100.0	.	12,928	.	100.0	.	\$21,878,011	.	100.0	.
		Log	32	55	36.8	63.2	1,253	11,675	9.7	90.3	\$4,760,994	\$17,117,017	21.8	78.2
	80%	Basic	87	.	100.0	.	12,928	.	100.0	.	\$21,878,011	.	100.0	.
		Log	50	37	57.5	42.5	3,129	9,799	24.2	75.8	\$10,991,902	\$10,886,109	50.2	49.8
	90%	Basic	87	.	100.0	.	12,928	.	100.0	.	\$21,878,011	.	100.0	.
		Log	72	15	82.8	17.2	7,484	5,444	57.9	42.1	\$16,428,807	\$5,449,204	75.1	24.9
Urology	70%	Basic	34	55	38.2	61.8	1,928	38,561	4.8	95.2	\$3,135,091	\$48,050,265	6.1	93.9
		Log	18	71	20.2	79.8	170	40,319	0.4	99.6	\$252,428	\$50,932,928	0.5	99.5
	80%	Basic	40	49	44.9	55.1	3,771	36,718	9.3	90.7	\$5,214,585	\$45,970,771	10.2	89.8
		Log	25	64	28.1	71.9	587	39,902	1.4	98.6	\$1,299,898	\$49,885,458	2.5	97.5
	90%	Basic	72	17	80.9	19.1	21,896	18,593	54.1	45.9	\$30,639,634	\$20,545,722	59.9	40.1
		Log	31	58	34.8	65.2	1,316	39,173	3.3	96.7	\$2,416,600	\$48,768,756	4.7	95.3

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	2,378	2,461	49.1	50.9	162,488	1,609,267	9.2	90.8	\$159,272,120	\$1,368,821,033	10.4	89.6
		Log	1,108	3,731	22.9	77.1	13,958	1,757,797	0.8	99.2	\$25,893,473	\$1,502,199,680	1.7	98.3
	80%	Basic	2,942	1,897	60.8	39.2	275,974	1,495,781	15.6	84.4	\$277,243,153	\$1,250,850,000	18.1	81.9
		Log	1,523	3,316	31.5	68.5	35,030	1,736,725	2.0	98.0	\$61,196,464	\$1,466,896,689	4.0	96.0
	90%	Basic	3,766	1,073	77.8	22.2	592,502	1,179,253	33.4	66.6	\$563,721,063	\$964,372,090	36.9	63.1
		Log	2,190	2,649	45.3	54.7	94,754	1,677,001	5.3	94.7	\$160,326,860	\$1,367,766,293	10.5	89.5
	<b>Specialty Group</b>	---	Score											
<b>Cardiology</b>	70%	Basic	35	158	18.1	81.9	730	129,087	0.6	99.4	\$1,525,886	\$200,118,108	0.8	99.2
		Log	27	166	14.0	86.0	316	129,501	0.2	99.8	\$1,166,296	\$200,477,698	0.6	99.4
	80%	Basic	48	145	24.9	75.1	1,798	128,019	1.4	98.6	\$4,430,587	\$197,213,407	2.2	97.8
		Log	35	158	18.1	81.9	662	129,155	0.5	99.5	\$2,388,024	\$199,255,970	1.2	98.8
	90%	Basic	63	130	32.6	67.4	4,779	125,038	3.7	96.3	\$11,005,556	\$190,638,438	5.5	94.5
		Log	49	144	25.4	74.6	1,919	127,898	1.5	98.5	\$5,233,357	\$196,410,637	2.6	97.4

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	441	254	63.5	36.5	6,116	18,820	24.5	75.5	\$2,138,311	\$5,397,658	28.4	71.6
		Log	294	401	42.3	57.7	1,999	22,937	8.0	92.0	\$627,665	\$6,908,304	8.3	91.7
	80%	Basic	551	144	79.3	20.7	10,527	14,409	42.2	57.8	\$3,567,843	\$3,968,126	47.3	52.7
		Log	411	284	59.1	40.9	4,561	20,375	18.3	81.7	\$1,500,145	\$6,035,824	19.9	80.1
	90%	Basic	659	36	94.8	5.2	18,292	6,644	73.4	26.6	\$5,812,772	\$1,723,197	77.1	22.9
		Log	591	104	85.0	15.0	12,260	12,676	49.2	50.8	\$3,937,204	\$3,598,765	52.2	47.8
Dermatology	70%	Basic	22	142	13.4	86.6	1,077	136,814	0.8	99.2	\$367,793	\$48,546,154	0.8	99.2
		Log	12	152	7.3	92.7	96	137,795	0.1	99.9	\$25,747	\$48,888,200	0.1	99.9
	80%	Basic	33	131	20.1	79.9	2,044	135,847	1.5	98.5	\$720,833	\$48,193,114	1.5	98.5
		Log	17	147	10.4	89.6	262	137,629	0.2	99.8	\$64,863	\$48,849,084	0.1	99.9
	90%	Basic	51	113	31.1	68.9	5,062	132,829	3.7	96.3	\$1,742,569	\$47,171,378	3.6	96.4
		Log	32	132	19.5	80.5	1,233	136,658	0.9	99.1	\$402,689	\$48,511,258	0.8	99.2
Emergency medicine	70%	Basic	332	1	99.7	0.3	38,442	521	98.7	1.3	\$34,319,888	\$1,736,398	95.2	4.8
		Log	152	181	45.6	54.4	5,098	33,865	13.1	86.9	\$4,826,221	\$31,230,065	13.4	86.6
	80%	Basic	333	.	100.0	.	38,963	.	100.0	.	\$36,056,286	.	100.0	.
		Log	233	100	70.0	30.0	15,338	23,625	39.4	60.6	\$15,074,977	\$20,981,309	41.8	58.2
	90%	Basic	333	.	100.0	.	38,963	.	100.0	.	\$36,056,286	.	100.0	.
		Log	329	4	98.8	1.2	36,851	2,112	94.6	5.4	\$34,283,038	\$1,773,248	95.1	4.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	409	469	46.6	53.4	31,033	255,613	10.8	89.2	\$13,364,831	\$104,793,740	11.3	88.7
		Log	130	748	14.8	85.2	785	285,861	0.3	99.7	\$763,337	\$117,395,234	0.6	99.4
	80%	Basic	545	333	62.1	37.9	61,819	224,827	21.6	78.4	\$24,550,318	\$93,608,253	20.8	79.2
		Log	167	711	19.0	81.0	1,679	284,967	0.6	99.4	\$1,877,036	\$116,281,535	1.6	98.4
	90%	Basic	741	137	84.4	15.6	144,120	142,526	50.3	49.7	\$59,071,493	\$59,087,078	50.0	50.0
		Log	229	649	26.1	73.9	4,419	282,227	1.5	98.5	\$3,274,442	\$114,884,129	2.8	97.2
Gastroenterology	70%	Basic	36	68	34.6	65.4	5,531	60,108	8.4	91.6	\$6,552,692	\$52,157,388	11.2	88.8
		Log	14	90	13.5	86.5	207	65,432	0.3	99.7	\$371,597	\$58,338,483	0.6	99.4
	80%	Basic	52	52	50.0	50.0	13,132	52,507	20.0	80.0	\$15,435,010	\$43,275,070	26.3	73.7
		Log	18	86	17.3	82.7	450	65,189	0.7	99.3	\$642,750	\$58,067,330	1.1	98.9
	90%	Basic	83	21	79.8	20.2	37,375	28,264	56.9	43.1	\$37,142,050	\$21,568,030	63.3	36.7
		Log	24	80	23.1	76.9	1,284	64,355	2.0	98.0	\$1,495,021	\$57,215,059	2.5	97.5
General surgery	70%	Basic	103	62	62.4	37.6	5,062	22,323	18.5	81.5	\$15,643,347	\$51,276,618	23.4	76.6
		Log	63	102	38.2	61.8	1,031	26,354	3.8	96.2	\$4,526,982	\$62,392,983	6.8	93.2
	80%	Basic	128	37	77.6	22.4	9,410	17,975	34.4	65.6	\$31,925,215	\$34,994,750	47.7	52.3
		Log	79	86	47.9	52.1	1,909	25,476	7.0	93.0	\$8,340,298	\$58,579,667	12.5	87.5
	90%	Basic	159	6	96.4	3.6	19,962	7,423	72.9	27.1	\$59,565,450	\$7,354,515	89.0	11.0
		Log	115	50	69.7	30.3	6,139	21,246	22.4	77.6	\$28,427,588	\$38,492,377	42.5	57.5

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	48	55	46.6	53.4	1,415	28,376	4.7	95.3	\$7,594,899	\$149,005,712	4.8	95.2
		Log	32	71	31.1	68.9	488	29,303	1.6	98.4	\$3,119,666	\$153,480,945	2.0	98.0
	80%	Basic	61	42	59.2	40.8	2,762	27,029	9.3	90.7	\$15,036,980	\$141,563,631	9.6	90.4
		Log	44	59	42.7	57.3	1,112	28,679	3.7	96.3	\$7,104,724	\$149,495,887	4.5	95.5
	90%	Basic	74	29	71.8	28.2	5,442	24,349	18.3	81.7	\$34,618,661	\$121,981,950	22.1	77.9
		Log	63	40	61.2	38.8	2,978	26,813	10.0	90.0	\$22,764,481	\$133,836,130	14.5	85.5
Internal medicine	70%	Basic	280	520	35.0	65.0	14,556	429,252	3.3	96.7	\$18,098,656	\$301,096,430	5.7	94.3
		Log	90	710	11.3	88.8	595	443,213	0.1	99.9	\$3,589,373	\$315,605,713	1.1	98.9
	80%	Basic	379	421	47.4	52.6	35,537	408,271	8.0	92.0	\$35,145,993	\$284,049,093	11.0	89.0
		Log	130	670	16.3	83.8	1,476	442,332	0.3	99.7	\$8,134,586	\$311,060,500	2.5	97.5
	90%	Basic	554	246	69.3	30.8	106,004	337,804	23.9	76.1	\$91,882,370	\$227,312,716	28.8	71.2
		Log	178	622	22.3	77.8	3,143	440,665	0.7	99.3	\$13,969,441	\$305,225,645	4.4	95.6
Neurology	70%	Basic	54	65	45.4	54.6	2,232	23,266	8.8	91.2	\$3,552,362	\$30,191,308	10.5	89.5
		Log	25	94	21.0	79.0	215	25,283	0.8	99.2	\$986,179	\$32,757,491	2.9	97.1
	80%	Basic	72	47	60.5	39.5	5,392	20,106	21.1	78.9	\$8,366,758	\$25,376,912	24.8	75.2
		Log	30	89	25.2	74.8	364	25,134	1.4	98.6	\$1,390,730	\$32,352,940	4.1	95.9
	90%	Basic	106	13	89.1	10.9	17,748	7,750	69.6	30.4	\$25,401,476	\$8,342,194	75.3	24.7
		Log	49	70	41.2	58.8	1,426	24,072	5.6	94.4	\$2,634,657	\$31,109,013	7.8	92.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	249	32	88.6	11.4	23,181	15,387	60.1	39.9	\$7,950,241	\$10,999,308	42.0	58.0
		Log	97	184	34.5	65.5	1,580	36,988	4.1	95.9	\$1,734,885	\$17,214,664	9.2	90.8
	80%	Basic	269	12	95.7	4.3	32,391	6,177	84.0	16.0	\$11,693,303	\$7,256,246	61.7	38.3
		Log	130	151	46.3	53.7	3,408	35,160	8.8	91.2	\$2,416,583	\$16,532,966	12.8	87.2
	90%	Basic	278	3	98.9	1.1	37,549	1,019	97.4	2.6	\$17,604,178	\$1,345,371	92.9	7.1
		Log	196	85	69.8	30.2	10,683	27,885	27.7	72.3	\$6,655,555	\$12,293,994	35.1	64.9
Ophthalmology	70%	Basic	33	166	16.6	83.4	460	175,056	0.3	99.7	\$407,910	\$69,907,156	0.6	99.4
		Log	22	177	11.1	88.9	103	175,413	0.1	99.9	\$53,553	\$70,261,513	0.1	99.9
	80%	Basic	42	157	21.1	78.9	1,010	174,506	0.6	99.4	\$772,209	\$69,542,857	1.1	98.9
		Log	28	171	14.1	85.9	242	175,274	0.1	99.9	\$251,023	\$70,064,043	0.4	99.6
	90%	Basic	63	136	31.7	68.3	4,044	171,472	2.3	97.7	\$2,647,366	\$67,667,700	3.8	96.2
		Log	44	155	22.1	77.9	1,111	174,405	0.6	99.4	\$897,919	\$69,417,147	1.3	98.7
Orthopedic surgery	70%	Basic	95	147	39.3	60.7	3,275	59,921	5.2	94.8	\$7,075,650	\$158,724,862	4.3	95.7
		Log	65	177	26.9	73.1	964	62,232	1.5	98.5	\$3,006,692	\$162,793,820	1.8	98.2
	80%	Basic	121	121	50.0	50.0	7,016	56,180	11.1	88.9	\$16,961,623	\$148,838,889	10.2	89.8
		Log	84	158	34.7	65.3	2,112	61,084	3.3	96.7	\$8,288,812	\$157,511,700	5.0	95.0
	90%	Basic	180	62	74.4	25.6	23,704	39,492	37.5	62.5	\$55,427,541	\$110,372,971	33.4	66.6
		Log	126	116	52.1	47.9	7,087	56,109	11.2	88.8	\$23,977,028	\$141,823,484	14.5	85.5

