

The State of Quality Reports: Comparing States by Their Rankings

Richard G. Roberts, MD, JD; Donna Friedsam, MPH; John W. Beasley, MD;
Cindy Helstad, PhD, RN; D. Paul Moberg, PhD

ABSTRACT

Background: Public reports ranking physician competence and quality often yield conflicting results and create confusion.

Methods: Bivariate Pearson correlation analyses were performed to compare states' rankings of physician discipline and physician quality, as reported by the Medicare program and National Practitioner Data Bank. Medical boards were surveyed on their rates of complaints against physicians and ratio of actions to complaints.

Results: For all states, there was a poor to negative correlation between state rankings of disciplinary rates and quality, as well as rates of complaints against physicians. As an example, Wisconsin ranked 50th out of the 50 states plus the District of Columbia (where 1 is most desirable and 51 is worst) in rates of "serious" licensure sanctions, but did well when ranked by Medicare quality (eighth out of 51) and the rate of NPDB adverse reports (second out of 51). Wisconsin had a low rate of complaints per physician, ranking second out of 35 responding states, and a high ratio of actions to complaints, ranking fourth out of 35.

Conclusion: Conflicting conclusions among public reports on physician discipline and quality raise questions about their methods and validity. State rankings of physician discipline and quality should be viewed with caution.

INTRODUCTION

Most of us choose our physicians through word

of mouth recommendations of family and friends.¹ Traditionally, we assumed our doctor was of good quality and relied on the medical profession and related institutions—hospital medical staffs and public agencies like state medical boards—to protect us from doctors of dubious quality. Reports of uneven health care quality and inadequate patient safety have led to a push for more systematic accounting and public reporting of physician performance and discipline.²

Each state has a medical board empowered to limit or revoke a physician's license because of "unprofessional conduct." The boards' missions consist of monitoring the quality of the services of licensed physicians and protecting the public from incompetent or unethical doctors. Boards receive and investigate complaints from patients and professionals, and discipline physicians according to their state's unique regulations. Ginsberg et al contend that the peer review process used by medical boards may not effectively discipline physicians.³

The rate of disciplinary actions varies by state. Public Citizen's Health Resource Group (HRG) have linked explicitly the variation in rates of discipline among states to concerns about quality and patient safety: "It is extremely likely that patients are being injured or killed more often in states with poor doctor disciplinary records than in states with consistently high performance."⁴ We tested HRG's claim that states with lower rates of disciplinary actions were more likely to have worse quality care by examining the relationships between state rankings on physician discipline, quality, adverse reports, and complaints.

METHODS

Study Design

State rankings of disciplinary actions were tested against published rankings of Medicare quality and of adverse reports in the National Practitioner Data Bank (NPDB) by performing bivariate Pearson correlation analyses using SPSS. To test for the possible distributional effects of ranked data, nonparametric Spearman rank order correlations and correlations between raw

Author Affiliations: Department of Family Medicine, University of Wisconsin School of Medicine and Public Health (Roberts, Beasley); University of Wisconsin Population Health Institute (Friedsam, Moberg); Wisconsin Medical Society (Helstad).

Corresponding Author: Richard G. Roberts, MD, JD, Professor of Family Medicine, University of Wisconsin School of Medicine & Public Health, 777 S Mills St, Madison, WI 53715; phone 608.263.3598; fax 608.263.5813; e-mail richard.roberts@fammed.wisc.edu.

rather than ranked variables were also run. Partial correlations controlling for the absolute number of physicians in each state were also carried out. In addition, state medical boards were surveyed and then ranked by the rate of complaints per physician and ratio of actions to complaints.

Data Sources

Rankings of State Disciplinary Rates—The Public Citizen Health Resource Group (HRG) publishes annually its *Ranking of the Rate of State Medical Boards' Serious Disciplinary Actions*.⁴ The report uses data from the Federation of State Medical Boards (FSMB) on the number of disciplinary actions taken against licensed physicians and ranks states by the rate of what HRG defines as “serious” disciplinary actions: FSMB category A (loss of license) or B (restriction of license). The HRG report does not include FSMB category C actions (other prejudicial actions including reprimand, license modification, or required remedial education).

