Relation of patients’ experiences with individual physicians to malpractice risk

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Abstract

Objective. Patient care experience survey data might be useful for managing individual physician malpractice risk, but available evidence is limited. This study assesses whether patients’ experiences with individual physicians, as measured by a validated survey, are associated with patient complaints and malpractice lawsuits.

Design. Random samples of active patients in physicians’ panels, with sample sizes adequate to provide highly reliable, stable information about patients’ experiences with each physician (n = 19 202, average respondents per physician = 119) were used to assess the relation of patient survey measures to malpractice risk.

Setting. A large multi-specialty physician organization in eastern Massachusetts, USA.

Participants. Physicians providing care for at least 5 years in adult primary care and select high-risk specialty departments between January 1996 and December 2005 (n = 161).


Results. Compared to primary care physicians, high-risk specialists had a lower patient complaint rate (0.34 vs. 1.36 complaints per patient care full time equivalent; P < 0.001), but a higher lawsuit rate (0.09 vs. 0.05 lawsuits per patient care full time equivalent; P = 0.02). Irrespective of physician specialty, the quality of physician–patient interactions (IRR = 0.61; P < 0.001) and care coordination (IRR = 0.65; P < 0.001) were inversely associated with patient complaints. Patient survey measures were not associated with malpractice lawsuits.

Conclusions. The results underscore the challenges organizations face when attempting to use patient survey data to manage individual physician medical malpractice risk. Because lawsuits are infrequent events, calibrating these validated patient survey measures to malpractice lawsuit risk will require large physician samples from diverse practices.

Keywords: care coordination, doctor–patient relationship, medical malpractice, patient complaints, risk management

The costs associated with medical malpractice activities in the USA over the past decade have driven malpractice to the forefront of health policy concerns [1]. As a result of increasing malpractice premiums in many areas, shortages of physicians in some specialties are emerging [2], some physicians are reluctant to perform high-risk procedures, and there is increasing evidence of early physician retirement [3]. Studies consistently find that the quality of physician–patient interactions is a key factor in patients’ decisions to sue physicians [4–13]. Available evidence, however, is limited in many ways and these limitations constrain organizations’ ability to proactively manage and minimize individual physician risk. This study aims to clarify whether patients’ experiences with individual physicians, as measured by the Ambulatory Care Experiences Survey (ACES), a validated survey providing detailed characterization of patients’ experiences with individual physicians and their practices [14–16], are associated with physicians’ patient complaints and malpractice lawsuits and to evaluate whether these associations vary by physician specialty.

Our study offers several important advances over previous work. First, the few studies that have assessed physician–patient interactions [8, 13, 17, 18] have lacked measures that differentiate important attributes of the physician–patient relationship and organizational features of care. This study employs data from a validated survey providing detailed characterization of patients’ experiences with individual physicians and their practices [14–16]. Second, the patient samples included in previous studies have not represented a cross-section of physicians’ panels. This study includes

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physician-specific information from a random sample of active patients in the physicians’ panel, with sample sizes adequate to provide highly reliable, stable information about patients’ experiences with each physician [14, 16]. Third, the associations between patient complaints, which have previously been found to be associated with medical malpractice risk [13, 19] and validated survey-based measures of patients’ experiences with individual physicians have never been assessed. We use unsolicited patient complaints data with detailed information about the clinician(s) involved and the nature of the complaint to assess these associations. Finally, previous studies also have typically examined a single physician specialty. The only study that stratified analyses by physician specialty found that communication style was associated with malpractice risk in primary care but not in surgical specialties, which is provocative and worthy of further inquiry [12].

Methods

This study uses patient survey and administrative data from a large physician organization in eastern Massachusetts, USA. The physician organization uses the ACES to routinely monitor patients’ experiences with individual physicians and their practices (1 January 2004 to 30 June 2005) and documents unsolicited complaints from patients (1 January 2001 to 31 December 2005). This study uses 10 years of lawsuit data (1 January 1996 to 31 December 2005).