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Otolaryngology	70%	Basic	49	58	45.8	54.2	7,736	36,514	17.5	82.5	\$5,367,411	\$12,736,061	29.6	70.4
		Log	12	95	11.2	88.8	72	44,178	0.2	99.8	\$59,750	\$18,043,722	0.3	99.7
	80%	Basic	59	48	55.1	44.9	11,327	32,923	25.6	74.4	\$7,019,233	\$11,084,239	38.8	61.2
		Log	20	87	18.7	81.3	357	43,893	0.8	99.2	\$302,873	\$17,800,599	1.7	98.3
	90%	Basic	86	21	80.4	19.6	26,810	17,440	60.6	39.4	\$13,123,225	\$4,980,247	72.5	27.5
		Log	27	80	25.2	74.8	861	43,389	1.9	98.1	\$605,159	\$17,498,313	3.3	96.7
Podiatry	70%	Basic	61	116	34.5	65.5	7,400	130,641	5.4	94.6	\$2,778,955	\$21,951,041	11.2	88.8
		Log	15	162	8.5	91.5	112	137,929	0.1	99.9	\$73,329	\$24,656,667	0.3	99.7
	80%	Basic	87	90	49.2	50.8	18,121	119,920	13.1	86.9	\$5,951,165	\$18,778,831	24.1	75.9
		Log	19	158	10.7	89.3	230	137,811	0.2	99.8	\$166,282	\$24,563,714	0.7	99.3
	90%	Basic	126	51	71.2	28.8	52,463	85,578	38.0	62.0	\$13,603,672	\$11,126,324	55.0	45.0
		Log	33	144	18.6	81.4	866	137,175	0.6	99.4	\$295,808	\$24,434,188	1.2	98.8
Psychiatry	70%	Basic	58	49	54.2	45.8	581	6,830	7.8	92.2	\$1,084,009	\$52,356,867	2.0	98.0
		Log	36	71	33.6	66.4	99	7,312	1.3	98.7	\$201,166	\$53,239,710	0.4	99.6
	80%	Basic	66	41	61.7	38.3	1,298	6,113	17.5	82.5	\$3,015,361	\$50,425,515	5.6	94.4
		Log	48	59	44.9	55.1	238	7,173	3.2	96.8	\$577,091	\$52,863,785	1.1	98.9
	90%	Basic	84	23	78.5	21.5	2,310	5,101	31.2	68.8	\$11,469,378	\$41,971,498	21.5	78.5
		Log	60	47	56.1	43.9	536	6,875	7.2	92.8	\$2,772,997	\$50,667,879	5.2	94.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pulmonary disease	70%	Basic	49	36	57.6	42.4	12,643	33,421	27.4	72.6	\$29,421,000	\$52,647,582	35.8	64.2
		Log	11	74	12.9	87.1	71	45,993	0.2	99.8	\$285,144	\$81,783,438	0.3	99.7
	80%	Basic	65	20	76.5	23.5	21,551	24,513	46.8	53.2	\$52,847,911	\$29,220,671	64.4	35.6
		Log	14	71	16.5	83.5	280	45,784	0.6	99.4	\$1,684,718	\$80,383,864	2.1	97.9
	90%	Basic	82	3	96.5	3.5	40,581	5,483	88.1	11.9	\$77,319,477	\$4,749,105	94.2	5.8
		Log	18	67	21.2	78.8	697	45,367	1.5	98.5	\$5,657,154	\$76,411,428	6.9	93.1
Urology	70%	Basic	24	63	27.6	72.4	1,018	47,317	2.1	97.9	\$2,028,279	\$45,178,642	4.3	95.7
		Log	11	76	12.6	87.4	127	48,208	0.3	99.7	\$475,891	\$46,731,030	1.0	99.0
	80%	Basic	31	56	35.6	64.4	1,876	46,459	3.9	96.1	\$3,746,525	\$43,460,396	7.9	92.1
		Log	16	71	18.4	81.6	350	47,985	0.7	99.3	\$990,949	\$46,215,972	2.1	97.9
	90%	Basic	44	43	50.6	49.4	7,294	41,041	15.1	84.9	\$10,227,543	\$36,979,378	21.7	78.3
		Log	27	60	31.0	69.0	1,261	47,074	2.6	97.4	\$3,043,322	\$44,163,599	6.4	93.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	2,531	2,271	52.7	47.3	187,639	1,410,899	11.7	88.3	\$194,185,697	\$1,239,804,753	13.5	86.5
		Log	1,110	3,692	23.1	76.9	14,611	1,583,927	0.9	99.1	\$33,203,174	\$1,400,787,276	2.3	97.7
	80%	Basic	3,126	1,676	65.1	34.9	324,389	1,274,149	20.3	79.7	\$330,327,193	\$1,103,663,257	23.0	77.0
		Log	1,515	3,287	31.5	68.5	34,028	1,564,510	2.1	97.9	\$67,917,124	\$1,366,073,326	4.7	95.3
	90%	Basic	3,880	922	80.8	19.2	653,206	945,332	40.9	59.1	\$644,646,415	\$789,344,035	45.0	55.0
		Log	2,210	2,592	46.0	54.0	92,449	1,506,089	5.8	94.2	\$171,671,182	\$1,262,319,268	12.0	88.0
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	47	152	23.6	76.4	1,302	114,319	1.1	98.9	\$3,496,386	\$175,397,261	2.0	98.0
		Log	35	164	17.6	82.4	504	115,117	0.4	99.6	\$1,930,774	\$176,962,873	1.1	98.9
	80%	Basic	57	142	28.6	71.4	2,554	113,067	2.2	97.8	\$5,729,492	\$173,164,155	3.2	96.8
		Log	44	155	22.1	77.9	1,015	114,606	0.9	99.1	\$3,426,919	\$175,466,728	1.9	98.1
	90%	Basic	83	116	41.7	58.3	9,113	106,508	7.9	92.1	\$19,017,282	\$159,876,365	10.6	89.4
		Log	56	143	28.1	71.9	2,414	113,207	2.1	97.9	\$6,924,990	\$171,968,657	3.9	96.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	412	247	62.5	37.5	5,222	16,731	23.8	76.2	\$1,704,034	\$4,958,208	25.6	74.4
		Log	273	386	41.4	58.6	1,800	20,153	8.2	91.8	\$482,501	\$6,179,741	7.2	92.8
	80%	Basic	535	124	81.2	18.8	9,996	11,957	45.5	54.5	\$3,385,520	\$3,276,722	50.8	49.2
		Log	382	277	58.0	42.0	3,996	17,957	18.2	81.8	\$1,202,192	\$5,460,050	18.0	82.0
	90%	Basic	621	38	94.2	5.8	15,973	5,980	72.8	27.2	\$5,160,350	\$1,501,892	77.5	22.5
		Log	560	99	85.0	15.0	10,988	10,965	50.1	49.9	\$3,678,062	\$2,984,180	55.2	44.8
Dermatology	70%	Basic	18	152	10.6	89.4	297	140,204	0.2	99.8	\$97,976	\$55,717,316	0.2	99.8
		Log	13	157	7.6	92.4	123	140,378	0.1	99.9	\$51,212	\$55,764,080	0.1	99.9
	80%	Basic	25	145	14.7	85.3	694	139,807	0.5	99.5	\$216,909	\$55,598,383	0.4	99.6
		Log	17	153	10.0	90.0	244	140,257	0.2	99.8	\$84,444	\$55,730,848	0.2	99.8
	90%	Basic	42	128	24.7	75.3	3,186	137,315	2.3	97.7	\$1,022,760	\$54,792,532	1.8	98.2
		Log	25	145	14.7	85.3	669	139,832	0.5	99.5	\$241,612	\$55,573,680	0.4	99.6
Emergency medicine	70%	Basic	331	3	99.1	0.9	34,632	1,627	95.5	4.5	\$33,967,871	\$1,470,997	95.8	4.2
		Log	167	167	50.0	50.0	5,443	30,816	15.0	85.0	\$5,707,289	\$29,731,579	16.1	83.9
	80%	Basic	334	.	100.0	.	36,259	.	100.0	.	\$35,438,868	.	100.0	.
		Log	241	93	72.2	27.8	14,363	21,896	39.6	60.4	\$13,597,732	\$21,841,136	38.4	61.6
	90%	Basic	334	.	100.0	.	36,259	.	100.0	.	\$35,438,868	.	100.0	.
		Log	329	5	98.5	1.5	33,129	3,130	91.4	8.6	\$30,935,545	\$4,503,323	87.3	12.7

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	499	334	59.9	40.1	54,485	188,665	22.4	77.6	\$26,477,742	\$69,294,198	27.6	72.4
		Log	110	723	13.2	86.8	809	242,341	0.3	99.7	\$705,803	\$95,066,137	0.7	99.3
	80%	Basic	618	215	74.2	25.8	93,009	150,141	38.3	61.7	\$39,824,282	\$55,947,658	41.6	58.4
		Log	145	688	17.4	82.6	1,858	241,292	0.8	99.2	\$2,664,966	\$93,106,974	2.8	97.2
	90%	Basic	769	64	92.3	7.7	172,607	70,543	71.0	29.0	\$70,547,045	\$25,224,895	73.7	26.3
		Log	246	587	29.5	70.5	7,613	235,537	3.1	96.9	\$6,104,084	\$89,667,856	6.4	93.6
Gastroenterology	70%	Basic	49	54	47.6	52.4	10,067	47,594	17.5	82.5	\$10,682,959	\$39,822,778	21.2	78.8
		Log	11	92	10.7	89.3	189	57,472	0.3	99.7	\$550,348	\$49,955,389	1.1	98.9
	80%	Basic	72	31	69.9	30.1	23,598	34,063	40.9	59.1	\$27,243,109	\$23,262,628	53.9	46.1
		Log	14	89	13.6	86.4	354	57,307	0.6	99.4	\$700,516	\$49,805,221	1.4	98.6
	90%	Basic	94	9	91.3	8.7	43,344	14,317	75.2	24.8	\$41,206,283	\$9,299,454	81.6	18.4
		Log	27	76	26.2	73.8	2,136	55,525	3.7	96.3	\$3,275,242	\$47,230,495	6.5	93.5
General surgery	70%	Basic	101	61	62.3	37.7	4,517	18,543	19.6	80.4	\$15,310,731	\$45,643,996	25.1	74.9
		Log	71	91	43.8	56.2	1,416	21,644	6.1	93.9	\$7,660,795	\$53,293,932	12.6	87.4
	80%	Basic	130	32	80.2	19.8	9,373	13,687	40.6	59.4	\$30,086,803	\$30,867,924	49.4	50.6
		Log	87	75	53.7	46.3	2,364	20,696	10.3	89.7	\$11,698,161	\$49,256,566	19.2	80.8
	90%	Basic	157	5	96.9	3.1	19,639	3,421	85.2	14.8	\$55,182,028	\$5,772,699	90.5	9.5
		Log	125	37	77.2	22.8	6,924	16,136	30.0	70.0	\$32,488,191	\$28,466,536	53.3	46.7