FSMB Category A, B, and C Disciplinary Actions—Our analysis also ranked states based on their rates of disciplinary actions when all 3 FSMB categories (A, B, and C) are included. This variable, which we constructed, adds other prejudicial actions in addition to loss or restriction of license. The source for category C data is the same FSMB report used by HRG to establish its rankings.

Medicare Quality—A number of reports rank states on their quality of medical care.⁵⁻⁷ Their methodologies and limited focus often lead to narrow results that over-represent inpatient or preventive services and under-represent ambulatory care or invasive procedures. Since 2000, the Medicare program has reported on 24 indicators of quality of care that are felt to represent effective care in preventing or treating breast cancer, diabetes, myocardial infarction, heart failure, pneumonia, and stroke.⁸ While these Medicare measures represent less than the full spectrum of health care services, they provide a frequently-cited proxy for quality. We thus chose to compare states' Medicare quality rankings in 2001 and HRG's rankings of medical board disciplinary rates in 2003 to test the validity of HRG's conclusions linking disciplinary rankings to quality of care.

National Practitioner Data Bank (NPDB)—Operational since 1990, the NPDB serves as a central electronic repository for “adverse reports” on physicians and other health care professionals. These

reports involve a range of sanctions including payment of a medical malpractice claim, exclusion from Medicare or medical assistance participation, disciplinary action by a state licensing board or professional society, restriction in clinical privileges, or criminal conviction. The NPDB summary report for the period September 1, 1990 through June 5, 2004 was used.⁹ Rates of NPDB adverse reports relative to the total number of FSMB-reported physicians were calculated for each state. While concerns have been raised about the accuracy of the NPDB database,¹⁰ it provides a widely cited source of information about physician quality and offers another comparator to assess the validity of the HRG report.

Medical Board Survey—Every state medical board listed with the FSMB was asked to provide data on the number of complaints or allegations received and the number of resulting actions in 2001, 2002, and 2003. While 36 states completed the survey, responses could be used only for 35 states as 1 state reported a ratio of greater than 1 action per complaint, likely using different definitions than requested by the survey.

RESULTS

Table 1 reports data for all states and the District of Columbia. Alternative analyses to test for the possible distributional effects of ranked data and partial correlations that controlled for the absolute number of doctors in each state led to virtually identical results. To illustrate the analysis, we focused on a single state (Wisconsin) that ranked among the poorest performers in the HRG analysis and contrasted its rankings of disciplinary rates against Medicare quality and NPDB adverse reports. Table 2 summarizes Wisconsin's rankings on the various reports. Table 3 is a correlation matrix for all the quality measures used in the study.

Comparing HRG Disciplinary Rates, Medicare Quality Ranking, and NPDB Adverse Reports

In 2000–2001, Wisconsin ranked eighth nationally in the quality of care provided to Medicare beneficiaries, but 50th in its HRG disciplinary rate ranking. Correlation analysis using all states found no statistical relationship between HRG and Medicare quality rankings ($r=0.014$) (see Figure 1). States' rates of NPDB adverse reports ranged between 0.15 and 0.67 reports per physician. At 0.17 reports per physician, Wisconsin had the second lowest rate of NPDB adverse reports. Correlation analysis found a significant negative correlation between the rate of NPDB adverse reports and HRG rankings ($r=-0.321$, $P<.05$) (see Figure 2). That is, the HRG method