Physician cohort

All physicians providing care for at least 5 years in adult primary care (n = 92) and select specialty departments (n = 69) (Obstetrics and Gynecology (n = 38), Urology (n = 6), General Surgery (n = 11) and Orthopedics (n = 14)) in the physician organization between 1 January 1996 and 31 December 2005 were included in the study. This analysis restriction draws on previous studies that limit analyses to specialists (vs. ratings) and consist of the following 6-item response continuum: ‘Never’, ‘Almost Never’, ‘Sometimes’, ‘Usually’, ‘Almost Always’ and ‘Always’. Summary scores are computed for each respondent based on the un-weighted average of responses to all items comprising the measure and then averaged for each physician. As detailed elsewhere [14], ACES summary measures were scored from 0 to 100 points, with higher scores indicating more favorable performance. In order to evaluate whether the patient panel characteristics of physicians were related to patient complaints and malpractice lawsuits, patient demographics and self-rated physical health were assessed.

Patient complaint data

We reviewed files of all unsolicited patient complaints for the years 2001–05. Complaints were documented by front line staff, clinicians and administrators at the 14 care sites of the physician organization using a web-based form with standardized fields for chief complaints. Each record was reviewed separately by two study team members (HPR, ACR) in order to categorize the primary chief complaint as access-related or not and to identify the clinician(s) involved. For individual complaints that involved one clinician but listed multiple complaints, the primary complaint listed was considered. For individual complaints that involved more than one clinician, a complaint record with the associated primary complaint was created for each clinician. Of the 1275 patient complaints identified, a total of 719 (56.4%) did not match any of the surveyed physicians (291 (22.8%) were directed at non-physician clinicians or staff, 276 (21.6%) were directed at non-surveyed physicians and 152 (11.9%) were directed at an unnamed physician that could not be ascertained from administrative data). The remaining 556 complaints directed to 129 (80.1%) physicians in the analytic sample were used to create two patient complaint outcome variables. The first patient complaint outcome variable included 316 complaints that were not appointment access-related. In order to test the sensitivity of our results to the inclusion of appointment access-related complaints (n = 240), a second outcome variable that included all patient complaints (n = 556) was used.
Malpractice lawsuit data

Physician-level lawsuit information was provided by the malpractice insurer for the years 1996–2005. Lawsuits included open and closed cases in inpatient and outpatient cases. Many sued physicians (>35%) were involved in a lawsuit that was directed at more than one defendant. Of the 217 physicians eligible for the study, we had complete information (e.g. patient survey and physician credential data) for 161 physicians, representing 74.2% of physicians.

Statistical analysis

To examine the differences in patient characteristics between physicians with and without lawsuits, respondent characteristics were compared between three groups: physicians with no lawsuits (n = 103), with one lawsuit (n = 33) and with more than one lawsuit (n = 25). One-way Analysis of Variance (ANOVA) was used to compare means and levels of categorical variables among the three groups.

To account for the variation in physicians’ exposure to patient complaints and malpractice lawsuits, we constructed a continuous measure of risk exposure for each physician by summing the annual patient care full time equivalents the physician worked during the study period (1996–2005 for the lawsuit outcome and 2001–05 for the patient complaints outcome). In the physician organization, one patient care full time equivalent is equal to 1540 patient care hours (average yearly hours worked by a physician providing 35 patient care hours per week minus vacation/paid leave). The associations between physician performance on each ACES measure and patient complaints were examined using negative binomial regression that adjusted for risk exposure, physician specialty and the racial composition and average self-rated health of physician panels. In order to avoid over-adjustment, other physician and panel characteristics were not included. Associations between malpractice lawsuits and (i) physician performance on each ACES measure and (ii) patient complaints were examined using the same modeling strategy. Results were also stratified by specialty (primary care physicians and high-risk specialists). These analyses controlled for residency to board certification time instead of physician specialty. Models that jointly tested statistically significant ACES measures were examined to assess which survey measure explained the variation in the outcome better or whether there was substantial correlation among the survey measures. All continuous measures were standardized to a mean of 0 and a variance of 1 using standard deviations derived from the overall sample so that regression coefficients were comparable. Results are presented as Incidence Rate Ratios (IRR). IRR is the ratio of the incidence rate when input factors are present vs. not (in the case of dichotomous predictors) or a changed by one standard deviation (for continuous predictors). Statistical analyses were conducted using STATA 9.2 (College Station, TX, USA).

