Paid Malpractice Claims for Adverse Events in Inpatient and Outpatient Settings

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Since the landmark Institute of Medicine report To Err Is Human, much attention has been given to patient safety, but most initiatives have centered around inpatient care. For example, in the past 5 years, the number of studies funded by the Agency for Healthcare Research and Quality on inpatient safety has been almost 10-fold that of outpatient studies. Safety initiatives by payers, such as Medicare’s nonpayment for preventable complications in the hospital, have also tended to focus on the inpatient setting.

There are, however, almost 30 times more outpatient visits than hospital discharges annually, and invasive and high-technology diagnostic and therapeutic procedures are increasingly being performed in the outpatient setting. Recently, there have been calls to devote more attention to adverse medical events, medical errors, and patient safety in the outpatient setting.

Although the correlation between serious adverse medical events and malpractice litigation has been questioned, the number and dollar amount of malpractice cases that conclude with an award for the plaintiff may be taken as a crude indicator of the prevalence and seriousness of adverse medical events. To our knowledge, 3 studies have compared settled malpractice claims between the outpatient and inpatient settings; however, these studies focused on specific specialties and claims for which inpatient or outpatient organizations were codefendants and did not present an overall comparison of outpatient and inpatient settled malpractice claims.

We used data from the National Practitioner Data Bank (NPDB), a repository of all malpractice payments paid on behalf of practitioners in the United States, to address 4 research questions: (1) What are the number and magnitude of paid malpractice claims for events occurring in the inpatient and outpatient settings? (2) What are the recent trends in the number and magnitude of paid claims? (3) Are there differences in the types of events and severity of injury in each setting? and (4) What factors are associated with the magnitude of paid claims?

METHODS

Design, Data Source, and Sample

Using data from the NPDB Public Use Data File, we performed a retrospective analysis of malpractice claims paid on behalf of physicians in outpatient and inpatient settings using data from the National Practitioner Data Bank from 2005 through 2009. We evaluated trends in claims paid by setting, characteristics of paid claims, and factors associated with payment amount.

Context

An analysis of paid malpractice claims may provide insight into the prevalence and seriousness of adverse medical events in the outpatient setting.

Objective

To report and compare the number, magnitude, and type of paid malpractice claims for events in inpatient and outpatient settings.

Main Outcome Measures

Number of paid claims, mean and median payment amounts, types of errors, and outcomes of errors.

Results

In 2009, there were 10,739 malpractice claims paid on behalf of physicians. Of these paid claims, 4910 (47.6%; 95% confidence interval [CI], 46.6%-48.5%) were for events in the inpatient setting, 4448 (43.1%; 95% CI, 42.1%-44.0%) were for events in the outpatient setting, and 966 (9.4%; 95% CI, 8.8%-9.9%) involved events in both settings. The proportion of payments for events in the outpatient setting increased by a small but statistically significant amount, from 41.7% (95% CI, 40.9%-42.6%) in 2005 to 43.1% (95% CI, 42.1%-44.0%) in 2009 (P < .001 for trend across years). In the inpatient setting, the most common reason for a paid claim was diagnostic (45.9%; 95% CI, 44.4%-47.4%), whereas in the inpatient setting the most common reason was surgical (34.1%; 95% CI, 32.8%-35.4%). Major injury and death were the 2 most common outcomes in both settings. Mean payment amount for events in the inpatient setting was significantly higher than in the outpatient setting ($362,965; 95% CI, $348,192-$377,738 vs $290,111; 95% CI, $278,289-$301,934; P < .001).

Conclusion

In 2009, the number of paid malpractice claims reported to the National Practitioner Data Bank for events in the outpatient setting was similar to the number in the inpatient setting.

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tive trend analysis and cross-sectional comparison of malpractice payments for adverse events occurring in the outpatient and inpatient settings. The NPDB is a repository of all malpractice claims paid on behalf of licensed health care practitioners.21 Payments must be reported within 30 days of payment under the Healthcare Quality and Improvement Act of 1986.22

The NPDB is publicly available from the Department of Health and Human Services’ Health Resources and Services Administration.21 The NPDB contains information on the practitioner (eg, state, type of license) and the claim (eg, type of allegation, outcome of allegation, payment amount). It also contains information on disciplinary action by hospitals and credentialing authorities.