Table 1. Summary Data for All States and the District of Columbia

State	No. Physicians (HRG) ⁴	A+B Actions (HRG) ⁴	A+B Rate (HRG) ⁴	A+B Rank (HRG) ⁴	A+B+C Actions	A+B+C Rate	A+B+C Rank	Medicare Quality Rank ⁸	NPDB Rate ⁹	NPDB Rank ⁹	Complaints per Physician	Actions per Complaint
Alabama	10,192	45	4.42	15	66	6.48	16	42	0.15	1	NR	NR
Alaska	1437	10	6.96	8	15	10.44	5	33	0.32	23	0.202	0.051
Arizona	12,543	103	8.21	4	149	1.88	4	29	0.48	45	0.119	0.119
Arkansas	6008	12	2.00	43	22	3.66	39	48	0.26	12	NR	NR
California	99,720	365	3.66	22	506	5.07	21	44	0.31	21	0.127	0.043
Colorado	12,676	69	5.44	11	104	8.20	12	7	0.33	27	0.104	0.090
Connecticut	13,948	39	2.80	29	48	3.44	41	9	0.26	11	0.036	0.120
Delaware	2337	4	1.71	48	6	2.57	48	14	0.56	50	NR	NR
District of Columbia	4190	11	2.63	34	14	3.34	43	37	0.28	15	NR	NR
Florida	47,403	109	2.30	39	426	8.99	9	41	0.44	39	0.176	0.060
Georgia	20,162	89	4.41	16	144	7.14	13	47	0.29	17	NR	NR
Hawaii	4056	8	1.97	44	13	3.21	44	16	0.19	5	0.055	0.067
Idaho	2587	8	3.09	28	10	3.87	35	22	0.25	10	0.065	0.062
Illinois	38,261	97	2.54	38	158	4.13	33	46	0.31	22	0.056	0.086
Indiana	14,713	55	3.74	21	63	4.28	31	27	0.36	31	NR	NR
Iowa	6914	28	4.05	18	33	4.77	28	6	0.42	36	0.135	0.041
Kansas	7014	18	2.57	37	22	3.14	46	30	0.42	35	0.128	0.026
Kentucky	10,021	116	11.58	1	131	13.07	3	40	0.37	32	0.029	0.504
Louisiana	12,604	68	5.40	12	73	5.79	19	51	0.43	37	0.044	0.148
Maine	3748	8	2.13	40	24	6.40	17	3	0.23	8	0.034	0.190
Maryland	22,956	46	2.00	42	61	2.66	48	25	0.32	24	0.100	0.040
Massachusetts	29,852	98	3.28	25	108	3.62	40	15	0.20	6	NR	NR
Michigan	25,475	45	1.77	47	95	3.73	37	26	0.45	42	0.019	0.170
Minnesota	14,964	25	1.67	49	45	3.01	47	10	0.18	4	0.072	0.048
Mississippi	5659	10	1.77	46	11	1.94	51	50	0.45	41	NR	NR
Missouri	15,867	53	3.34	24	68	4.29	30	28	0.34	29	NR	NR
Montana	2367	17	7.18	7	21	8.87	10	13	0.50	46	0.051	0.188
Nebraska	4494	17	3.78	20	38	8.46	11	12	0.33	25	0.089	0.114
Nevada	4285	11	2.57	36	19	4.43	29	35	0.44	38	0.307	0.017
New Hampshire	3781	12	3.17	27	15	3.97	34	1	0.31	20	0.147	0.032
New Jersey	30,846	81	2.63	33	116	3.76	36	43	0.34	28	NR	NR
New Mexico	4562	12	2.63	32	17	3.73	38	38	0.38	34	0.039	0.104
New York	82,536	370	4.48	14	462	5.60	20	24	0.54	48	0.105	0.074
North Carolina	22,554	46	2.04	41	111	4.92	25	23	0.21	7	0.077	0.075
North Dakota	1658	17	10.25	3	27	16.28	2	4	0.46	43	0.061	0.314
Ohio	34,303	212	6.18	10	241	7.03	14	36	0.44	40	NR	NR
Oklahoma	6474	51	7.88	5	65	10.04	8	45	0.38	33	0.053	0.184
Oregon	10,271	45	4.38	17	50	4.87	26	11	0.24	9	0.071	0.078
Pennsylvania	39,886	78	1.96	45	134	3.36	42	31	0.56	49	0.043	0.088
Rhode Island	4118	6	1.46	51	10	2.43	50	17	0.29	16	0.095	0.026
South Carolina	10,140	33	3.25	26	49	4.83	27	32	0.27	13	0.036	0.155
South Dakota	1779	7	3.93	19	9	5.06	22	20	0.28	14	NR	NR
Tennessee	15,795	41	2.60	35	50	3.17	45	39	0.18	3	NR	NR
Texas	50,701	184	3.63	23	356	7.02	15	49	0.46	44	0.080	0.112
Utah	5156	25	4.85	13	26	5.04	23	5	0.36	30	0.051	0.099
Vermont	2451	18	7.34	6	25	10.20	6	2	0.33	26	0.138	0.097
Virginia	20,981	57	2.72	30	105	5.00	24	18	0.29	18	NR	NR
Washington	17,371	46	2.65	31	74	4.26	32	19	0.30	19	NA	NA
West Virginia	4415	30	6.80	9	45	10.19	7	34	0.67	51	0.052	0.210
Wisconsin	15,097	25	1.66	50	91	6.03	18	8	0.17	2	0.024	0.277
Wyoming	1051	12	11.42	2	19	18.08	1	21	0.50	47	NR	NR

