

Patient Complaints and Malpractice Risk

Gerald B. Hickson, MD

Charles F. Federspiel, PhD

James W. Pichert, PhD

Cynthia S. Miller, MSSW

Jean Gauld-Jaeger, MS

Preston Bost, PhD

CONVENTIONAL WISDOM HOLDS that a physician's malpractice experience is determined by factors associated with the physician, caseload, and unpredictable circumstances. One risk factor for lawsuits is area of specialty, a belief confirmed actuarially in the setting of malpractice rates.^{1,2} Even within a given discipline, however, some physicians are sued more often than others. Sloan et al³ observed disproportionate malpractice activity among internists, obstetricians, and surgeons, with 2% to 8% of these specialists accounting for 75% to 85% of their group's award and settlement costs.

Factors associated with physicians' experience with claims appear stable. Bovberg and Petronis⁴ found that a physician's malpractice risk did not fluctuate appreciably over time. Their finding is not surprising given that insurers typically handle claims one at a time, seeking to resolve individual claims, not necessarily to provide prevention-oriented feedback. Because suits are relatively infrequent even for physicians with high claims rates, physicians with the highest risk may not be aware that they generate more suits than their colleagues. Furthermore, physicians at high risk may dismiss individual claims simply as a cost of practicing a high-risk dis-

Context A small number of physicians experience a disproportionate share of malpractice claims and expenses. If malpractice risk is related in large measure to factors such as patient dissatisfaction with interpersonal behaviors, care and treatment, and access, it might be possible to monitor physicians' risk of being sued.

Objective To examine the association between physicians' patient complaint records and their risk management experiences.

Design, Setting, and Participants Retrospective longitudinal cohort study of 645 general and specialist physicians in a large US medical group between January 1992 and March 1998, accounting for 2546 physician-years of care.

Main Outcome Measures Computerized records of all unsolicited patient complaints were recorded by the medical center's patient affairs office, coded to characterize the nature of the problem and alleged offender, and compared with each physician's risk management records for the same period.

Results Both patient complaints and risk management events were higher for surgeons than nonsurgeons. Specifically, 137 (32%) of the 426 nonsurgeons had at least 1 risk management file compared with nearly two thirds (137 [63%] of 219) of all surgeons ($\chi^2_1=54.7$, $P<.001$). Both complaint and risk management data were positively correlated with physicians' volume of clinical activity. Logistic regression revealed that risk management file openings, file openings with expenditures, and lawsuits were significantly related to total numbers of patient complaints, even when data were adjusted for clinical activity. Predictive concordance of specialty group, complaint count, clinical activity, and sex for risk management file openings was 84%; file openings with expenditures, 83%; lawsuits, 81%; and multiple lawsuits, 87%.

Conclusions Unsolicited patient complaints captured and recorded by a medical group are positively associated with physicians' risk management experiences.

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cipline, an especially litigious population, or even bad luck.

Research has forced reconsideration of these traditional explanations of claims experience. Risk seems not to be predicted by patient characteristics, illness complexity, or even physicians' technical skills.^{5,6} Instead, risk appears related to patients' dissatisfaction with their physicians' ability to establish rapport, provide access, administer care and treatment consistent with expectations, and communicate effectively.⁷⁻¹¹

If claims experience is related to patient dissatisfaction, it might be possible to create a monitoring or surveil-

lance system that could be used to alert physicians to their risk of being sued. Such a system would require a proxy for a malpractice claim, something that could be counted and related to the rea-

Author Affiliations: Departments of Pediatrics (Drs Hickson and Bost), Preventive Medicine (Dr Federspiel), Medicine (Dr Pichert), and Social Work (Ms Miller), and Office of Patient Affairs (Ms Gauld-Jaeger), Vanderbilt University School of Medicine, Nashville, Tenn.

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Corresponding Author and Reprints: Gerald B. Hickson, MD, Department of Pediatrics, Division of General Pediatrics, Vanderbilt University School of Medicine, Nashville, TN 37232 (e-mail: Gerald.Hickson@mcmail.vanderbilt.edu).