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	51	56	47.7	52.3	1,657	26,613	5.9	94.1	\$11,212,694	\$138,133,092	7.5	92.5
		Log	30	77	28.0	72.0	427	27,843	1.5	98.5	\$3,408,733	\$145,937,053	2.3	97.7
	80%	Basic	64	43	59.8	40.2	3,234	25,036	11.4	88.6	\$20,792,426	\$128,553,360	13.9	86.1
		Log	44	63	41.1	58.9	1,089	27,181	3.9	96.1	\$7,641,614	\$141,704,172	5.1	94.9
	90%	Basic	79	28	73.8	26.2	6,580	21,690	23.3	76.7	\$39,828,280	\$109,517,506	26.7	73.3
		Log	63	44	58.9	41.1	2,966	25,304	10.5	89.5	\$23,334,531	\$126,011,255	15.6	84.4
Internal medicine	70%	Basic	366	473	43.6	56.4	23,245	366,817	6.0	94.0	\$29,826,923	\$276,307,524	9.7	90.3
		Log	109	730	13.0	87.0	609	389,453	0.2	99.8	\$3,557,177	\$302,577,270	1.2	98.8
	80%	Basic	475	364	56.6	43.4	51,264	338,798	13.1	86.9	\$49,756,130	\$256,378,317	16.3	83.7
		Log	152	687	18.1	81.9	1,406	388,656	0.4	99.6	\$8,706,543	\$297,427,904	2.8	97.2
	90%	Basic	657	182	78.3	21.7	150,296	239,766	38.5	61.5	\$145,593,047	\$160,541,400	47.6	52.4
		Log	202	637	24.1	75.9	2,969	387,093	0.8	99.2	\$14,533,072	\$291,601,375	4.7	95.3
Neurology	70%	Basic	51	69	42.5	57.5	1,747	22,120	7.3	92.7	\$3,984,176	\$29,731,091	11.8	88.2
		Log	21	99	17.5	82.5	142	23,725	0.6	99.4	\$615,508	\$33,099,759	1.8	98.2
	80%	Basic	70	50	58.3	41.7	4,633	19,234	19.4	80.6	\$7,608,345	\$26,106,922	22.6	77.4
		Log	30	90	25.0	75.0	338	23,529	1.4	98.6	\$1,569,904	\$32,145,363	4.7	95.3
	90%	Basic	94	26	78.3	21.7	11,760	12,107	49.3	50.7	\$19,890,405	\$13,824,862	59.0	41.0
		Log	42	78	35.0	65.0	795	23,072	3.3	96.7	\$2,267,743	\$31,447,524	6.7	93.3

***Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores***

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	233	49	82.6	17.4	18,844	15,980	54.1	45.9	\$7,225,023	\$9,643,881	42.8	57.2
		Log	90	192	31.9	68.1	1,187	33,637	3.4	96.6	\$1,686,248	\$15,182,656	10.0	90.0
	80%	Basic	261	21	92.6	7.4	26,533	8,291	76.2	23.8	\$10,976,610	\$5,892,294	65.1	34.9
		Log	123	159	43.6	56.4	2,720	32,104	7.8	92.2	\$2,456,484	\$14,412,420	14.6	85.4
	90%	Basic	275	7	97.5	2.5	33,238	1,586	95.4	4.6	\$15,742,211	\$1,126,693	93.3	6.7
		Log	184	98	65.2	34.8	7,907	26,917	22.7	77.3	\$5,201,880	\$11,667,024	30.8	69.2
Ophthalmology	70%	Basic	38	164	18.8	81.2	671	163,745	0.4	99.6	\$405,671	\$67,130,507	0.6	99.4
		Log	23	179	11.4	88.6	169	164,247	0.1	99.9	\$118,510	\$67,417,668	0.2	99.8
	80%	Basic	48	154	23.8	76.2	1,445	162,971	0.9	99.1	\$789,935	\$66,746,243	1.2	98.8
		Log	29	173	14.4	85.6	302	164,114	0.2	99.8	\$190,775	\$67,345,403	0.3	99.7
	90%	Basic	67	135	33.2	66.8	4,062	160,354	2.5	97.5	\$2,152,502	\$65,383,676	3.2	96.8
		Log	47	155	23.3	76.7	1,257	163,159	0.8	99.2	\$666,735	\$66,869,443	1.0	99.0
Orthopedic surgery	70%	Basic	87	143	37.8	62.2	3,125	54,958	5.4	94.6	\$7,636,315	\$158,921,229	4.6	95.4
		Log	64	166	27.8	72.2	1,120	56,963	1.9	98.1	\$4,783,633	\$161,773,911	2.9	97.1
	80%	Basic	114	116	49.6	50.4	6,650	51,433	11.4	88.6	\$18,680,145	\$147,877,399	11.2	88.8
		Log	83	147	36.1	63.9	2,418	55,665	4.2	95.8	\$9,209,946	\$157,347,598	5.5	94.5
	90%	Basic	175	55	76.1	23.9	23,406	34,677	40.3	59.7	\$63,536,984	\$103,020,560	38.1	61.9
		Log	123	107	53.5	46.5	7,720	50,363	13.3	86.7	\$26,919,946	\$139,637,598	16.2	83.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Otolaryngology	70%	Basic	47	54	46.5	53.5	6,998	33,493	17.3	82.7	\$4,956,047	\$12,126,861	29.0	71.0
		Log	12	89	11.9	88.1	170	40,321	0.4	99.6	\$293,221	\$16,789,687	1.7	98.3
	80%	Basic	58	43	57.4	42.6	12,000	28,491	29.6	70.4	\$7,331,515	\$9,751,393	42.9	57.1
		Log	17	84	16.8	83.2	305	40,186	0.8	99.2	\$339,293	\$16,743,615	2.0	98.0
	90%	Basic	79	22	78.2	21.8	22,008	18,483	54.4	45.6	\$11,618,967	\$5,463,941	68.0	32.0
		Log	26	75	25.7	74.3	794	39,697	2.0	98.0	\$739,953	\$16,342,955	4.3	95.7
Podiatry	70%	Basic	59	114	34.1	65.9	9,115	114,689	7.4	92.6	\$3,144,299	\$18,139,093	14.8	85.2
		Log	13	160	7.5	92.5	98	123,706	0.1	99.9	\$31,970	\$21,251,422	0.2	99.8
	80%	Basic	84	89	48.6	51.4	19,472	104,332	15.7	84.3	\$5,949,250	\$15,334,142	28.0	72.0
		Log	17	156	9.8	90.2	189	123,615	0.2	99.8	\$68,821	\$21,214,571	0.3	99.7
	90%	Basic	127	46	73.4	26.6	48,718	75,086	39.4	60.6	\$11,356,816	\$9,926,576	53.4	46.6
		Log	31	142	17.9	82.1	1,028	122,776	0.8	99.2	\$861,154	\$20,422,238	4.0	96.0
Psychiatry	70%	Basic	74	41	64.3	35.7	703	5,294	11.7	88.3	\$3,303,533	\$43,818,515	7.0	93.0
		Log	46	69	40.0	60.0	143	5,854	2.4	97.6	\$577,406	\$46,544,642	1.2	98.8
	80%	Basic	85	30	73.9	26.1	1,239	4,758	20.7	79.3	\$7,228,295	\$39,893,753	15.3	84.7
		Log	58	57	50.4	49.6	289	5,708	4.8	95.2	\$1,654,026	\$45,468,022	3.5	96.5
	90%	Basic	96	19	83.5	16.5	2,008	3,989	33.5	66.5	\$15,903,302	\$31,218,746	33.7	66.3
		Log	78	37	67.8	32.2	767	5,230	12.8	87.2	\$6,454,945	\$40,667,103	13.7	86.3

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Orange County, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pulmonary disease	70%	Basic	47	40	54.0	46.0	9,696	34,119	22.1	77.9	\$28,897,028	\$52,074,082	35.7	64.3
		Log	12	75	13.8	86.2	143	43,672	0.3	99.7	\$882,963	\$80,088,147	1.1	98.9
	80%	Basic	65	22	74.7	25.3	19,675	24,140	44.9	55.1	\$54,641,595	\$26,329,515	67.5	32.5
		Log	15	72	17.2	82.8	247	43,568	0.6	99.4	\$1,457,125	\$79,513,985	1.8	98.2
	90%	Basic	87	.	100.0	.	43,815	.	100.0	.	\$80,971,110	.	100.0	.
		Log	18	69	20.7	79.3	494	43,321	1.1	98.9	\$3,024,892	\$77,946,218	3.7	96.3
Urology	70%	Basic	21	65	24.4	75.6	1,316	45,388	2.8	97.2	\$1,856,289	\$41,474,124	4.3	95.7
		Log	10	76	11.6	88.4	119	46,585	0.3	99.7	\$159,083	\$43,171,330	0.4	99.6
	80%	Basic	31	55	36.0	64.0	2,761	43,943	5.9	94.1	\$4,647,964	\$38,682,449	10.7	89.3
		Log	17	69	19.8	80.2	531	46,173	1.1	98.9	\$1,247,663	\$42,082,750	2.9	97.1
	90%	Basic	44	42	51.2	48.8	7,194	39,510	15.4	84.6	\$10,478,175	\$32,852,238	24.2	75.8
		Log	28	58	32.6	67.4	1,879	44,825	4.0	96.0	\$4,018,605	\$39,311,808	9.3	90.7

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	2,337	3,281	41.6	58.4	164,083	1,968,879	7.7	92.3	\$162,749,514	\$1,694,741,104	8.8	91.2
		Log	1,041	4,577	18.5	81.5	9,790	2,123,172	0.5	99.5	\$22,223,602	\$1,835,267,016	1.2	98.8
	80%	Basic	2,960	2,658	52.7	47.3	287,261	1,845,701	13.5	86.5	\$272,099,061	\$1,585,391,557	14.6	85.4
		Log	1,424	4,194	25.3	74.7	21,266	2,111,696	1.0	99.0	\$48,442,560	\$1,809,048,058	2.6	97.4
	90%	Basic	4,004	1,614	71.3	28.7	603,852	1,529,110	28.3	71.7	\$582,132,162	\$1,275,358,456	31.3	68.7
		Log	2,131	3,487	37.9	62.1	62,297	2,070,665	2.9	97.1	\$135,601,574	\$1,721,889,044	7.3	92.7
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	45	222	16.9	83.1	649	154,596	0.4	99.6	\$1,382,735	\$314,468,503	0.4	99.6
		Log	34	233	12.7	87.3	276	154,969	0.2	99.8	\$757,111	\$315,094,127	0.2	99.8
	80%	Basic	61	206	22.8	77.2	1,672	153,573	1.1	98.9	\$3,081,731	\$312,769,507	1.0	99.0
		Log	43	224	16.1	83.9	545	154,700	0.4	99.6	\$1,498,693	\$314,352,545	0.5	99.5
	90%	Basic	81	186	30.3	69.7	3,776	151,469	2.4	97.6	\$8,844,445	\$307,006,793	2.8	97.2
		Log	63	204	23.6	76.4	1,685	153,560	1.1	98.9	\$5,037,876	\$310,813,362	1.6	98.4