Results

Physician cohort

Of the 161 physicians, 36.0% were named as defendants in at least one lawsuit, representing a risk rate of 0.07 lawsuits per annual patient care full time equivalent (Table 1). Compared to primary care physicians, high-risk specialists had a lower patient complaint rate (0.34 vs. 1.36 complaints per patient care full time equivalent; \( P < 0.001 \)), but a higher lawsuit rate (0.09 vs. 0.05 lawsuits per patient care full time equivalent; \( P = 0.02 \)). Table 2 presents the unadjusted differences between physicians without lawsuits, physicians with one lawsuit and physicians with more than one lawsuit. In this unadjusted analysis, physicians differed on some characteristics. Most physician differences in malpractice lawsuit activity, however, were attributable to physician specialty, e.g. residency completion to board certification time is generally longer for specialists. In addition, the fact that physicians with greater time at risk were more likely to be sued highlighted the importance of accounting for risk exposure in analyses.

Relation of ACES measures and malpractice risk

Table 3 summarizes ACES item composition by summary measure and reports the mean summary scores and ranges for physicians in the analytic sample. Irrespective of physician specialty, quality of physician-patient interactions (IRR = 0.61; \( P < 0.001 \)) and care coordination (IRR = 0.65;
were inversely associated with patient complaints (Table 4), e.g. higher survey summary scores were associated with lower complaint rates. For example, a standard deviation (4.4 point) increase in the quality of the physician–patient interaction summary score was associated with approximately 35% lower risk of a patient complaint for primary care physicians and 50% lower risk of a patient complaint for high-risk specialists. For primary care physicians, organizational access was also inversely associated with patient complaints (IRR = 0.61; P < 0.001). For high-risk specialists, the clinical team interactions summary measure was also inversely associated with patient complaints (IRR = 0.65; P = 0.03). Results were fairly consistent when access-related complaints were included in the patient complaint variable definition (data not shown).

Results were fairly consistent when access-related complaints were included in the patient complaint variable definition (data not shown). When statistically significant ACES measures were jointly tested in negative binomial regression models, there was substantial collinearity among the measures. As a result, it was not possible to determine whether one of the survey measures explained the variation in patient complaints better than other measures. In adjusted analyses, none of the ACES measures exhibited a significant association with malpractice lawsuits (data not shown). In addition, patient complaints were not associated with malpractice lawsuits (data not shown).

Discussion

This study investigating the association between validated survey-based measures of patients’ experiences with individual physicians, patient complaints and malpractice lawsuits yields several important findings relevant to individual physician malpractice risk management. First, higher physician–patient
interaction quality and better care coordination were associated with a decreased risk of patient complaints across specialties. This finding is consistent with recent evidence that most patient complaints involve communication problems between physicians and patients [23]. Other studies find that the patient complaints are, in and of themselves, important