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sons patients file claims, but that occurs more frequently than lawsuits. A previous study¹² of one medical group showed that 10% of its physicians were associated with more than half of all unsolicited patient complaints, recalling the finding that malpractice suits were similarly disproportionate.^{3,4} That study did not evaluate whether complaints and risk management activity were related. Nor did it account for physicians' area of specialty, volume of service, years in practice, sex, or other variables that might affect complaint generation, risk management-related activity, or any association among them. The research hypothesis tested herein is that unsolicited patient complaints will differentiate physicians at high and low risk of malpractice even after accounting for such variables. If evidence is found to support this hypothesis, patient complaints might then provide a foundation for a monitoring system. The specific issues under investigation include (1) the distribution of unsolicited patient complaints in a large multispecialty group of physicians with varied risk management activity and (2) the extent to which a physician's risk management activities might be predicted from knowing her/his numbers of patient complaints, specialty area, volume of service, and other potential predictors.

METHODS

Examining the relationship between complaints and risk management activity requires longitudinal data from a well-defined physician cohort. Cohort members were employed in a medical center with (1) a complaint system capable of capturing patient dissatisfactions with inpatient and outpatient services and identifying physicians mentioned in the complaints, (2) an insurance and risk management program for assessing the potential for legal actions, and (3) a reliable means for identifying practice specialty and volume of service. Data from 3 sources were integrated into a research database that covered a 75-month period from January 1992 through March 1998. This study was approved by the Vanderbilt

University Committee for the Protection of Human Subjects and Executive Leadership. The research team was constituted under the aegis of risk management and quality assurance.

Cohort

The cohort was defined using files that identified individual physicians, dates of service, specialty, sex, year, country of medical school graduation, and numbers of relative value units (RVUs)¹³ provided each service year. The medical group included 645 eligible physicians. Pathologists and radiologists were excluded because they rarely have patient contact as well as anesthesiologists, emergency medicine physicians (who could rarely be identified from patient complaints), resident physicians, and those in administrative and research positions with fewer than 100 RVUs of care.

The cohort was divided into surgical and nonsurgical practice types for some analyses.¹ The surgical subgroup included general, vascular, cardiothoracic, plastic, and orthopedic surgery, otolaryngology, obstetrics and gynecology, neurosurgery, and ophthalmology. The nonsurgical subgroup included medicine (generalists and all specialties), pediatrics, psychiatry, and neurology.

Clinical activity was measured using a log transformation of the number of RVUs expressed as a percentage of the group average. The transformation was used to normalize the clinical activity variable within the cohort, yielding an overall mean (SD) of 100 (10).

Complaint Data

Complaint data came from the files of the medical center's Patient Advocates Office (PAO). The PAO staff entered each patient or family member complaint into a database that included the names of staff and locations associated with the incident(s) and a narrative describing the problem(s). Narratives were coded for specific complaint(s) using a standardized set of codes. This coding system and interrater and test-retest reliabilities have been previously reported.^{12,14} Complaint codes include 6 general categories:

communication, humaneness, care and treatment, access and availability, environment, and billing. All complaints about cohort members were included in the database.

Risk Management Data

The database included risk management activities associated with each physician. The study's 3 risk management outcomes included risk management files (RMFs), RMFs with expenses, and lawsuits.

The medical group and medical center are self-insured. An Office of Insurance and Risk Management solicits incident reports whenever staff are concerned about adverse events, errors, threats to file a lawsuit, and attorneys' requests for medical records. If risk management staff determine that an incident could lead to legal action, an RMF is opened. Each RMF contains a description of the incident, a list of possible defendants, activity associated with the case, and expenses incurred. Expenses include the cost of documentation, legal fees, expert witnesses, and settlements and awards. However, actual dollar values are not reported. Considerations of confidentiality and extreme variation in expenses precluded using financial data directly. The RMFs are closed after settlement, court action, or passing of a statute of limitation. The incident data files included all RMFs (open and closed) during the study period in which any cohort physician was listed as a defendant or potential defendant.

Lawsuits alone are too limited a variable for assessing risk management activity. Several studies^{15,16} suggest only a fraction of patients with valid claims file a lawsuit. Families may never question care received, or may just decide not to sue even if they have a claim.¹⁷ Consequently, we also included RMFs both with and without expenses because they represent the universe of all risk management activity. No attempt was made to determine whether the RMFs represented valid claims. The validity of most lawsuits is difficult to determine because there are no universally accepted standards for assessment.^{18,19}

Statistical Analyses

Mean numbers of complaints and 95% confidence intervals were used to evaluate the medical group cohort's distribution of complaints. For each risk management–related variable, specific comparisons involved practice type (surgeons vs nonsurgeons), sex (female vs male), time since medical school graduation, and country of medical training (United States vs other). The complaint data were highly skewed (consistent with previous research,¹² many physicians had few or none; few had many), so log transformations of the numbers of complaints were used to achieve normality, producing geometric means used for inferential statistical analysis. Means of raw complaint numbers are reported throughout the article for ease of interpretation.