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	329	539	37.9	62.1	2,968	43,634	6.4	93.6	\$1,613,301	\$17,492,912	8.4	91.6
		Log	261	607	30.1	69.9	1,566	45,036	3.4	96.6	\$832,933	\$18,273,280	4.4	95.6
	80%	Basic	441	427	50.8	49.2	5,782	40,820	12.4	87.6	\$2,908,829	\$16,197,384	15.2	84.8
		Log	368	500	42.4	57.6	3,386	43,216	7.3	92.7	\$1,816,265	\$17,289,948	9.5	90.5
	90%	Basic	673	195	77.5	22.5	16,545	30,057	35.5	64.5	\$8,154,306	\$10,951,907	42.7	57.3
		Log	583	285	67.2	32.8	10,930	35,672	23.5	76.5	\$5,366,061	\$13,740,152	28.1	71.9
Dermatology	70%	Basic	7	117	5.6	94.4	95	178,552	0.1	99.9	\$57,995	\$56,309,583	0.1	99.9
		Log	5	119	4.0	96.0	49	178,598	0.0	100.0	\$42,405	\$56,325,173	0.1	99.9
	80%	Basic	12	112	9.7	90.3	585	178,062	0.3	99.7	\$135,160	\$56,232,418	0.2	99.8
		Log	7	117	5.6	94.4	95	178,552	0.1	99.9	\$57,995	\$56,309,583	0.1	99.9
	90%	Basic	21	103	16.9	83.1	1,480	177,167	0.8	99.2	\$384,134	\$55,983,444	0.7	99.3
		Log	13	111	10.5	89.5	460	178,187	0.3	99.7	\$126,392	\$56,241,186	0.2	99.8
Emergency medicine	70%	Basic	300	63	82.6	17.4	33,581	29,187	53.5	46.5	\$26,494,554	\$14,508,326	64.6	35.4
		Log	53	310	14.6	85.4	568	62,200	0.9	99.1	\$769,131	\$40,233,749	1.9	98.1
	80%	Basic	345	18	95.0	5.0	45,478	17,290	72.5	27.5	\$35,693,204	\$5,309,676	87.1	12.9
		Log	78	285	21.5	78.5	1,424	61,344	2.3	97.7	\$1,483,916	\$39,518,964	3.6	96.4
	90%	Basic	361	2	99.4	0.6	53,151	9,617	84.7	15.3	\$40,339,780	\$663,100	98.4	1.6
		Log	137	226	37.7	62.3	5,854	56,914	9.3	90.7	\$5,111,705	\$35,891,175	12.5	87.5

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	485	504	49.0	51.0	46,062	367,978	11.1	88.9	\$19,033,332	\$100,423,774	15.9	84.1
		Log	123	866	12.4	87.6	1,040	413,000	0.3	99.7	\$1,423,977	\$118,033,129	1.2	98.8
	80%	Basic	636	353	64.3	35.7	94,420	319,620	22.8	77.2	\$34,241,522	\$85,215,584	28.7	71.3
		Log	172	817	17.4	82.6	2,090	411,950	0.5	99.5	\$2,051,525	\$117,405,581	1.7	98.3
	90%	Basic	846	143	85.5	14.5	212,532	201,508	51.3	48.7	\$66,059,634	\$53,397,472	55.3	44.7
		Log	264	725	26.7	73.3	6,358	407,682	1.5	98.5	\$4,577,586	\$114,879,520	3.8	96.2
Gastroenterology	70%	Basic	38	106	26.4	73.6	2,470	62,432	3.8	96.2	\$3,265,398	\$54,252,225	5.7	94.3
		Log	19	125	13.2	86.8	228	64,674	0.4	99.6	\$597,615	\$56,920,008	1.0	99.0
	80%	Basic	57	87	39.6	60.4	6,853	58,049	10.6	89.4	\$7,819,576	\$49,698,047	13.6	86.4
		Log	24	120	16.7	83.3	422	64,480	0.7	99.3	\$1,038,806	\$56,478,817	1.8	98.2
	90%	Basic	107	37	74.3	25.7	27,710	37,192	42.7	57.3	\$26,871,911	\$30,645,712	46.7	53.3
		Log	32	112	22.2	77.8	1,072	63,830	1.7	98.3	\$1,538,686	\$55,978,937	2.7	97.3
General surgery	70%	Basic	121	101	54.5	45.5	4,737	32,443	12.7	87.3	\$20,100,032	\$98,178,186	17.0	83.0
		Log	77	145	34.7	65.3	983	36,197	2.6	97.4	\$6,457,113	\$111,821,105	5.5	94.5
	80%	Basic	154	68	69.4	30.6	9,850	27,330	26.5	73.5	\$37,213,987	\$81,064,231	31.5	68.5
		Log	98	124	44.1	55.9	1,972	35,208	5.3	94.7	\$12,226,326	\$106,051,892	10.3	89.7
	90%	Basic	208	14	93.7	6.3	24,753	12,427	66.6	33.4	\$87,287,422	\$30,990,796	73.8	26.2
		Log	137	85	61.7	38.3	5,680	31,500	15.3	84.7	\$32,958,507	\$85,319,711	27.9	72.1

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	36	77	31.9	68.1	1,050	28,123	3.6	96.4	\$5,327,191	\$138,861,083	3.7	96.3
		Log	20	93	17.7	82.3	264	28,909	0.9	99.1	\$1,508,192	\$142,680,082	1.0	99.0
	80%	Basic	53	60	46.9	53.1	2,682	26,491	9.2	90.8	\$15,928,831	\$128,259,443	11.0	89.0
		Log	31	82	27.4	72.6	697	28,476	2.4	97.6	\$4,710,707	\$139,477,567	3.3	96.7
	90%	Basic	83	30	73.5	26.5	9,129	20,044	31.3	68.7	\$55,984,453	\$88,203,821	38.8	61.2
		Log	52	61	46.0	54.0	2,455	26,718	8.4	91.6	\$18,485,653	\$125,702,621	12.8	87.2
Internal medicine	70%	Basic	242	748	24.4	75.6	5,405	466,620	1.1	98.9	\$15,147,198	\$328,067,208	4.4	95.6
		Log	86	904	8.7	91.3	273	471,752	0.1	99.9	\$1,623,769	\$341,590,637	0.5	99.5
	80%	Basic	339	651	34.2	65.8	10,821	461,204	2.3	97.7	\$30,683,294	\$312,531,112	8.9	91.1
		Log	125	865	12.6	87.4	638	471,387	0.1	99.9	\$3,868,658	\$339,345,748	1.1	98.9
	90%	Basic	529	461	53.4	46.6	43,476	428,549	9.2	90.8	\$81,654,118	\$261,560,288	23.8	76.2
		Log	202	788	20.4	79.6	2,071	469,954	0.4	99.6	\$13,886,874	\$329,327,532	4.0	96.0
Neurology	70%	Basic	45	88	33.8	66.2	2,402	33,049	6.8	93.2	\$2,810,932	\$40,400,170	6.5	93.5
		Log	22	111	16.5	83.5	156	35,295	0.4	99.6	\$371,214	\$42,839,888	0.9	99.1
	80%	Basic	62	71	46.6	53.4	5,544	29,907	15.6	84.4	\$7,741,766	\$35,469,336	17.9	82.1
		Log	33	100	24.8	75.2	570	34,881	1.6	98.4	\$1,006,315	\$42,204,787	2.3	97.7
	90%	Basic	97	36	72.9	27.1	15,026	20,425	42.4	57.6	\$18,993,478	\$24,217,624	44.0	56.0
		Log	50	83	37.6	62.4	1,827	33,624	5.2	94.8	\$3,126,160	\$40,084,942	7.2	92.8

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Obstetrics/gynecology	70%	Basic	314	41	88.5	11.5	17,320	18,371	48.5	51.5	\$9,185,107	\$15,121,647	37.8	62.2
		Log	191	164	53.8	46.2	3,210	32,481	9.0	91.0	\$3,791,229	\$20,515,525	15.6	84.4
	80%	Basic	337	18	94.9	5.1	24,353	11,338	68.2	31.8	\$12,760,483	\$11,546,271	52.5	47.5
		Log	234	121	65.9	34.1	6,118	29,573	17.1	82.9	\$8,086,059	\$16,220,695	33.3	66.7
	90%	Basic	353	2	99.4	0.6	33,650	2,041	94.3	5.7	\$19,886,581	\$4,420,173	81.8	18.2
		Log	295	60	83.1	16.9	12,628	23,063	35.4	64.6	\$10,746,137	\$13,560,617	44.2	55.8
Ophthalmology	70%	Basic	11	163	6.3	93.7	187	212,058	0.1	99.9	\$92,888	\$95,636,997	0.1	99.9
		Log	7	167	4.0	96.0	42	212,203	0.0	100.0	\$26,323	\$95,703,562	0.0	100.0
	80%	Basic	13	161	7.5	92.5	273	211,972	0.1	99.9	\$113,232	\$95,616,653	0.1	99.9
		Log	10	164	5.7	94.3	99	212,146	0.0	100.0	\$52,379	\$95,677,506	0.1	99.9
	90%	Basic	20	154	11.5	88.5	903	211,342	0.4	99.6	\$366,626	\$95,363,259	0.4	99.6
		Log	12	162	6.9	93.1	204	212,041	0.1	99.9	\$105,270	\$95,624,615	0.1	99.9
Orthopedic surgery	70%	Basic	53	214	19.9	80.1	1,452	77,674	1.8	98.2	\$2,366,580	\$244,336,451	1.0	99.0
		Log	40	227	15.0	85.0	537	78,589	0.7	99.3	\$1,719,479	\$244,983,552	0.7	99.3
	80%	Basic	78	189	29.2	70.8	4,716	74,410	6.0	94.0	\$9,341,004	\$237,362,027	3.8	96.2
		Log	57	210	21.3	78.7	1,555	77,571	2.0	98.0	\$6,565,538	\$240,137,493	2.7	97.3
	90%	Basic	144	123	53.9	46.1	18,154	60,972	22.9	77.1	\$43,664,627	\$203,038,404	17.7	82.3
		Log	97	170	36.3	63.7	6,556	72,570	8.3	91.7	\$24,283,858	\$222,419,173	9.8	90.2

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Otolaryngology	70%	Basic	64	26	71.1	28.9	14,024	22,014	38.9	61.1	\$9,534,294	\$8,645,914	52.4	47.6
		Log	9	81	10.0	90.0	95	35,943	0.3	99.7	\$192,505	\$17,987,703	1.1	98.9
	80%	Basic	79	11	87.8	12.2	24,148	11,890	67.0	33.0	\$13,320,593	\$4,859,615	73.3	26.7
		Log	13	77	14.4	85.6	208	35,830	0.6	99.4	\$250,801	\$17,929,407	1.4	98.6
	90%	Basic	90	.	100.0	.	36,038	.	100.0	.	\$18,180,208	.	100.0	.
		Log	24	66	26.7	73.3	774	35,264	2.1	97.9	\$603,642	\$17,576,566	3.3	96.7
Podiatry	70%	Basic	49	108	31.2	68.8	7,569	144,879	5.0	95.0	\$2,760,443	\$26,649,481	9.4	90.6
		Log	8	149	5.1	94.9	60	152,388	0.0	100.0	\$10,310	\$29,399,614	0.0	100.0
	80%	Basic	65	92	41.4	58.6	16,425	136,023	10.8	89.2	\$4,665,842	\$24,744,082	15.9	84.1
		Log	17	140	10.8	89.2	402	152,046	0.3	99.7	\$276,564	\$29,133,360	0.9	99.1
	90%	Basic	102	55	65.0	35.0	47,824	104,624	31.4	68.6	\$12,242,164	\$17,167,760	41.6	58.4
		Log	25	132	15.9	84.1	1,115	151,333	0.7	99.3	\$442,594	\$28,967,330	1.5	98.5
Psychiatry	70%	Basic	98	66	59.8	40.2	405	4,805	7.8	92.2	\$814,030	\$46,110,937	1.7	98.3
		Log	65	99	39.6	60.4	127	5,083	2.4	97.6	\$161,127	\$46,763,840	0.3	99.7
	80%	Basic	113	51	68.9	31.1	703	4,507	13.5	86.5	\$2,468,838	\$44,456,129	5.3	94.7
		Log	84	80	51.2	48.8	226	4,984	4.3	95.7	\$497,279	\$46,427,688	1.1	98.9
	90%	Basic	134	30	81.7	18.3	1,429	3,781	27.4	72.6	\$12,841,392	\$34,083,575	27.4	72.6
		Log	102	62	62.2	37.8	429	4,781	8.2	91.8	\$1,227,263	\$45,697,704	2.6	97.4