HRG=Public Citizen Health Resource Group report⁴; A+B+C=Federation of State Medical Boards licensure actions: categories A (loss of license) + B (restriction of license) + C (other prejudicial actions such as including reprimand, license modification, or required remedial education); NPDB=National Practitioner Data Bank; NR=Did not respond to medical board survey. NA=Washington responded to the medical board survey, but reported a ratio of actions to complaints that was greater than 1. Therefore, Washington complaint data were not used in this analysis.

ranked states with more NPDB adverse reports more favorably and those with fewer reports more negatively.

Medical Board Surveys

Of the 35 states reporting usable data, Wisconsin had the third lowest rate of complaints: 24 per 1000 physicians. Depending on the state, the rate of complaints against physicians ranged from 4 to 307 per 1000 physicians. States varied in the proportion of complaints that resulted in any medical board actions (FSMB categories A, B, or C), ranging from 50% to <1%, with Wisconsin ranking fourth highest with a ratio of 28% (i.e., 28 medical board actions were taken for every 100 complaints filed). A state's ranking for its rate of complaints correlated negatively ($r=-0.526$, $P=.001$) with its proportion, or ratio, of complaints that resulted in medical board actions. Similarly, state rankings of the ratio of actions to complaints also correlated negatively with HRG rankings ($r=-0.374$, $P=.03$), which considered only FSMB category A or B actions.

DISCUSSION

Study findings indicate no relationship between states' rankings by HRG rates of disciplinary actions and by other quality measures. The evidence does not support the assertion that states with lower HRG physician discipline rankings have worse quality care. We endeavored to identify factors that might explain the discordance between the HRG rankings and other quality measures.

One potential factor is the denominator (number of licensed physicians) used by various reports. Some states count retired physicians and those with inactive licenses, while others do not. As an example, the 2002 FSMB report listed 19,868 physicians practicing in Wisconsin, while the Wisconsin Department of Regulation and Licensing reported 13,222, a 30% difference. Compounding this problem, the HRG report did not use FSMB physician counts—which would seem most logical given that it used FSMB-reported disciplinary rates—but instead chose to use the American Medical Association physician masterfile, which showed 14,241 Wisconsin physicians in 2002. Choosing a larger denominator lowers the rate of disciplinary actions and understates the rate of actions. This bias however, should be systematic throughout the report and not necessarily favor 1 state over another.

Another denominator problem was demonstrated in a state that reported a 4-fold increase from 2002 to 2003 in the number of complaints filed. The reason for the sudden rise was a new law that required physicians to report all malpractice claims to the medical board re-

Table 2. Comparison of Wisconsin's Rank on Various Quality Reports

Indicator	Wisconsin's Rank*
HRG disciplinary actions report ⁴	50th out of 51
Medicare Quality Study ⁸	Eighth out of 51
NPDB Adverse Reports ⁹	Second out of 51
FSMB A+B+C disciplinary actions per physician	18th out of 51
Medical Board complaints filed per physician	Third out of 35
Medical Board disciplinary actions per complaint filed	Fourth out of 35

* 1="most desirable" performance.

gardless of the outcome of the case. For that state, the year following the new law would inevitably show a lower ratio of disciplinary actions to complaints compared to the prior year. The lower ratio might therefore suggest less diligence compared to other states or other years, when in fact it was due to more aggressive reporting requirements. These different denominators create confusion and compromise the overall accuracy and utility of the data reported.