To test for independence of numbers of complaints and RMFs, χ^2 analyses were used. Logistic regression analyses were conducted to evaluate associations between numbers of complaints and risk management outcome variables, adjusting for physician specialty (surgery vs nonsurgery), clinical activity (normalized RVUs), and selected physician demographics. To reflect the appropriateness of these logistic models, we tabulated the predictive concordance, which is the probability that the model correctly classified the observed data. Wald χ^2 values for the explanatory variables also were computed to show the relative importance of complaints, specialty, clinical activity, and sex for each logistic regression fitted. Finally, a second set of logistic regressions was conducted for those physicians who had any complaints to assess whether any category(ies) had greater association with risk management outcome variables. All statistical analyses were performed using SAS statistical software (Version 6.09, SAS Institute Inc, Cary, NC). The level of significance was set at .05.

RESULTS

Cohort

During the 75-month period, the 645 physicians provided 2546 years of care. Two hundred nineteen (33.9%) were

surgeons; 426 (66.1%) were in medicine, pediatrics, or neurology. Most were male (79.1%) and US medical graduates (89.3%). Almost one fifth (18.7%) completed training before 1970; 11.4% graduated after 1989. Length of cohort members' service in the medical group during the target period averaged 4 years (surgeons, 4.0 years; nonsurgeons, 3.9 years).

Complaints

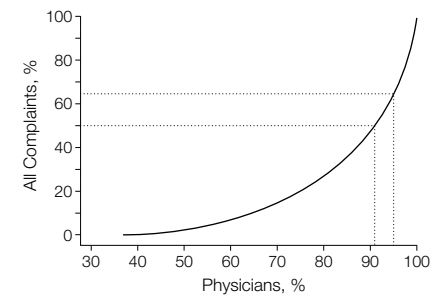
The PAO staff documented 18851 complaints in 7977 separate reports during the study period. Complaints originated almost equally between inpatient and outpatient sites. Of the total number of complaints, 5108 (27%) identified a physician by name, 2856 (56%) identified a surgeon, and 2252 (44%) a nonsurgeon. The FIGURE depicts the cumulative percentage of complaints by the percentage of physicians in the group. Of 645 physicians, 239 (37%) received no complaints during the study period (30% of surgeons and 41% of nonsurgeons). The dotted lines in the Figure highlight the points in the curve that show that 9% of the cohort generated more than 50% of all complaints and 5% accounted for nearly one third of all complaints. The mean number of complaints for all group members was 7.9 (5.3 for nonsurgeons and 13.0 for surgeons; $P<.001$).

Risk Management Activities

During the study period, 847 RMFs were opened and 504 (59.5%) involved cohort members. The 343 RMFs not involving a physician included slips and falls, missing belongings, intravenous infiltrations, medication errors not involving physicians' orders, and miscellaneous injuries involving environmental hazards. Of the RMFs involving cohort members, 254 (50%) involved expenditures. In 135 cases (27%), either a lawsuit was filed (111 cases) or settlements were made before initiation of formal legal proceedings (24 cases). These 135 cases are referred to as lawsuits.

Most RMFs named only 1 physician (77%), with a smaller percentage naming 2 (16%), whereas 7% involved 3 or more. Similar findings were obtained

Figure. Cumulative Distribution of Physician Cohort Members and Unsolicited Complaints



The dotted lines illustrate that 9% of cohort members were associated with 50% of patient complaints and 5% were associated with approximately one third of all complaints.

when the RMFs were restricted to the 254 cases with expenses. Among the 135 lawsuits, a single physician was named in 99 (73%). Two physicians were named in 23 (17%) and 3 or more in 13 (10%) cases.