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2003-2004

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pulmonary disease	70%	Basic	82	26	75.9	24.1	22,378	25,840	46.4	53.6	\$41,056,032	\$21,398,226	65.7	34.3
		Log	14	94	13.0	87.0	154	48,064	0.3	99.7	\$1,800,427	\$60,653,831	2.9	97.1
	80%	Basic	94	14	87.0	13.0	30,438	17,780	63.1	36.9	\$49,935,689	\$12,518,569	80.0	20.0
		Log	20	88	18.5	81.5	447	47,771	0.9	99.1	\$2,518,747	\$59,935,511	4.0	96.0
	90%	Basic	107	1	99.1	0.9	43,189	5,029	89.6	10.4	\$60,743,052	\$1,711,206	97.3	2.7
		Log	26	82	24.1	75.9	1,075	47,143	2.2	97.8	\$6,746,456	\$55,707,802	10.8	89.2
Urology	70%	Basic	18	72	20.0	80.0	1,329	66,624	2.0	98.0	\$1,707,472	\$73,879,481	2.3	97.7
		Log	7	83	7.8	92.2	162	67,791	0.2	99.8	\$138,742	\$75,448,211	0.2	99.8
	80%	Basic	21	69	23.3	76.7	2,518	65,435	3.7	96.3	\$4,045,480	\$71,541,473	5.4	94.6
		Log	10	80	11.1	88.9	372	67,581	0.5	99.5	\$435,987	\$75,150,966	0.6	99.4
	90%	Basic	48	42	53.3	46.7	15,087	52,866	22.2	77.8	\$19,633,831	\$55,953,122	26.0	74.0
		Log	17	73	18.9	81.1	1,124	66,829	1.7	98.3	\$1,230,854	\$74,356,099	1.6	98.4

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>All</b>	---	Score												
	70%	Basic	2,721	3,319	45.0	55.0	200,702	1,742,682	10.3	89.7	\$209,664,974	\$1,620,163,470	11.5	88.5
		Log	1,223	4,817	20.2	79.8	12,120	1,931,264	0.6	99.4	\$38,171,957	\$1,791,656,487	2.1	97.9
	80%	Basic	3,431	2,609	56.8	43.2	324,333	1,619,051	16.7	83.3	\$324,260,702	\$1,505,567,742	17.7	82.3
		Log	1,622	4,418	26.9	73.1	26,975	1,916,409	1.4	98.6	\$75,696,470	\$1,754,131,974	4.1	95.9
	90%	Basic	4,503	1,537	74.6	25.4	619,354	1,324,030	31.9	68.1	\$613,886,361	\$1,215,942,083	33.5	66.5
		Log	2,524	3,516	41.8	58.2	87,379	1,856,005	4.5	95.5	\$207,237,331	\$1,622,591,113	11.3	88.7
<b>Specialty Group</b>	---	Score												
<b>Cardiology</b>	70%	Basic	44	255	14.7	85.3	473	145,556	0.3	99.7	\$1,219,992	\$326,307,918	0.4	99.6
		Log	37	262	12.4	87.6	257	145,772	0.2	99.8	\$944,386	\$326,583,524	0.3	99.7
	80%	Basic	58	241	19.4	80.6	1,069	144,960	0.7	99.3	\$3,788,416	\$323,739,494	1.2	98.8
		Log	47	252	15.7	84.3	515	145,514	0.4	99.6	\$1,773,857	\$325,754,053	0.5	99.5
	90%	Basic	81	218	27.1	72.9	3,379	142,650	2.3	97.7	\$10,263,091	\$317,264,819	3.1	96.9
		Log	65	234	21.7	78.3	1,517	144,512	1.0	99.0	\$7,017,074	\$320,510,836	2.1	97.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiropractic	70%	Basic	381	478	44.4	55.6	3,391	35,109	8.8	91.2	\$1,604,328	\$13,394,106	10.7	89.3
		Log	287	572	33.4	66.6	1,736	36,764	4.5	95.5	\$847,837	\$14,150,597	5.7	94.3
	80%	Basic	529	330	61.6	38.4	7,517	30,983	19.5	80.5	\$3,332,422	\$11,666,012	22.2	77.8
		Log	412	447	48.0	52.0	4,011	34,489	10.4	89.6	\$1,819,790	\$13,178,644	12.1	87.9
	90%	Basic	734	125	85.4	14.6	18,478	20,022	48.0	52.0	\$7,870,826	\$7,127,608	52.5	47.5
		Log	638	221	74.3	25.7	12,247	26,253	31.8	68.2	\$5,307,061	\$9,691,373	35.4	64.6
Dermatology	70%	Basic	19	124	13.3	86.7	391	177,077	0.2	99.8	\$119,011	\$61,553,963	0.2	99.8
		Log	13	130	9.1	90.9	120	177,348	0.1	99.9	\$90,326	\$61,582,648	0.1	99.9
	80%	Basic	25	118	17.5	82.5	603	176,865	0.3	99.7	\$320,459	\$61,352,515	0.5	99.5
		Log	18	125	12.6	87.4	248	177,220	0.1	99.9	\$220,520	\$61,452,454	0.4	99.6
	90%	Basic	31	112	21.7	78.3	1,349	176,119	0.8	99.2	\$530,750	\$61,142,224	0.9	99.1
		Log	24	119	16.8	83.2	500	176,968	0.3	99.7	\$265,001	\$61,407,973	0.4	99.6
Emergency medicine	70%	Basic	378	40	90.4	9.6	31,716	20,016	61.3	38.7	\$25,006,773	\$10,010,948	71.4	28.6
		Log	86	332	20.6	79.4	947	50,785	1.8	98.2	\$780,230	\$34,237,491	2.2	97.8
	80%	Basic	409	9	97.8	2.2	40,490	11,242	78.3	21.7	\$32,100,333	\$2,917,388	91.7	8.3
		Log	114	304	27.3	72.7	2,028	49,704	3.9	96.1	\$1,634,254	\$33,383,467	4.7	95.3
	90%	Basic	417	1	99.8	0.2	44,680	7,052	86.4	13.6	\$34,439,439	\$578,282	98.3	1.7
		Log	252	166	60.3	39.7	13,146	38,586	25.4	74.6	\$11,360,946	\$23,656,775	32.4	67.6

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family/General practice	70%	Basic	533	478	52.7	47.3	58,298	307,222	15.9	84.1	\$22,258,996	\$87,442,726	20.3	79.7
		Log	114	897	11.3	88.7	801	364,719	0.2	99.8	\$944,235	\$108,757,487	0.9	99.1
	80%	Basic	684	327	67.7	32.3	104,490	261,030	28.6	71.4	\$38,426,443	\$71,275,279	35.0	65.0
		Log	148	863	14.6	85.4	1,654	363,866	0.5	99.5	\$1,918,780	\$107,782,942	1.7	98.3
	90%	Basic	899	112	88.9	11.1	223,190	142,330	61.1	38.9	\$72,178,522	\$37,523,200	65.8	34.2
		Log	253	758	25.0	75.0	6,762	358,758	1.8	98.2	\$5,161,531	\$104,540,191	4.7	95.3
Gastroenterology	70%	Basic	56	97	36.6	63.4	5,707	53,405	9.7	90.3	\$6,425,705	\$45,072,281	12.5	87.5
		Log	24	129	15.7	84.3	344	58,768	0.6	99.4	\$483,822	\$51,014,164	0.9	99.1
	80%	Basic	87	66	56.9	43.1	14,936	44,176	25.3	74.7	\$14,592,565	\$36,905,421	28.3	71.7
		Log	29	124	19.0	81.0	638	58,474	1.1	98.9	\$1,317,271	\$50,180,715	2.6	97.4
	90%	Basic	127	26	83.0	17.0	32,454	26,658	54.9	45.1	\$30,506,872	\$20,991,114	59.2	40.8
		Log	45	108	29.4	70.6	2,466	56,646	4.2	95.8	\$3,279,855	\$48,218,131	6.4	93.6
General surgery	70%	Basic	150	99	60.2	39.8	5,302	27,887	16.0	84.0	\$26,081,714	\$84,297,133	23.6	76.4
		Log	117	132	47.0	53.0	1,984	31,205	6.0	94.0	\$14,965,232	\$95,413,615	13.6	86.4
	80%	Basic	190	59	76.3	23.7	10,885	22,304	32.8	67.2	\$45,952,058	\$64,426,789	41.6	58.4
		Log	140	109	56.2	43.8	3,381	29,808	10.2	89.8	\$23,608,113	\$86,770,734	21.4	78.6
	90%	Basic	238	11	95.6	4.4	24,113	9,076	72.7	27.3	\$87,315,798	\$23,063,049	79.1	20.9
		Log	187	62	75.1	24.9	8,684	24,505	26.2	73.8	\$46,699,797	\$63,679,050	42.3	57.7

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hematology/oncology	70%	Basic	26	100	20.6	79.4	543	28,711	1.9	98.1	\$2,646,513	\$159,184,449	1.6	98.4
		Log	15	111	11.9	88.1	133	29,121	0.5	99.5	\$1,742,319	\$160,088,643	1.1	98.9
	80%	Basic	42	84	33.3	66.7	1,323	27,931	4.5	95.5	\$10,152,242	\$151,678,720	6.3	93.7
		Log	25	101	19.8	80.2	391	28,863	1.3	98.7	\$3,827,646	\$158,003,316	2.4	97.6
	90%	Basic	69	57	54.8	45.2	4,447	24,807	15.2	84.8	\$32,848,989	\$128,981,973	20.3	79.7
		Log	48	78	38.1	61.9	1,750	27,504	6.0	94.0	\$16,710,280	\$145,120,682	10.3	89.7
Internal medicine	70%	Basic	260	815	24.2	75.8	5,782	400,945	1.4	98.6	\$18,277,408	\$310,125,817	5.6	94.4
		Log	92	983	8.6	91.4	319	406,408	0.1	99.9	\$2,549,656	\$325,853,569	0.8	99.2
	80%	Basic	392	683	36.5	63.5	13,988	392,739	3.4	96.6	\$37,330,835	\$291,072,390	11.4	88.6
		Log	124	951	11.5	88.5	620	406,107	0.2	99.8	\$4,521,842	\$323,881,383	1.4	98.6
	90%	Basic	629	446	58.5	41.5	44,395	362,332	10.9	89.1	\$98,047,853	\$230,355,372	29.9	70.1
		Log	234	841	21.8	78.2	2,641	404,086	0.6	99.4	\$18,883,442	\$309,519,783	5.8	94.2
Nephrology	70%	Basic	76	.	100.0	.	16,167	.	100.0	.	\$31,135,581	.	100.0	.
		Log	23	53	30.3	69.7	1,008	15,159	6.2	93.8	\$1,782,187	\$29,353,394	5.7	94.3
	80%	Basic	76	.	100.0	.	16,167	.	100.0	.	\$31,135,581	.	100.0	.
		Log	40	36	52.6	47.4	3,965	12,202	24.5	75.5	\$7,116,207	\$24,019,374	22.9	77.1
	90%	Basic	76	.	100.0	.	16,167	.	100.0	.	\$31,135,581	.	100.0	.
		Log	70	6	92.1	7.9	12,270	3,897	75.9	24.1	\$25,231,164	\$5,904,417	81.0	19.0