Another confounder could derive from differences in the definition of "serious" disciplinary actions. The HRG report counted only those disciplinary actions involving FSMB category A (loss of license) or B (restriction of license) offenses and did not include FSMB category C actions (other prejudicial actions including reprimand, license modification, or required remedial education). Some states, such as Wisconsin, rely heavily on category C actions to carry out their mission. Indeed, the principle of favoring remediation over license revocation has been reaffirmed by Wisconsin courts: "It is well established that the objectives of professional discipline include the rehabilitation of the licensee, the protection of the public, and deterrence to other licensees from engaging in similar conduct."¹¹ Adding category C disciplinary actions for all states, while applying the same HRG methods and physician denominator, caused Wisconsin's rank to rise from 50th to 18th among the 51 ranked state medical boards (see Table 2). While the ranked position of several states changed, the addition of category C actions did not improve reliability: no correlation existed ($r=0.015$, $P=0.92$) between rates of class A + B + C disciplinary actions and states' rankings of Medicare quality (see Figure 2). Thus, our more rigorous analysis leads to a different conclusion than the one offered previously by Treffert, who hypothesized that the failure to include less serious disciplinary actions accounted for the discordance between a state's

Table 3. Correlations (Pearson r) Between Quality Measures in the Analysis

State Rankings	A+B Actions (HRG report)	A+B+C Actions Reports	Medicare Quality	NPDB Adverse	Complaints per Physician	Actions per Complaint
A+B actions (HRG report)	1.0					
A+B+C actions	.796 <i>P</i> <.001	1.0				
Medicare quality	.014 <i>P</i> =.92	.015	1.0			
NPDB adverse reports	-.321 <i>P</i> =.02	-.290 <i>P</i> =.04	.181 <i>P</i> =.20	1.0		
Complaints per physician	-.067 <i>P</i> =.70	-.106 <i>P</i> =.539	.078 <i>P</i> =.65	.177 <i>P</i> =.30	1.0	
Actions per complaint	-.374 <i>P</i> =.03	-.526 <i>P</i> =.001	.045 <i>P</i> =.80	.147 <i>P</i> =.40	-.526 <i>P</i> =.001	1.0

Note: All rankings constructed so that lower number is desirable, n=51 (states plus District of Columbia). Complaints per physician and actions per physician (n=35) were scored as the proportion for each responding state. Correlations in bold italics have *P*<.05.

rate of disciplinary actions and its quality ranking.¹²

The quality measure we chose—states’ rankings on the 24 indicators tracked by Medicare—may not have been an appropriate proxy for the quality of a state’s physicians. We therefore selected another metric for comparison: states’ rates of adverse reports to the NPDB. Our analysis found a significant negative correlation between the rate of NPDB adverse reports and the HRG disciplinary actions ranking ($r=-0.321$, $P<.05$). That is, the HRG report ranked highest (best performing) those states with the worst NPDB ranking (i.e., most adverse reports per physician).

Finally, we examined state rates of complaints and of actions taken on complaints against physicians, and contrasted those against the HRG rankings. Of the 35 state medical boards that provided valid responses to our survey, Wisconsin had the third lowest rate of complaints against physicians and fourth highest ratio of prejudicial actions (FSMB category A, B, or C) relative to complaints filed.

These inconsistent conclusions raise several possible inferences. Wisconsin’s patients may be less willing or able to file complaints against their physicians or their satisfaction with care may be comparatively high. These inferences cannot be confirmed, however, because states vary substantially in reporting requirements and measuring complaints. The previous example of a state that changed its law to count all malpractice claims as medical board complaints demonstrated the instability of such measurements by deflating overnight its ratio of actions to complaints.