Because the unit of observation was the physician, not a risk management event, data for all 645 physicians were summarized (TABLE 1). Fewer than half ($n=274$ [42%]) were named in any RMF, and 139 (22% of the total) were subjects of at least 1 lawsuit. Forty-three physicians (7%) were involved in 2 or more lawsuits during the study interval. When examined according to practice type, nonsurgeons had less risk management activity. Specifically, 137 (32%) of the 426 nonsurgeons had at least 1 RMF compared with nearly two thirds (137 [63%] of 219) of all surgeons ($\chi^2=54.7$; $P<.001$). Only 19% of nonsurgeons had RMFs involving expenditures compared with more than half (51%) of the surgeons ($\chi^2=71.2$; $P<.001$). Thirteen percent of nonsurgeons vs 37% of surgeons had been named in at least 1 lawsuit ($\chi^2=49.5$; $P<.001$), and only 2% of nonsurgeons compared with 16% of surgeons were named in 2 or more suits ($\chi^2=46.2$; $P<.001$).

Complaints and Risk Management Activity

TABLE 2 reveals the numbers of study cohort physicians with selected combinations of RMF openings and unso-

Table 1. Physician Risk Management Experiences by Physician Practice Type*

Practice Type	No. (%) Within Practice Type of Cohort Physicians With Risk Management Experiences†							
	No. (%) of Total Physicians	At Least 1 RMF	χ^2_{12}	At Least 1 RMF With Expenses	χ^2_{12}	At Least 1 Lawsuit	χ^2_{12}	Multiple Lawsuits
Nonsurgeons	426 (34)	137 (32)	54.7	81 (19)	71.2	57 (13)	49.5	8 (2)
Surgeons	219 (66)	137 (63)		112 (51)		82 (37)		35 (16)
Total	645 (100)	274 (42)		193 (30)		139 (22)		43 (7)

*RMF indicates risk management file.

†Categories are not mutually exclusive.

‡ $P < .001$ for differences in percentages of nonsurgeons and surgeons with each risk management experience.**Table 2.** Cohort Member Physicians With Selected Combinations of Risk Management File (RMF) Openings and Unsolicited Patient Complaints*

No. of RMF Openings	Unsolicited Patient Complaints, No. (%)					Total
	0-1	2-6	7-14	15-24	≥25	
0	223 (35)	92 (14)	44 (7)	9 (1)	3 (1)	371 (58)
1	38 (6)	38 (6)	27 (4)	13 (2)	6 (1)	122 (19)
2	9 (1)	17 (3)	13 (2)	14 (2)	11 (2)	64 (10)
≥3	6 (1)	13 (2)	12 (2)	21 (3)	36 (6)	88 (14)
Total	276 (43)	160 (25)	96 (15)	57 (8)	56 (10)	645 (100)

* $\chi^2_{12} = 274$; $P < .001$.

olicited patient complaints. Two hundred twenty-three cohort members (35%) had zero or 1 complaint and zero RMFs during the study period. By contrast, 36 study physicians (6%) were associated with 25 or more complaints and 3 or more RMFs. For the data in Table 2, which are not adjusted for demographic variables or service volumes, the association of complaints and RMFs per physician was significant ($\chi^2_{12} = 274$; $P < .001$). Alternative groupings of complaints and RMFs per physician yielded similar results. Complaint activity also was associated with the number of RMFs with expenses ($\chi^2_{12} = 205$; $P < .001$) and lawsuits per physician ($\chi^2_{12} = 165$; $P < .001$).

Surgeons named in a single lawsuit generated significantly more complaints than surgeons with no lawsuits (mean complaints = 16.7 vs 6.1; $P < .001$). The same pattern of results was true of nonsurgeons (9.2 vs 4.7; $P = .004$). Surgeons with 2 or more lawsuits had significantly more complaints than their colleagues with 1 lawsuit (35.1 vs 16.7; $P = .001$) or zero lawsuits (35.1 vs 6.1; $P < .001$). The results were similar for RMFs and RMFs with expenses. Physicians of both types who had no suits generated few patient complaints (6.1 for surgeons vs 4.7 for nonsurgeons, $P = .14$).

Other physician characteristics that might affect complaint counts or RMF generation were examined. These included clinical activity, sex, year of graduation (as a proxy for age), and country of medical school training. Neither year of graduation nor country of medical training were related to complaint generation or any of the risk management outcomes. Complaints did vary by sex (means, 5.0 for female physicians and 8.8 for male physicians; $P < .001$). Female physicians also were less likely than male physicians to be involved with RMFs, RMFs with expenses, or lawsuits. Specifically, for RMFs, 31% of female physicians had file openings vs 46% for male physicians. Similarly, the counterpart RMF openings with expenses and lawsuits were 19% and 13%, respectively, for female physicians and 33% and 24%, respectively, for male physicians.