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Neurology	70%	Basic	55	99	35.7	64.3	1,859	31,624	5.6	94.4	\$4,103,950	\$37,270,033	9.9	90.1
		Log	28	126	18.2	81.8	194	33,289	0.6	99.4	\$902,594	\$40,471,389	2.2	97.8
	80%	Basic	83	71	53.9	46.1	5,494	27,989	16.4	83.6	\$9,340,654	\$32,033,329	22.6	77.4
		Log	36	118	23.4	76.6	396	33,087	1.2	98.8	\$1,603,357	\$39,770,626	3.9	96.1
	90%	Basic	119	35	77.3	22.7	13,424	20,059	40.1	59.9	\$22,078,870	\$19,295,113	53.4	46.6
		Log	53	101	34.4	65.6	1,378	32,105	4.1	95.9	\$3,944,926	\$37,429,057	9.5	90.5
Obstetrics/gynecology	70%	Basic	320	34	90.4	9.6	16,239	13,834	54.0	46.0	\$8,498,565	\$12,767,204	40.0	60.0
		Log	191	163	54.0	46.0	2,555	27,518	8.5	91.5	\$3,061,698	\$18,204,071	14.4	85.6
	80%	Basic	338	16	95.5	4.5	21,009	9,064	69.9	30.1	\$11,439,329	\$9,826,440	53.8	46.2
		Log	230	124	65.0	35.0	4,636	25,437	15.4	84.6	\$5,202,307	\$16,063,462	24.5	75.5
	90%	Basic	353	1	99.7	0.3	29,125	948	96.8	3.2	\$20,548,414	\$717,355	96.6	3.4
		Log	286	68	80.8	19.2	9,770	20,303	32.5	67.5	\$9,728,399	\$11,537,370	45.7	54.3
Ophthalmology	70%	Basic	11	180	5.8	94.2	55	196,696	0.0	100.0	\$22,978	\$91,873,803	0.0	100.0
		Log	10	181	5.2	94.8	31	196,720	0.0	100.0	\$20,427	\$91,876,354	0.0	100.0
	80%	Basic	14	177	7.3	92.7	162	196,589	0.1	99.9	\$81,503	\$91,815,278	0.1	99.9
		Log	10	181	5.2	94.8	31	196,720	0.0	100.0	\$20,427	\$91,876,354	0.0	100.0
	90%	Basic	32	159	16.8	83.2	1,713	195,038	0.9	99.1	\$745,265	\$91,151,516	0.8	99.2
		Log	17	174	8.9	91.1	295	196,456	0.1	99.9	\$126,197	\$91,770,584	0.1	99.9

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Orthopedic surgery	70%	Basic	65	217	23.0	77.0	2,028	70,123	2.8	97.2	\$6,359,175	\$240,756,934	2.6	97.4
		Log	55	227	19.5	80.5	1,060	71,091	1.5	98.5	\$6,276,359	\$240,839,750	2.5	97.5
	80%	Basic	91	191	32.3	67.7	5,025	67,126	7.0	93.0	\$14,164,100	\$232,952,009	5.7	94.3
		Log	81	201	28.7	71.3	2,918	69,233	4.0	96.0	\$16,863,384	\$230,252,725	6.8	93.2
	90%	Basic	172	110	61.0	39.0	20,027	52,124	27.8	72.2	\$56,708,435	\$190,407,674	22.9	77.1
		Log	129	153	45.7	54.3	9,237	62,914	12.8	87.2	\$38,127,315	\$208,988,794	15.4	84.6
Otolaryngology	70%	Basic	58	33	63.7	36.3	12,054	19,706	38.0	62.0	\$8,651,528	\$7,892,675	52.3	47.7
		Log	12	79	13.2	86.8	94	31,666	0.3	99.7	\$44,714	\$16,499,489	0.3	99.7
	80%	Basic	77	14	84.6	15.4	20,967	10,793	66.0	34.0	\$12,782,218	\$3,761,985	77.3	22.7
		Log	16	75	17.6	82.4	215	31,545	0.7	99.3	\$61,662	\$16,482,541	0.4	99.6
	90%	Basic	91	.	100.0	.	31,760	.	100.0	.	\$16,544,203	.	100.0	.
		Log	24	67	26.4	73.6	875	30,885	2.8	97.2	\$717,122	\$15,827,081	4.3	95.7
Podiatry	70%	Basic	61	110	35.7	64.3	12,186	126,775	8.8	91.2	\$4,457,224	\$22,162,085	16.7	83.3
		Log	11	160	6.4	93.6	141	138,820	0.1	99.9	\$47,578	\$26,571,731	0.2	99.8
	80%	Basic	82	89	48.0	52.0	24,103	114,858	17.3	82.7	\$6,865,613	\$19,753,696	25.8	74.2
		Log	16	155	9.4	90.6	343	138,618	0.2	99.8	\$151,522	\$26,467,787	0.6	99.4
	90%	Basic	120	51	70.2	29.8	57,034	81,927	41.0	59.0	\$14,537,143	\$12,082,166	54.6	45.4
		Log	24	147	14.0	86.0	916	138,045	0.7	99.3	\$355,221	\$26,264,088	1.3	98.7

**Percentage of Physicians with Reliable Scores  
and Percentage of Episode Costs Belonging to Physicians with Reliable Scores**

MSA Phoenix, Years 2005-2006

Specialty Group / Threshold / Scoring Method			----								----			
			MDs		Percent of MDs		Episodes		Percent of Episodes		Costs		Percent of Costs	
			Reliable		Reliable		Reliable		Reliable		Reliable		Reliable	
			No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Psychiatry	70%	Basic	106	63	62.7	37.3	335	3,720	8.3	91.7	\$1,127,735	\$29,024,156	3.7	96.3
		Log	79	90	46.7	53.3	147	3,908	3.6	96.4	\$487,833	\$29,664,058	1.6	98.4
	80%	Basic	118	51	69.8	30.2	530	3,525	13.1	86.9	\$2,318,634	\$27,833,257	7.7	92.3
		Log	96	73	56.8	43.2	242	3,813	6.0	94.0	\$915,936	\$29,235,955	3.0	97.0
	90%	Basic	146	23	86.4	13.6	1,510	2,545	37.2	62.8	\$9,513,544	\$20,638,347	31.6	68.4
		Log	116	53	68.6	31.4	471	3,584	11.6	88.4	\$3,386,016	\$26,765,875	11.2	88.8
Pulmonary disease	70%	Basic	101	17	85.6	14.4	27,119	18,811	59.0	41.0	\$40,379,413	\$13,245,328	75.3	24.7
		Log	21	97	17.8	82.2	202	45,728	0.4	99.6	\$2,130,728	\$51,494,013	4.0	96.0
	80%	Basic	108	10	91.5	8.5	33,142	12,788	72.2	27.8	\$46,457,413	\$7,167,328	86.6	13.4
		Log	27	91	22.9	77.1	458	45,472	1.0	99.0	\$2,720,082	\$50,904,659	5.1	94.9
	90%	Basic	117	1	99.2	0.8	40,702	5,228	88.6	11.4	\$52,318,877	\$1,305,864	97.6	2.4
		Log	37	81	31.4	68.6	1,276	44,654	2.8	97.2	\$9,178,008	\$44,446,733	17.1	82.9
Urology	70%	Basic	21	80	20.8	79.2	1,057	65,465	1.6	98.4	\$1,288,385	\$67,781,911	1.9	98.1
		Log	8	93	7.9	92.1	47	66,475	0.1	99.9	\$69,796	\$69,000,500	0.1	99.9
	80%	Basic	28	73	27.7	72.3	2,433	64,089	3.7	96.3	\$3,679,884	\$65,390,412	5.3	94.7
		Log	13	88	12.9	87.1	285	66,237	0.4	99.6	\$399,513	\$68,670,783	0.6	99.4
	90%	Basic	52	49	51.5	48.5	11,407	55,115	17.1	82.9	\$15,753,889	\$53,316,407	22.8	77.2
		Log	22	79	21.8	78.2	1,178	65,344	1.8	98.2	\$1,757,976	\$67,312,320	2.5	97.5

# APPENDIX C - MEDIAN RELIABILITY TABLES

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*Median Reliability*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
<b>All</b>	<b>Score</b>												
	<b>Basic</b>	14,308	0.70	1,376	0.82	4,187	0.72	6,239	0.72	4,839	0.71	5,618	0.78
	<b>Log</b>	14,308	0.91	1,376	0.96	4,187	0.94	6,239	0.92	4,839	0.93	5,618	0.94
<b>Specialty Group</b>	<b>Score</b>												
<b>Allergy/immunology</b>	<b>Basic</b>	85	0.62	.	.	.	.	.	.	.	.	.	.
	<b>Log</b>	85	0.86	.	.	.	.	.	.	.	.	.	.
<b>Cardiology</b>	<b>Basic</b>	673	0.92	.	.	232	0.95	217	0.94	193	0.95	267	0.96
	<b>Log</b>	673	0.97	.	.	232	0.99	217	0.96	193	0.98	267	0.98
<b>Cardiothoracic surgery</b>	<b>Basic</b>	111	0.81	.	.	.	.	.	.	.	.	.	.
	<b>Log</b>	111	0.87	.	.	.	.	.	.	.	.	.	.
<b>Chiropractic</b>	<b>Basic</b>	813	0.83	196	0.84	164	0.73	924	0.84	695	0.63	868	0.80
	<b>Log</b>	813	0.84	196	0.87	164	0.78	924	0.85	695	0.75	868	0.84
<b>Dermatology</b>	<b>Basic</b>	335	0.97	.	.	122	0.97	105	0.97	164	0.97	124	0.98
	<b>Log</b>	335	0.99	.	.	122	0.98	105	0.99	164	0.98	124	0.99
<b>Emergency medicine</b>	<b>Basic</b>	664	0.62	112	0.75	189	0.13	322	0.54	333	0.26	363	0.54
	<b>Log</b>	664	0.90	112	0.96	189	0.69	322	0.90	333	0.72	363	0.92
<b>Endocrinology</b>	<b>Basic</b>	160	0.49	.	.	.	.	.	.	.	.	.	.
	<b>Log</b>	160	0.88	.	.	.	.	.	.	.	.	.	.

*Median Reliability*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Family/General practice	Basic	1,075	0.49	419	0.83	917	0.60	1,574	0.65	878	0.73	989	0.70
	Log	1,075	0.93	419	0.98	917	0.96	1,574	0.95	878	0.96	989	0.97
Gastroenterology	Basic	353	0.77	.	.	93	0.80	83	0.66	104	0.80	144	0.84
	Log	353	0.95	.	.	93	0.94	83	0.95	104	0.96	144	0.97
General surgery	Basic	562	0.76	110	0.83	207	0.71	211	0.71	165	0.61	222	0.66
	Log	562	0.87	110	0.94	207	0.85	211	0.81	165	0.81	222	0.85
Hematology/oncology	Basic	441	0.74	.	.	101	0.84	131	0.64	103	0.74	113	0.81
	Log	441	0.82	.	.	101	0.86	131	0.91	103	0.84	113	0.91
Infectious disease	Basic	174	0.20	.	.	.	.	.	.	.	.	.	.
	Log	174	0.63	.	.	.	.	.	.	.	.	.	.
Internal medicine	Basic	3,571	0.76	226	0.94	840	0.75	951	0.86	800	0.82	990	0.89
	Log	3,571	0.97	226	1.00	840	0.96	951	0.98	800	0.98	990	0.99
Nephrology	Basic	153	0.45	.	.	.	.	.	.	.	.	.	.
	Log	153	0.84	.	.	.	.	.	.	.	.	.	.
Neurology	Basic	476	0.67	.	.	119	0.72	147	0.74	119	0.73	133	0.83
	Log	476	0.89	.	.	119	0.93	147	0.90	119	0.94	133	0.94
Neurosurgery	Basic	106	0.74	.	.	.	.	.	.	.	.	.	.
	Log	106	0.84	.	.	.	.	.	.	.	.	.	.
Obstetrics/gynecology	Basic	819	0.46	135	0.51	252	0.44	347	0.31	281	0.43	355	0.35
	Log	819	0.79	135	0.75	252	0.83	347	0.63	281	0.82	355	0.67

*Median Reliability*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Ophthalmology	Basic	546	0.96	.	.	198	0.96	194	0.98	199	0.97	174	0.99
	Log	546	0.98	.	.	198	0.98	194	0.99	199	0.99	174	0.99
Oral/Maxillofacial surgery	Basic	144	0.02	.	.	.	.	84	0.00	.	.	.	.
	Log	144	0.54	.	.	.	.	84	0.24	.	.	.	.
Orthopedic surgery	Basic	590	0.88	89	0.88	169	0.85	266	0.85	242	0.80	267	0.89
	Log	590	0.92	89	0.95	169	0.92	266	0.89	242	0.89	267	0.92
Otolaryngology	Basic	209	0.66	.	.	.	.	103	0.49	107	0.74	90	0.57
	Log	209	0.97	.	.	.	.	103	0.95	107	0.97	90	0.97
Physical medicine and rehabilitation	Basic	135	0.67	.	.	.	.	75	0.41	.	.	.	.
	Log	135	0.89	.	.	.	.	75	0.77	.	.	.	.
Plastic and reconstructive surgery	Basic	126	0.34	.	.	.	.	.	.	.	.	.	.
	Log	126	0.78	.	.	.	.	.	.	.	.	.	.
Podiatry	Basic	352	0.86	.	.	187	0.79	84	0.78	177	0.81	157	0.84
	Log	352	0.99	.	.	187	0.99	84	0.97	177	0.98	157	0.99
Psychiatry	Basic	997	0.51	89	0.80	203	0.69	252	0.73	107	0.63	164	0.58
	Log	997	0.72	89	0.94	203	0.84	252	0.88	107	0.88	164	0.79
Pulmonary disease	Basic	264	0.52	.	.	93	0.46	87	0.24	85	0.64	108	0.56
	Log	264	0.84	.	.	93	0.94	87	0.78	85	0.97	108	0.96
Rheumatology	Basic	152	0.60	.	.	.	.	.	.	.	.	.	.
	Log	152	0.91	.	.	.	.	.	.	.	.	.	.