Another possibility is that Wisconsin physicians may have a lower rate of licensure sanction because they may

be doing a better job, as measured by Medicare quality indicators, NPDB adverse reports, and complaints by patients. Thus, it could be the quality of physician performance, rather than the laxity of its medical board, that causes Wisconsin to have fewer licensure actions against physicians. A discussion of Wisconsin’s possible higher level of quality is beyond the scope of this paper, but may include its higher proportion of family physicians and other primary care physicians or its preponderance of multi-specialty groups providing practice oversight and support.¹³

There may be several reasons why these correlation analyses may not tell us what we want to know when comparing physician discipline and quality by ranking states. Using states as the unit of analysis may be faulty since states with large numbers of physicians may overshadow states with smaller numbers. However, partial correlations controlling for the absolute number of physicians in each state were run and the results were virtually identical. Alternatively, the disciplinary and quality measures we used may be independent of each other and measure components of physician quality that are unrelated to licensure sanctions. Even so, some comparisons did have significant correlations. As shown in Table 3, rates of serious and less serious licensure actions did correlate positively and strongly. Negative correlations were found between state rates of licensure actions and rankings by other formal reporting systems (i.e., NPDB adverse reports and actions per complaint).

Definitions of licensure actions and quality, methods of counting physicians, and ways of accounting for complaints vary significantly among states, making it impossible to draw meaningful and consistent conclu-

sions when comparing states' rankings. Consequently, it would appear unwarranted to base public policy decisions on such rankings. Given the limits of comparing states, what can be said about measuring and reporting health care processes and outcomes?

Reporting Physician Quality

Measuring health care quality is difficult and requires a considerable investment of resources to collect, assess, and report on various measures. While there is some evidence that public reporting of quality data may spur professionals to do better,¹⁴ it may also cause undesirable behavior, such as selecting against higher risk patients for heart surgery or other cardiac procedures.¹⁵ Just like any medical intervention, the measurement and public reporting of quality comes at a cost, and can have toxicity.¹⁶ Even more discouraging is the reality that few patients seem to understand or use¹⁷ such reports.

There may be other reasons to publicly report the performance of physicians. The quality of medical care varies substantially.^{13,18} Reporting these variances can cause physician practice behaviors to “regress to the mean” and improve simply because physicians know their performance is being evaluated.

Some believe that the health care system requires greater movement toward market-based competition¹⁹ and that physician performance data are essential to informed choices by purchasers. Others worry that market economics do not apply in health care as in other sectors of the economy and that the ethic of cooperation among health professionals for the benefit of all patients gives way to the economic necessities of viewing professional colleagues as competitors.²⁰ Recent enthusiasm for pay-for-performance programs is likely to promote more public disclosure of physician performance, although some argue that the effects of such programs, and their impact on care improvement, are less dramatic than hoped²¹ and may be best accomplished by focusing on the system of care rather than the individual physician.²²

Reporting Physician Discipline

Concerns about the mixed effects of public reporting seem less relevant when it comes to addressing physician misconduct or incompetence. Rates of physician discipline appear to be rising,²³ although it is not clear that physician performance is getting worse. Certain characteristics—male gender, lack of board certification, increasing age, and international medical school graduate status—are associated with an increased likelihood of discipline.²⁴ Other characteristics, such as frequency of malpractice suits, are unreliable predictors of poorer

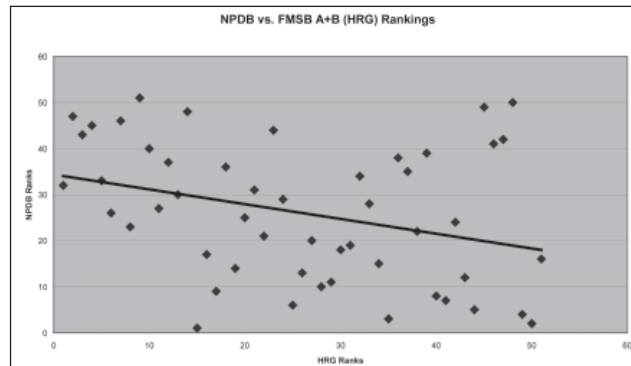


Figure 1. Correlation ($r=0.014$, $P=.92$) between states' rankings of rates of disciplinary actions using FSMB categories A + B (HRG report) and Medicare quality performance.