Logistic regression analyses were performed to assess the adjusted relationships between risk management variables and physicians' complaints, specialty type, clinical activity, and sex (TABLE 3). High complaint generation, surgical specialty, and higher levels of clinical activity were all significantly associated with each measure of risk management activity: an RMF, an RMF with expenses, and involvement

in a single or multiple lawsuits. Male sex, however, was significantly associated only with having an RMF or an RMF with expenses. Goodness of fit was measured for the logistic regression models (Table 3) using predictive concordance. For the models involving all physicians, predictive concordance ranged from 81% to 87%.

Relationships among complaints, risk management activity, clinical activity, and sex were also examined separately for surgeons and nonsurgeons (Table 3). For each group, high complaint generation and high clinical activity were significantly associated with having an RMF. For surgeons, high complaint generation, clinical activity, and male sex were associated with having an RMF; only high complaint generation and clinical activity were associated with having an RMF with expenses. Similarly, both complaints and clinical activity were significant explanatory variables for surgeons named in a lawsuit. Only total complaint count, however, was associated with surgeons named in 2 or more lawsuits.

Next, using data only from the 406 physicians who generated at least 1 complaint, we examined the distributions and influences of particular complaint categories. As with the entire cohort, surgeons in this group attracted significantly more complaints than nonsurgeons (mean, 18.6 vs 8.9; $P < .001$). Within complaint categories, surgeons more frequently than nonsurgeons were associated with complaints related to care and treatment (mean, 5.9 vs 2.9; $P < .001$), billing (mean, 4.9 vs 2.4; $P < .001$), communication (mean, 4.0 vs 1.7; $P < .001$), access and availability (mean, 2.1 vs 0.9; $P < .001$), and hu-

maneness (mean, 1.6 vs 1.0; $P = .06$). Finally, TABLE 4 shows the relationships, adjusted for clinical activity, between these 406 physicians' risk management variables and numbers of complaints within each category. Table 4 reveals that clinical activity accounted for most of the concordance in logistic regressions that used complaint types to predict risk management outcomes. No category of complaint was more predictive of risk management activity than others.

COMMENT

Unsolicited complaints recorded by a medical group's PAO can be used to differentiate physicians by their malpractice risk. A relatively small number of

physicians generated a disproportionate share of complaints. Furthermore, physicians' complaint generation was positively associated with risk management outcomes, ranging from file openings to multiple lawsuits. Relationships between overall complaint generation and risk management activity remained even when clinical activity was controlled, suggesting that patient complaints may serve as an important indicator for a risk management monitoring system.

Results are consistent with previously published research on relationships between patients' dissatisfaction with care and malpractice claims.⁷⁻¹¹ Patients who saw physicians with the high-

est numbers of lawsuits were more likely to complain that their physicians would not listen or return telephone calls, were rude, and did not show respect.^{8,9} Such complaints are similar to those documented in interviews with families who sued their physicians.^{7,10,11} In the present study, the total number of patient complaints, not any particular type, predicted risk management outcomes. Subsidiary logistic regression analyses showed that numbers of each complaint type were significantly associated with risk management outcomes (data not shown). However, as shown in Table 4, when clinical activity was added to the model, the relationships largely disappeared. Only complaints about care

Table 3. Results of Logistic Regression Analysis to Assess Association Between Risk Management Outcomes (Dependent Variables) and Specialty Group, Complaint Count, Clinical Activity, and Sex (Explanatory Variables)

Dependent Variable and Specialty Group	No. of Physicians With Each Dependent Variable (N = 645)	Wald χ^2 for Explanatory (Predictor) Variables								Predictive Concordance*
		Specialty Group		Complaint Count		Clinical Activity		Sex		
		χ^2	P Value	χ^2	P Value	χ^2	P Value	χ^2	P Value	
Risk management files (RMFs)										
All physicians	274	20.0	<.001	27.3	<.001	54.1	<.001	4.8	.03	84
Nonsurgeons	137			15.1	<.001	25.2	<.001	2.3	.13	77
Surgeons	137			11.8	<.001	27.6	<.001	4.1	.04	92
RMFs with expenses										
All physicians	192	31.1	<.001	11.3	<.001	47.1	<.001	4.5	.03	83
Nonsurgeons	81			2.3	.13	23.1	<.001	1.6	.21	74
Surgeons	111			10.3	.001	21.4	<.001	3.6	.06	87
At least 1 lawsuit										
All physicians	139	16.4	<.001	8.3	.004	33.4	<.001	3.7	.05	81
Nonsurgeons	57			0.3	.58	24.9	<.001	3.0	.08	76
Surgeons	82			12.5	<.001	7.3	.007	0.7	.40	81
Multiple lawsuits										
All physicians	43	14.8	<.001	14.9	<.001	3.8	.05	1.6	.21	87
Nonsurgeons	8			0.3	.58	3.4	.06	0.5	.48	76
Surgeons	35			17.6	<.001	0.2	.66	1.2	.27	83

*Probability that the explanatory model correctly classifies each type of risk management activity.