Table 3 ACES summary scores, by physician specialty

<table>
<thead>
<tr>
<th>Summary measure</th>
<th>Item composition</th>
<th>Overall (N = 161)</th>
<th>Primary care physicians (N = 92)</th>
<th>High-risk specialists (N = 69)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>10th–90th percentile range</td>
<td>Mean (SD)</td>
<td>10th–90th percentile range</td>
</tr>
<tr>
<td>Quality of physician–patient interaction</td>
<td>Explains things clearly; gives clear instructions; gives enough information; caring and kind; knowledge of medical history; spends enough time</td>
<td>91.5 (4.4) 85.3–96.0</td>
<td>91.7 (3.3) 87.4–95.7</td>
<td>91.1 (5.5) 82.8–96.7</td>
</tr>
<tr>
<td>Health promotion support</td>
<td>Talks about improving health; gives help making changes</td>
<td>80.1 (8.1) 69.2–88.1</td>
<td>83.3 (5.1) 78.2–89.3</td>
<td>75.8 (9.2) 64.3–86.0</td>
</tr>
<tr>
<td>Organizational access</td>
<td>Get urgent care appointment; get routine care appointment; calls you back; informed about office wait</td>
<td>83.3 (4.7) 77.5–89.2</td>
<td>81.5 (3.3) 77.1–85.3</td>
<td>85.7 (5.2) 77.5–91.3</td>
</tr>
<tr>
<td>Care coordination</td>
<td>Follow-ups with test results; informed about care provided by other clinicians</td>
<td>84.0 (5.1) 77.1–89.7</td>
<td>84.2 (3.9) 79.6–88.0</td>
<td>83.7 (6.4) 73.3–90.5</td>
</tr>
<tr>
<td>Clinical team</td>
<td>Explain things clearly; have enough information; coordination of care; knowledge of you; quality of team care</td>
<td>82.3 (4.5) 77.1–88.3</td>
<td>79.9 (3.3) 76.7–83.4</td>
<td>85.6 (3.8) 79.9–89.4</td>
</tr>
<tr>
<td>Office staff</td>
<td>Recent visit: respectful</td>
<td>90.9 (6.8) 80.6–97.6</td>
<td>95.9 (2.0) 93.5–98.1</td>
<td>84.3 (5.1) 77.3–91.0</td>
</tr>
</tbody>
</table>

SD, Standard deviation; ACES summary scores range from 0 to 100 points, with higher scores indicating more favorable performance. Summary scores were computed for each respondent based on the un-weighted average of responses to all items comprising the measure and then averaged for each physician.

Table 4 Relation of ACES summary measures to patient complaints, by physician specialty

<table>
<thead>
<tr>
<th>ACES measure</th>
<th>All physicians</th>
<th>Primary care physicians</th>
<th>High-risk specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 161</td>
<td>N = 92</td>
<td>N = 69</td>
</tr>
<tr>
<td>Quality of physician–patient interaction</td>
<td>0.61 (0.48, 0.77)</td>
<td>&lt;0.001</td>
<td>0.65 (0.49, 0.86)</td>
</tr>
<tr>
<td>Health promotion support</td>
<td>0.86 (0.68, 1.09)</td>
<td>0.23</td>
<td>0.91 (0.69, 1.20)</td>
</tr>
<tr>
<td>Organizational access</td>
<td>0.60 (0.44, 0.81)</td>
<td>&lt;0.001</td>
<td>0.61 (0.47, 0.77)</td>
</tr>
<tr>
<td>Care coordination</td>
<td>0.65 (0.52, 0.82)</td>
<td>&lt;0.001</td>
<td>0.68 (0.50, 0.91)</td>
</tr>
<tr>
<td>Clinical team</td>
<td>0.70 (0.53, 0.94)</td>
<td>0.02</td>
<td>0.86 (0.66, 1.11)</td>
</tr>
<tr>
<td>Office staff</td>
<td>0.93 (0.61, 1.43)</td>
<td>0.76</td>
<td>0.83 (0.62, 1.12)</td>
</tr>
</tbody>
</table>

All results are incidence rate ratios (IRRs) with 95% confidence intervals and represent standardized coefficients using standard deviations derived from the overall sample. For example, a standard deviation (4.4 point) increase in the quality of the physician–patient interaction summary score is associated with approximately 35% lower risk of a patient complaint for primary care physicians and 50% lower risk for high-risk specialists. Results are adjusted for time at risk, the percent of patients in the physician’s panel that are White and the average self-rated health of the physician’s panel. Overall results are also adjusted for physician specialty; Stratified results are adjusted for residency completion to board certification time.
predictors of malpractice risk and adverse events [13, 19, 24]. However, consistent collection of unsolicited patient complaints relies on standardized data collection procedures, staff support and informed patients. Proactive efforts by care providers to capture unsolicited complaints reveal that formal complaints reflect a minority of overall patient complaints [25], so more complete information for managing malpractice risk will require clear grievance processes and a strong safety culture. In our study, two members of the study team reviewed each complaint to determine the clinician(s) involved because clinician data fields were not standardized. Even with an advanced complaints reporting system, we could not ascertain the physician(s) involved for over 10% of all patient complaints. Survey-based measures of patients’ experiences with individual physicians might offer advantages over using patient complaints for managing malpractice risk, including consistent data collection procedures and reliable estimates of physician performance.