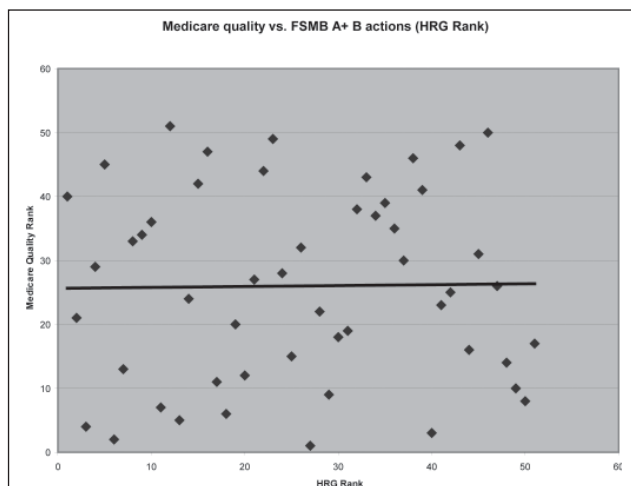


Figure 2. Correlation ($r=-.321$, $P=.02$) between states' rankings of rates of disciplinary actions using FSMB categories A + B (HRG report) and adverse reports to the National Practitioner Data Bank (NPDB).

quality physicians.²⁵ Against the backdrop of rising demands for greater accountability and transparency, it is understandable that there are calls for disclosure of more physician information. It is not clear however, whether the release of more information leads to better physician performance or whether useful conclusions can be drawn from rankings of physician discipline and quality.

In evaluating reports on physician performance, as in deciding the value of a medical treatment, consideration must be given to the underlying assumptions, methods used, data presented, costs of reporting, and intended audiences of the report. Rankings of state medical boards by rates of disciplinary actions against physicians do not correlate in our study with other measures of physician quality or patient complaints. In the marketplace of health care ideas, whether choosing a personal physi-

cian or crafting public policy, discerning consumers of physician discipline and quality reports would do well to remember the principle of caveat emptor.

Financial Disclosures: None declared.

Funding/Support: Supported in part by a contract with the Wisconsin Medical Society; DAF for data acquisition and analysis; DPM for data analysis.