Table 4. Results of Logistic Regression Analysis to Assess Association Between Risk Management Outcomes (Dependent Variables) and Clinical Activity Plus 5 Complaint Categories (Explanatory Variables)

Wald χ^2 for Explanatory (Predictor) Variables								
Dependent Variable	No. of Physicians With Complaints and Dependent Variables (N = 406)	Clinical Activity	Type of Complaints					Predictive Concordance*
			Communication	Care and Treatment	Humaneness	Access	Billing	
Risk management files (RMFs)	232	24.8†	3.8	4.0‡	1.0	0	2.8	80
RMFs with expenses	168	21.2†	2.1	4.8‡	1.9	2.2	4.0‡	78
At least 1 lawsuit	123	17.5†	2.1	2.6	0	0.7	0.1	74

*Probability that the explanatory model correctly classifies each type of risk management activity.

† $P < .001$.

‡ $P < .05$.

and treatment added a modest contribution to predictive concordance with RMF openings and RMF openings with expenses. Perhaps that is because complaints about care and treatment are more likely to come to the attention of risk managers who, in turn, may be more likely to investigate them (ie, open RMFs and pursue more extensive and costly reviews) than complaints about interpersonal issues of communication and concern. Possible reasons that type of complaint was not predictive include: patient thresholds for registering dissatisfaction and pursuing claims are idiosyncratic and variable, patient and family complaints stated in terms of one thing (eg, billing or access issues) may really have been about others (eg, care and treatment), and/or the system for coding complaints is not accurate. However, both the coding system and patients' narrative complaints have substantial face validity.¹² Although one category of complaint is not more predictive of malpractice activity than another, typing the complaints may suggest both the cause(s) of a particular physician's risk and directions for quality improvement.

Other findings include the association of risk management activity with sex, practice type, and volume of clinical activities. Female physicians attracted fewer unsolicited complaints and were less likely to be involved in RMFs compared with their male colleagues. Perhaps the female physicians in this cohort were more clinically and/or interpersonally competent. Or perhaps patients were less likely to complain about and/or risk managers were less likely to open files in cases involving female physicians. Until replicated, this result should be interpreted with caution.

The fact that surgeons attracted more lawsuits than nonsurgeons is not surprising.^{1,2} The association between lawsuits and clinical activity has been reported by Baldwin et al.²⁰ Their study, however, focused only on physicians providing obstetric care and relied on self-reported numbers of deliveries, not a standardized measure of productivity. Although data from the present

study do not provide a causal link between volumes of service and lawsuits, it is plausible that high numbers of RVUs mean less time per patient and less attention to interpersonal and/or technical aspects of care. Perhaps one implication is that practice managers should consider discounting RVUs above some threshold as counterproductive for group reputation and liability experience. A larger data set than the one used will be required for reliably estimating such a threshold.

Although positive relationships were identified among unsolicited patient complaints, clinical activity, and risk management outcomes, the results may not be generalizable. The study reflects only 75 months of data from a single group. Claims experience varies regionally. Patient willingness and opportunity to complain may vary as well. The analysis also is limited in that unsolicited complaints undoubtedly represent only the "tip of the iceberg"²¹ and may not be as representative as data from a standardized survey. On the other hand, unsolicited complaints have face validity and are readily available as a part of "customer service" activities,^{14,22} and they may more adequately describe respondents' experiences, expectations, and priorities.²³⁻²⁵

Another concern is that PAO personnel may have recorded only the big complaints, such as those from families complaining about adverse outcomes, recorded physicians' names only in big complaints, or recorded complaints only about physicians they know have problems. All are possible, but unlikely. During the study period, more than 18 000 complaints were lodged, including thousands about parking, food services, and the physical environment. Furthermore, nearly two thirds of all physicians were identified in at least 1 complaint. The PAO policy is to record all complaints, and staff are expected to forward "write-ups" to all professionals involved to encourage resolution of patient dissatisfaction.¹⁴ Selective reporting would defeat the goal of identifying and helping to resolve patient complaints.