Second, we did not find a significant relationship between malpractice lawsuits and ACES measures or patient complaints. Malpractice lawsuits are infrequent events and our results suggest that approximately nine times the number of physicians (1450 or more) would be necessary to have sufficient power for detecting associations with magnitudes comparable to those found between patient complaints and ACES measures. Our results highlight the challenge that physician organizations and malpractice insurers face when attempting to use patient survey data to manage individual physician malpractice risk. A large prospective study that calibrates these validated patient survey measures with malpractice lawsuit risk will be necessary to determine whether or not performance thresholds can be established for managing malpractice risk.

Third, our results suggest that the relationship between patient complaints and malpractice lawsuits may be different for primary care physicians and high-risk specialists. High-risk specialists were much less likely to receive patient complaints compared to primary care physicians, but were more likely to be sued. The damages and costs of future care and treatment are likely to be much greater for adverse events in a high-risk specialty care. This suggests that patients with care concerns about high-risk specialists may be less likely to use formal patient complaints processes and, instead, resort directly to legal action in order to obtain compensation for losses. Our findings are inconsistent with a recent study that found that complaints were greater for surgeons than non-surgeons [26]. Our results might differ because, in the physician organization, patient complaints stemming primarily from inpatient and surgical care experiences may not be captured as consistently as complaints stemming primarily from outpatient care experiences. Nevertheless, our results related to patient complaints highlight the importance of physician–patient interaction quality in high-risk specialty care. In a previous study, communication style was not associated with malpractice risk among surgeons [12]. Surgeons, however, must communicate complicated technical procedures and patients may have difficulty understanding complex technical quality issues, so patient-centered care is valued by patients because it signals caring and concern [17, 18]. Our results suggest that patient survey data might also be valuable for managing malpractice risk in high-risk specialty care.

Finally, a high percentage (>35%) of sued physicians were involved in a lawsuit with at least one other physician and care coordination was associated with patient complaints across specialties. Although plaintiffs may name multiple physicians in effort to secure the highest possible payout because individual physicians are insured separately, our findings suggest that measures of care coordination and integration are potentially important for managing malpractice risk. Recent studies highlight problematic clinician hand-offs, poor communication and inadequate patient follow-up are critical process breakdowns that often lead to adverse events and malpractice activity [27–30]. Moreover, most physicians currently view patient follow-up systems as inadequate [29, 31], which underscores the importance of system improvement.

There are some relevant study limitations. First, we conducted a retrospective analysis and therefore causal inference is limited. However, evidence suggests that individual physician malpractice risk is stable over time [20, 32] and we accounted for differences in the risk exposure of individual physicians. Second, the study relied on malpractice lawsuit data for the years 1996–2005 collected through March 2006. Many lawsuits are filed near the end of the 3 year statute of limitations, so data for 2003–05 do not reflect all lawsuits filed for this time period. This could contribute to the non-significant associations between ACES measures and malpractice lawsuits. Third, our study relied on a modest sample of physicians. However, we used validated measures that provide reliable estimates of important aspects of care received by physicians. Moreover, our results highlight the need for large-scale efforts to assess the potential for calibrating patient survey measures to malpractice lawsuit risk.

In conclusion, we found that the quality of physician–patient interactions and care coordination were negatively associated with patient complaints across primary care physicians and high-risk specialists, but there was no association between any of the patient survey measures and malpractice lawsuits. The identification of adverse events has been viewed as important for improving care processes and managing malpractice risk in diverse care settings internationally [23, 25, 26]. Consistent and high quality collection of unsolicited patient complaints can provide organizations important information for targeting risk management activities. However, patient survey data offer some important advantages over patient complaints information, including standardized data collection procedures and reliable estimates of individual clinician performance. Future studies should evaluate how well-validated patient survey measures calibrate to malpractice risk using a prospective study design and large physician samples from diverse practices. Doing so could offer organizations and malpractice insurers the opportunity to intervene
prospectively with physicians whose profiles reveal them to be at elevated risk.

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