REFERENCES

- Harris KM. How do patients choose physicians? Evidence from a national survey of enrollees in employment-related health plans. *Health Serv Res.* 2003;38:711-732.
- Epstein AM. Performance reports on quality—prototypes, problems, and prospects. *N Engl J Med.* 1995;333:57-61.
- Ginsberg PB, Moy E. Physician licensure and the quality of care. The role of new information and technologies. CATO Regulation, The Review of Business & Government. Available at: www.cato.org/pubs/regulation/reg15n4c.html. Accessed November 28, 2006.
- Wolfe SM, Lurie P. Ranking of the rate of State Medical Boards' Serious Disciplinary Actions in 2003 (HRG Publication #1696). Washington, D.C.: Public Citizen Health Resource Group. April 14, 2003.
- United Health Foundation. American's Health: State Health Rankings—2004 Edition. Available at: www.unitedhealthfoundation.org/shr2004/index.html. Accessed November 28, 2006.
- Kaiser Family Foundation. State Health Facts. Available at: www.statehealthfacts.kff.org/ Accessed November 28, 2006.
- Agency for Health care Research and Quality. National Health Care Quality Report. Available at: <http://qualitytools.ahrq.gov/qualityreport/>. Accessed November 28, 2006.
- Jencks SF, Huff ED, Cuerdon T. Changes in the quality of care delivered to Medicare beneficiaries, 1998-1999 to 2000-2001. *JAMA.* 2003;289:305-312.
- National Practitioner Data Bank. Available at: www.npdb-hipdb.com/pubs/stats/NPDB_Summary_Report.pdf. Accessed November 28, 2006.
- United States General Accounting Office. Report on the National Practitioner Data Bank. GAO-01-130. Washington, DC. Available at: www.npdb-hipdb.com/pubs/stats/NPDB_Summary_Report.pdf. Accessed November 28, 2006.
- Galang v. State Medical Examining Board. 168 Wis.2d 695, 484 N.W.2d 375 (Ct. App. 1992).
- Treffert DA, Johnson SE. Report on a flawed "report card": the Public Citizens ranking of medical licensing boards. *WMJ.* 2005;104:11-16.
- Baicker K, Chandra A. Medicare spending, the physician workforce, and the beneficiaries' quality of care. *Health Aff (Millwood).* 2004;Suppl Web Exclusive: W184-197.
- Marshall MN, Shekelle PG, Leathumon S, Brook RH. The public release of performance data: what do we expect to gain? a review of the evidence. *JAMA.* 2000;283:1866-1874.
- Narins CR, Dozier AM, Ling FS, Careba W. The influence of public reporting of outcome data on medical decision making by physicians. *Arch Intern Med.* 2005;165:83-87.
- Werner RM, Asch DA. The unintended consequences of publicly reporting quality information. *JAMA.* 2005;293:1239-1244.
- Schneider EC, Epstein AM. Use of public performance reports. a survey of patients undergoing cardiac surgery. *JAMA.* 1998;279:1638-1642.
- McGlynn EA, Asch SM, et al. The quality of health care delivered to adults in the United States. *N Engl J Med.* 2003;348:2635-2645.
- Federal Trade Commission and Department of Justice. Improving health care competition: a dose of competition. Washington, DC, 2004. Available at: www.usdoj.gov/atr/public/health_care/204694.htm. Accessed November 28, 2006.
- Relman AS. The impact of market forces in the physician-patient relationship. *J R Soc Med.* 1994;87(S22):22-24.
- Rosenthal MB, Frank RG, Li Z, Epstein AM. Early experience with pay-for-performance: from concept to practice. *JAMA.* 2005;294:1788-1793.
- Enthoven AC, Tollen LA. Competition in health care: it takes systems to pursue quality and efficiency. *Health Aff (Millwood)* 2005 Sept 7 [Epub ahead of print].
- Cardarelli R, Licciardone JC, Ramirez G. Predicting risk for disciplinary action by a state medical board. *Tex Med.* 2004;100:84-90.
- Kohatsu ND, Gould D, Ross LK, Fox PJ. Characteristics associated with physician discipline: a case-control study. *Arch Intern Med.* 2004;164:653-658.
- Ely JW, Dawson JD, Young PR, et al. Malpractice claims against family physicians. are the best doctors sued more? *J Fam Pract.* 1999;48:22-30.

Wisconsin Medical Journal

The mission of the *Wisconsin Medical Journal* is to provide a vehicle for professional communication and continuing education of Wisconsin physicians.

The *Wisconsin Medical Journal* (ISSN 1098-1861) is the official publication of the Wisconsin Medical Society and is devoted to the interests of the medical profession and health care in Wisconsin. The managing editor is responsible for overseeing the production, business operation and contents of the *Wisconsin Medical Journal*. The editorial board, chaired by the medical editor, solicits and peer reviews all scientific articles; it does not screen public health, socioeconomic or organizational articles. Although letters to the editor are reviewed by the medical editor, all signed expressions of opinion belong to the author(s) for which neither the *Wisconsin Medical Journal* nor the Society take responsibility. The *Wisconsin Medical Journal* is indexed in Index Medicus, Hospital Literature Index and Cambridge Scientific Abstracts.

For reprints of this article, contact the *Wisconsin Medical Journal* at 866.442.3800 or e-mail wmj@wismed.org.

© 2006 Wisconsin Medical Society