Both PAO and risk management personnel were aware that their reports were being read "for research purposes" only during the last third of the 75-month target period. They were not, however, aware of the specific research questions being addressed. We could find no quantitative evidence in numbers of files created that either group increased overall reporting or changed its reporting practices during the study period, but we cannot rule out the possibility. Anecdotal, after PAO staff became aware that their writings were being read by the researchers, their reports, although not more numerous, did seem to include somewhat more narrative detail, although no more specific complaints.

Notwithstanding the possibility of reporting biases, our study did identify a relatively small number of physicians in a medical group who had both dissatisfied patients and relatively high malpractice activity. Using 3 variables (unsolicited complaints, relative RVU production, and specialty), we identified 52 physicians (8% of the cohort) with the highest risk scores who were involved in 48% of all suits experienced by the physicians in this study. A subsequent study will evaluate the effectiveness of a complaint-based intervention on high complaint-generating physicians.

No attempt was made to examine whether patient complaints or lawsuits occurred first. If a physician named in a lawsuit is widely known in a community, such awareness might encourage other patients to complain. The physician also may act angry and defensive with subsequent patients, in turn generating more complaints. In such circumstances, complaints would be a product of being sued, not a reflection of practice behaviors that created dissatisfaction and set the stage for litigation in the face of an adverse outcome. Such a scenario is possible but not likely. In our view, few patients are aware of the lawsuit status of their physicians. Furthermore, since risk status appears stable over time,⁴ the practical implication is the same regardless of temporal order. That is, whether complaints beget suits or vice

versa, the cycle needs to be disrupted, perhaps as suggested herein by aggregating complaints as a risk management monitoring and intervention tool. This is not to suggest that the question of the temporal relationship between complaints and suits is unimportant. This study, however, was designed simply to examine the association between complaints and risk management variables for purposes of evaluating the utility of the former for monitoring risk of the latter.

The ability to identify lawsuit-prone physicians by means other than counting lawsuits offers opportunities for intervention. Levinson et al¹⁰ found that physicians without malpractice claims offered patients more orienting and facilitating comments, as well as used more humor than colleagues with malpractice claims. Others have reported that physicians with low claims experience were more likely than their colleagues with high claims experience to be perceived as concerned and willing to answer questions.¹⁰ Both technical and interpersonal skills can be learned,^{26,27} and it is likely that some physicians could acquire and use needed skills if they both recognized that they were at high litigation risk and understood the environmental and behavioral factors that contributed to their risk. Studies^{28,29} have shown that physicians' practice patterns and behaviors can change when data show them to differ substantially from their peers, especially if the messenger and method of disclosure are appropriate, strategies for practice changes are available, and the administrative environment is supportive.

The process of capturing, coding, aggregating, and reporting patient complaints carries risk.^{19,30} A PAO provides a means of confidential complaint resolution. Release of information, whether intentional or inadvertent, might reduce the incentive for patients or employees to alert medical center representatives of potential problems. Reduced reporting would obviously hinder the PAO's mission, to say nothing of the potential of unwarranted damage to reputations, disruption of relationships, and lawsuits. Research and quality improve-

ment efforts that make use of complaint data must be performed in an atmosphere of confidentiality. Every research team member involved in the present study received counseling regarding the sensitive nature of the data and signed a confidentiality agreement before participation.¹²

Finally, efforts to improve institutional quality by identifying and intervening with high complaint-generating physicians will require protection from legal discovery.³⁰ In an environment characterized by high rates of legally invalid lawsuits, medical centers and their patients can benefit by identifying the origins of invalid claims in hopes of preventing others. Justifying protection from discovery, however, requires that such confidential information actually be used for quality improvement purposes. The identification of an association between complaint data and risk management activity offers an excellent opportunity for addressing sources of patient dissatisfaction that can lead inappropriately toward the courtroom.

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Acquisition of data: Hickson, Federspiel, Miller, Gauld-Jaeger, Bost.

Analysis and interpretation of data: Hickson, Federspiel, Pichert, Miller.

Drafting of the manuscript: Hickson, Federspiel, Bost. **Critical revision of the manuscript for important intellectual content:** Federspiel, Pichert, Miller, Gauld-Jaeger, Bost.

Statistical expertise: Federspiel, Pichert, Miller.

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