*Median Reliability*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Urology	Basic	222	0.85	.	.	101	0.91	82	0.72	87	0.90	90	0.89
	Log	222	0.97	.	.	101	0.97	82	0.92	87	0.97	90	0.97

*Median Reliability*

Years 2005-2006

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
<b>All</b>	<b>Score</b>												
	<b>Basic</b>	14,517	0.68	1,404	0.80	4,154	0.72	6,339	0.67	4,802	0.68	6,040	0.75
	<b>Log</b>	14,517	0.91	1,404	0.95	4,154	0.94	6,339	0.90	4,802	0.92	6,040	0.93
<b>Specialty Group</b>	<b>Score</b>												
<b>Allergy/immunology</b>	<b>Basic</b>	79	0.62	.	.	.	.	.	.	.	.	.	.
	<b>Log</b>	79	0.87	.	.	.	.	.	.	.	.	.	.
<b>Cardiology</b>	<b>Basic</b>	674	0.93	.	.	224	0.94	218	0.94	199	0.92	299	0.96
	<b>Log</b>	674	0.97	.	.	224	0.99	218	0.95	199	0.97	299	0.97
<b>Cardiothoracic surgery</b>	<b>Basic</b>	109	0.69	.	.	.	.	.	.	.	.	.	.
	<b>Log</b>	109	0.83	.	.	.	.	.	.	.	.	.	.
<b>Chiropractic</b>	<b>Basic</b>	817	0.79	197	0.79	149	0.61	962	0.77	659	0.61	859	0.74
	<b>Log</b>	817	0.82	197	0.87	149	0.76	962	0.80	659	0.75	859	0.82
<b>Dermatology</b>	<b>Basic</b>	345	0.96	.	.	135	0.94	114	0.96	170	0.97	143	0.98
	<b>Log</b>	345	0.99	.	.	135	0.96	114	0.99	170	0.99	143	0.99
<b>Emergency medicine</b>	<b>Basic</b>	695	0.65	115	0.69	231	0.13	350	0.45	334	0.25	418	0.45
	<b>Log</b>	695	0.91	115	0.96	231	0.63	350	0.88	334	0.70	418	0.88
<b>Endocrinology</b>	<b>Basic</b>	169	0.37	.	.	.	.	.	.	.	.	.	.
	<b>Log</b>	169	0.85	.	.	.	.	.	.	.	.	.	.
<b>Family/General practice</b>	<b>Basic</b>	1,073	0.54	423	0.82	905	0.73	1,592	0.58	833	0.65	1,011	0.68
	<b>Log</b>	1,073	0.94	423	0.98	905	0.97	1,592	0.94	833	0.95	1,011	0.97

*Median Reliability*

Years 2005-2006

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Gastroenterology	Basic	376	0.78	.	.	94	0.72	92	0.51	103	0.70	153	0.78
	Log	376	0.94	.	.	94	0.94	92	0.92	103	0.96	153	0.95
General surgery	Basic	542	0.70	108	0.79	199	0.53	227	0.64	162	0.57	249	0.60
	Log	542	0.85	108	0.90	199	0.77	227	0.75	162	0.75	249	0.75
Hematology/oncology	Basic	451	0.75	.	.	107	0.83	133	0.80	107	0.71	126	0.88
	Log	451	0.85	.	.	107	0.90	133	0.92	107	0.86	126	0.93
Infectious disease	Basic	187	0.29	.	.	.	.	.	.	.	.	.	.
	Log	187	0.66	.	.	.	.	.	.	.	.	.	.
Internal medicine	Basic	3,764	0.74	242	0.93	815	0.74	967	0.82	839	0.75	1,075	0.87
	Log	3,764	0.98	242	1.00	815	0.96	967	0.98	839	0.98	1,075	0.98
Nephrology	Basic	173	0.36	.	.	.	.	.	.	.	.	76	0.28
	Log	173	0.79	.	.	.	.	.	.	.	.	76	0.79
Neurology	Basic	487	0.62	.	.	116	0.78	153	0.63	120	0.76	154	0.78
	Log	487	0.89	.	.	116	0.93	153	0.85	120	0.96	154	0.95
Neurosurgery	Basic	101	0.80	.	.	.	.	.	.	.	.	.	.
	Log	101	0.88	.	.	.	.	.	.	.	.	.	.
Obstetrics/gynecology	Basic	802	0.45	145	0.46	264	0.26	362	0.33	282	0.43	354	0.33
	Log	802	0.77	145	0.68	264	0.73	362	0.56	282	0.84	354	0.66
Ophthalmology	Basic	551	0.96	.	.	216	0.95	199	0.98	202	0.97	191	0.98
	Log	551	0.98	.	.	216	0.97	199	0.99	202	0.98	191	0.99

*Median Reliability*

Years 2005-2006

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Oral/Maxillofacial surgery	Basic	148	0.10	.	.	.	.	83	0.02	.	.	.	.
	Log	148	0.64	.	.	.	.	83	0.29	.	.	.	.
Orthopedic surgery	Basic	600	0.87	87	0.88	164	0.82	270	0.84	230	0.80	282	0.87
	Log	600	0.91	87	0.92	164	0.91	270	0.87	230	0.89	282	0.91
Otolaryngology	Basic	217	0.63	.	.	.	.	100	0.39	101	0.74	91	0.58
	Log	217	0.97	.	.	.	.	100	0.94	101	0.97	91	0.96
Physical medicine and rehabilitation	Basic	143	0.47	.	.	.	.	.	.	.	.	.	.
	Log	143	0.85	.	.	.	.	.	.	.	.	.	.
Plastic and reconstructive surgery	Basic	128	0.43	.	.	.	.	.	.	.	.	.	.
	Log	128	0.72	.	.	.	.	.	.	.	.	.	.
Podiatry	Basic	341	0.84	.	.	176	0.74	93	0.75	173	0.80	171	0.81
	Log	341	0.99	.	.	176	0.99	93	0.96	173	0.99	171	0.98
Psychiatry	Basic	888	0.49	87	0.76	177	0.67	248	0.62	115	0.51	169	0.54
	Log	888	0.70	87	0.92	177	0.88	248	0.83	115	0.79	169	0.73
Pulmonary disease	Basic	273	0.50	.	.	92	0.68	87	0.25	87	0.66	118	0.50
	Log	273	0.83	.	.	92	0.94	87	0.76	87	0.98	118	0.96
Rheumatology	Basic	162	0.54	.	.	.	.	.	.	.	.	.	.
	Log	162	0.87	.	.	.	.	.	.	.	.	.	.
Urology	Basic	222	0.90	.	.	90	0.91	89	0.82	86	0.90	101	0.89
	Log	222	0.97	.	.	90	0.96	89	0.96	86	0.96	101	0.97

# APPENDIX D - MEDIAN RELIABILITY TABLES – MINIMUM 30 EPISODES

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*Median Reliability(minimum 30 episodes)*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
<b>All</b>	<b>Score</b>												
	<b>Basic</b>	9,501	0.84	1,671	0.86	3,571	0.80	5,008	0.79	3,871	0.80	4,546	0.85
	<b>Log</b>	9,501	0.96	1,671	0.97	3,571	0.96	5,008	0.94	3,871	0.96	4,546	0.96
<b>Specialty Group</b>	<b>Score</b>												
<b>Allergy/immunology</b>	<b>Basic</b>	65	0.73	16	0.82	20	0.67	37	0.86	27	0.92	24	0.79
	<b>Log</b>	65	0.91	16	0.79	20	0.85	37	0.93	27	0.96	24	0.92
<b>Cardiology</b>	<b>Basic</b>	505	0.96	60	0.98	213	0.95	186	0.95	168	0.95	227	0.97
	<b>Log</b>	505	0.98	60	0.99	213	0.99	186	0.96	168	0.98	227	0.98
<b>Cardiothoracic surgery</b>	<b>Basic</b>	72	0.89	14	0.95	17	0.82	31	0.79	25	0.47	35	0.90
	<b>Log</b>	72	0.89	14	0.94	17	0.90	31	0.68	25	0.73	35	0.86
<b>Chiropractic</b>	<b>Basic</b>	426	0.91	120	0.91	71	0.86	450	0.90	265	0.80	433	0.89
	<b>Log</b>	426	0.92	120	0.94	71	0.88	450	0.91	265	0.89	433	0.92
<b>Dermatology</b>	<b>Basic</b>	292	0.98	31	0.99	109	0.97	98	0.97	151	0.97	117	0.98
	<b>Log</b>	292	0.99	31	0.99	109	0.98	98	0.99	151	0.99	117	0.99
<b>Emergency medicine</b>	<b>Basic</b>	504	0.69	103	0.77	139	0.19	281	0.56	246	0.32	303	0.57
	<b>Log</b>	504	0.93	103	0.97	139	0.78	281	0.91	246	0.77	303	0.92
<b>Endocrinology</b>	<b>Basic</b>	111	0.60	8	0.00	39	0.74	32	0.65	29	0.67	31	0.64
	<b>Log</b>	111	0.93	8	0.93	39	0.96	32	0.91	29	0.96	31	0.90

**Median Reliability(minimum 30 episodes)**

**Years 2003-2004**

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
<b>Family/General practice</b>	<b>Basic</b>	678	0.71	386	0.84	732	0.67	1,368	0.69	709	0.79	811	0.76
	<b>Log</b>	678	0.97	386	0.98	732	0.97	1,368	0.96	709	0.97	811	0.97
<b>Gastroenterology</b>	<b>Basic</b>	280	0.82	33	0.85	86	0.81	69	0.69	93	0.81	125	0.86
	<b>Log</b>	280	0.96	33	0.97	86	0.94	69	0.96	93	0.97	125	0.97
<b>General surgery</b>	<b>Basic</b>	393	0.84	101	0.83	144	0.80	169	0.77	115	0.74	148	0.76
	<b>Log</b>	393	0.93	101	0.94	144	0.91	169	0.85	115	0.89	148	0.85
<b>Hematology/oncology</b>	<b>Basic</b>	265	0.88	30	0.82	75	0.89	90	0.80	77	0.84	91	0.85
	<b>Log</b>	265	0.92	30	0.97	75	0.92	90	0.95	77	0.91	91	0.93
<b>Infectious disease</b>	<b>Basic</b>	83	0.46	7	0.00	32	0.33	29	0.18	23	0.60	17	0.00
	<b>Log</b>	83	0.88	7	0.00	32	0.73	29	0.62	23	0.82	17	0.38
<b>Internal medicine</b>	<b>Basic</b>	2,575	0.84	202	0.94	643	0.83	797	0.88	656	0.85	763	0.92
	<b>Log</b>	2,575	0.99	202	1.00	643	0.97	797	0.99	656	0.99	763	0.99
<b>Nephrology</b>	<b>Basic</b>	106	0.59	23	0.57	32	0.58	51	0.12	38	0.51	61	0.28
	<b>Log</b>	106	0.91	23	0.90	32	0.85	51	0.72	38	0.90	61	0.81
<b>Neurology</b>	<b>Basic</b>	309	0.82	38	0.81	101	0.80	116	0.78	92	0.80	109	0.86
	<b>Log</b>	309	0.94	38	0.97	101	0.94	116	0.92	92	0.95	109	0.95
<b>Neurosurgery</b>	<b>Basic</b>	79	0.81	12	0.64	31	0.69	29	0.67	22	0.74	36	0.76
	<b>Log</b>	79	0.88	12	0.82	31	0.69	29	0.71	22	0.72	36	0.88
<b>Obstetrics/gynecology</b>	<b>Basic</b>	522	0.61	110	0.51	165	0.59	223	0.41	199	0.53	201	0.54
	<b>Log</b>	522	0.88	110	0.79	165	0.90	223	0.74	199	0.88	201	0.84

*Median Reliability(minimum 30 episodes)*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Ophthalmology	Basic	406	0.98	57	0.99	179	0.97	181	0.98	172	0.98	164	0.99
	Log	406	0.99	57	0.99	179	0.98	181	0.99	172	0.99	164	0.99
Oral/Maxillofacial surgery	Basic	53	0.07	4	0.00	10	0.00	19	0.00	8	0.27	15	0.00
	Log	53	0.72	4	0.00	10	0.68	19	0.11	8	0.77	15	0.65
Orthopedic surgery	Basic	412	0.93	86	0.88	135	0.90	227	0.88	188	0.85	234	0.91
	Log	412	0.95	86	0.95	135	0.94	227	0.90	188	0.93	234	0.93
Otolaryngology	Basic	165	0.75	31	0.69	57	0.78	81	0.58	92	0.80	79	0.60
	Log	165	0.98	31	0.98	57	0.98	81	0.95	92	0.97	79	0.97
Peripheral vascular disease	Basic	0	.	0	.	5	0.68	2	0.00	.	.	0	.
	Log	0	.	0	.	5	0.76	2	0.00	.	.	0	.
Physical medicine and rehabilitation	Basic	95	0.75	17	0.89	28	0.83	44	0.63	30	0.87	46	0.66
	Log	95	0.93	17	0.98	28	0.93	44	0.91	30	0.94	46	0.91
Plastic and reconstructive surgery	Basic	86	0.51	13	0.18	26	0.05	35	0.00	39	0.18	46	0.30
	Log	86	0.87	13	0.67	26	0.65	35	0.56	39	0.51	46	0.76
Podiatry	Basic	299	0.89	28	0.88	171	0.82	82	0.79	157	0.85	146	0.86
	Log	299	0.99	28	0.99	171	0.99	82	0.97	157	0.99	146	0.99
Psychiatry	Basic	212	0.93	45	0.94	89	0.93	103	0.94	50	0.88	44	0.92
	Log	212	0.96	45	0.98	89	0.97	103	0.97	50	0.92	44	0.96
Pulmonary disease	Basic	181	0.71	31	0.84	83	0.51	67	0.26	74	0.69	95	0.60
	Log	181	0.93	31	0.95	83	0.94	67	0.83	74	0.97	95	0.96

*Median Reliability(minimum 30 episodes)*

Years 2003-2004

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
<b>Rheumatology</b>	<b>Basic</b>	103	0.81	12	0.89	29	0.91	37	0.86	28	0.89	32	0.85
	<b>Log</b>	103	0.97	12	0.99	29	0.97	37	0.95	28	0.95	32	0.96
<b>Urology</b>	<b>Basic</b>	169	0.90	43	0.89	92	0.91	66	0.76	77	0.91	86	0.90
	<b>Log</b>	169	0.98	43	0.97	92	0.97	66	0.94	77	0.98	86	0.97
<b>Vascular surgery</b>	<b>Basic</b>	55	0.86	10	0.91	18	0.85	8	0.91	21	0.59	27	0.84
	<b>Log</b>	55	0.93	10	0.95	18	0.96	8	0.97	21	0.81	27	0.86

**Median Reliability(minimum 30 episodes)**

**Years 2005-2006**

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
<b>All</b>	<b>Score</b>												
	<b>Basic</b>	9,529	0.83	1,678	0.84	3,496	0.79	4,917	0.75	3,816	0.78	4,722	0.83
	<b>Log</b>	9,529	0.96	1,678	0.97	3,496	0.96	4,917	0.94	3,816	0.96	4,722	0.96
<b>Specialty Group</b>	<b>Score</b>												
<b>Allergy/immunology</b>	<b>Basic</b>	63	0.69	14	0.40	20	0.41	36	0.79	27	0.94	29	0.59
	<b>Log</b>	63	0.89	14	0.72	20	0.71	36	0.93	27	0.93	29	0.91
<b>Cardiology</b>	<b>Basic</b>	507	0.95	64	0.98	209	0.95	189	0.95	170	0.93	256	0.97
	<b>Log</b>	507	0.98	64	0.99	209	0.99	189	0.96	170	0.97	256	0.98
<b>Cardiothoracic surgery</b>	<b>Basic</b>	75	0.79	10	0.54	20	0.67	29	0.88	25	0.68	34	0.90
	<b>Log</b>	75	0.85	10	0.71	20	0.89	29	0.75	25	0.80	34	0.86
<b>Chiropractic</b>	<b>Basic</b>	393	0.89	119	0.87	58	0.68	393	0.87	246	0.82	386	0.85
	<b>Log</b>	393	0.91	119	0.92	58	0.84	393	0.90	246	0.90	386	0.90
<b>Dermatology</b>	<b>Basic</b>	291	0.97	31	0.99	108	0.96	109	0.96	155	0.98	127	0.98
	<b>Log</b>	291	0.99	31	0.99	108	0.98	109	0.99	155	0.99	127	0.99
<b>Emergency medicine</b>	<b>Basic</b>	529	0.72	107	0.71	156	0.17	294	0.49	242	0.33	329	0.51
	<b>Log</b>	529	0.93	107	0.96	156	0.74	294	0.89	242	0.76	329	0.89
<b>Endocrinology</b>	<b>Basic</b>	110	0.51	9	0.29	36	0.78	32	0.26	32	0.62	35	0.85
	<b>Log</b>	110	0.93	9	0.97	36	0.94	32	0.80	32	0.94	35	0.94
<b>Family/General practice</b>	<b>Basic</b>	684	0.75	384	0.84	732	0.80	1,345	0.64	693	0.69	859	0.74
	<b>Log</b>	684	0.97	384	0.99	732	0.98	1,345	0.96	693	0.96	859	0.97

**Median Reliability(minimum 30 episodes)**

Years 2005-2006

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Gastroenterology	Basic	295	0.83	33	0.79	90	0.75	80	0.56	95	0.73	132	0.80
	Log	295	0.96	33	0.96	90	0.94	80	0.94	95	0.96	132	0.96
General surgery	Basic	377	0.80	102	0.80	140	0.70	167	0.68	114	0.68	154	0.77
	Log	377	0.91	102	0.91	140	0.85	167	0.81	114	0.84	154	0.86
Hematology/oncology	Basic	290	0.87	31	0.89	80	0.87	89	0.88	81	0.81	106	0.91
	Log	290	0.92	31	0.98	80	0.94	89	0.96	81	0.90	106	0.95
Infectious disease	Basic	84	0.54	7	0.00	28	0.02	33	0.42	23	0.62	18	0.11
	Log	84	0.89	7	0.22	28	0.72	33	0.64	23	0.73	18	0.40
Internal medicine	Basic	2,599	0.84	218	0.93	627	0.81	783	0.85	662	0.82	813	0.90
	Log	2,599	0.99	218	1.00	627	0.98	783	0.99	662	0.99	813	0.99
Nephrology	Basic	113	0.62	28	0.57	31	0.40	50	0.36	39	0.51	63	0.30
	Log	113	0.88	28	0.77	31	0.81	50	0.79	39	0.91	63	0.77
Neurology	Basic	336	0.78	32	0.81	96	0.78	118	0.71	89	0.83	118	0.83
	Log	336	0.93	32	0.93	96	0.93	118	0.88	89	0.97	118	0.95
Neurosurgery	Basic	76	0.84	12	0.78	31	0.71	30	0.66	22	0.60	38	0.68
	Log	76	0.90	12	0.79	31	0.79	30	0.57	22	0.48	38	0.79
Obstetrics/gynecology	Basic	497	0.59	113	0.54	148	0.47	197	0.48	196	0.51	181	0.54
	Log	497	0.88	113	0.74	148	0.88	197	0.71	196	0.90	181	0.84
Ophthalmology	Basic	416	0.98	60	0.99	175	0.96	180	0.98	172	0.98	180	0.99
	Log	416	0.99	60	0.99	175	0.98	180	0.99	172	0.99	180	0.99

*Median Reliability(minimum 30 episodes)*

Years 2005-2006

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Oral/Maxillofacial surgery	Basic	55	0.08	2	0.69	11	0.20	10	0.11	10	0.00	13	0.01
	Log	55	0.69	2	0.81	11	0.80	10	0.17	10	0.41	13	0.81
Orthopedic surgery	Basic	417	0.92	81	0.89	136	0.87	227	0.86	178	0.86	244	0.89
	Log	417	0.94	81	0.92	136	0.93	227	0.89	178	0.92	244	0.92
Otolaryngology	Basic	164	0.73	29	0.63	56	0.66	83	0.40	87	0.80	77	0.67
	Log	164	0.98	29	0.97	56	0.98	83	0.94	87	0.98	77	0.97
Peripheral vascular disease	Basic	0	.	0	.	4	0.00	2	0.67	.	.	0	.
	Log	0	.	0	.	4	0.00	2	0.76	.	.	0	.
Physical medicine and rehabilitation	Basic	98	0.56	15	0.89	26	0.79	47	0.55	30	0.81	47	0.64
	Log	98	0.88	15	0.98	26	0.93	47	0.89	30	0.94	47	0.90
Plastic and reconstructive surgery	Basic	83	0.58	12	0.32	20	0.00	30	0.00	33	0.43	34	0.20
	Log	83	0.84	12	0.69	20	0.30	30	0.23	33	0.61	34	0.66
Podiatry	Basic	288	0.88	29	0.79	162	0.77	89	0.75	155	0.82	159	0.82
	Log	288	0.99	29	0.99	162	0.99	89	0.96	155	0.99	159	0.98
Psychiatry	Basic	179	0.94	41	0.93	86	0.89	83	0.94	36	0.90	41	0.84
	Log	179	0.96	41	0.97	86	0.95	83	0.97	36	0.93	41	0.93
Pulmonary disease	Basic	180	0.67	33	0.87	78	0.71	73	0.30	77	0.67	97	0.57
	Log	180	0.92	33	0.98	78	0.96	73	0.80	77	0.98	97	0.96
Rheumatology	Basic	103	0.80	14	0.87	30	0.90	38	0.87	30	0.90	32	0.85
	Log	103	0.96	14	0.98	30	0.97	38	0.93	30	0.97	32	0.96

*Median Reliability(minimum 30 episodes)*

Years 2005-2006

		MSA											
		Boston		Greenville		Miami		Minneapolis		Orange County		Phoenix	
		Reliability		Reliability		Reliability		Reliability		Reliability		Reliability	
		MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median	MDs	Median
Urology	Basic	170	0.92	39	0.85	84	0.91	72	0.84	77	0.92	93	0.92
	Log	170	0.98	39	0.97	84	0.96	72	0.96	77	0.97	93	0.97
Vascular surgery	Basic	57	0.84	9	0.88	18	0.82	9	0.87	20	0.54	27	0.89
	Log	57	0.92	9	0.94	18	0.96	9	0.96	20	0.78	27	0.93