For our trend analysis, we examined claims paid from 2005 to 2009 because 2005 was the first year that setting was consistently reported in the data set. We excluded entries in which disciplinary action by a credentialing or licensing body occurred but no malpractice claim was paid (71.1% of all entries). We included only payments made on behalf of a physician (MD or DO) (77.4% of all paid malpractice claims), including resident physicians (0.8% of all paid malpractice claims), because other types of practitioners are not required to report paid claims to the NPDB.

For our cross-sectional analysis, we limited our sample to claims paid in 2009 because it was the most recent year with complete data available.

The study protocol was approved by the institutional review board of Weill Cornell Medical College, New York, New York.

Outcomes

The primary outcome variables were number, proportion, and payment amount of malpractice claims for each year (2005-2009). Payment amounts are reported as means with 95% confidence intervals (CIs) and medians with interquartile ranges (IQRs) and are adjusted for inflation (reported in 2009 US dollars) on the basis of the US Department of Labor’s Consumer Price Index.23 We also examine the classification of adverse events (diagnostic, surgical, obstetric, treatment/medication, anesthesia, or other) and the outcome of the event (death, lifelong care, major injury, minor injury, or emotional injury).

Independent Variables

The main independent variable was the type of setting (inpatient, outpatient, or both) assigned by the NPDB to the claim. Other independent variables in our regression model examining the factors associated with payment amounts are patient age, patient sex, physician age, and type of resolution (ie, settlement or judgment).

Statistical Analysis

We used standard methods to calculate the number, percentage, and mean payment amount of malpractice claims by setting24 and the Pearson χ² test to study bivariate associations between setting and patient, physician, and claim characteristics for 2009.

We used multinomial logistic regression to compare trends in the percentage of claims by setting from 2005 to 2009 and linear regression to compare trends in the payment amount by setting during the same 5-year period.

We used similar frequency analyses to calculate the number and percentage of each type of adverse event and outcome of the event by setting and used the Pearson χ² test to study bivariate associations between setting and type of event and outcome of the event for 2009.

Given the skewed distribution of payment amounts, we used the Wilcoxon rank sum test to compare differences in the mean payment amount and a nonparametric comparison of medians to compare differences in the median payment amount by setting for claims paid in 2009.24 We also report the highest single payment and the total payment amount by setting in 2009.

All analyses were performed using Stata statistical software, version 11.0 (Stata Corp, College Station, Texas). All tests were 2-sided with P < .05 considered statistically significant.

RESULTS

In 2009, 10 739 malpractice payments were made on behalf of physicians (TABLE 1). Of these payments, 4910 (47.6%; 95% CI, 46.6%-48.5%) were for events in the inpatient setting, 4448 (43.1%; 95% CI, 42.1%-44.0%) were for events in the outpatient setting, and 966 (9.4%; 95% CI, 8.8%-9.9%) involved events in both settings; ie, 52.9% of events occurred in the outpatient setting, at least in part.

The number of claims decreased significantly from 2005 to 2009 in all 3 settings but the rate of decline was greater for the inpatient setting compared with the outpatient setting (for inpatient, 6515 in 2005 decreasing to 4910 in 2009; for outpatient, 5511 in 2005 decreasing to 4448 in 2009; P < .001) (FIGURE). The proportion of payments for events in the outpatient setting increased a small but significant amount from 41.7% (95% CI, 40.9%-42.6%) in 2005 to 43.1% (95% CI, 42.1%-44.0%) in 2009 (P < .001). Mean payment amount (in 2009 US dollars) did not increase significantly in any of the settings (P > .05 for all settings).

In the inpatient setting, the most common types of adverse events were classified as surgical (34.1%; 95% CI, 32.8%-35.4%), diagnostic (21.1%; 95% CI, 20.0%-22.3%), and treatment (20.3%; 95% CI, 19.2%-21.5%). In the outpatient setting, the most common types of adverse events were classified as diagnostic (45.9%; 95% CI, 44.4%-47.4%), treatment (29.5%; 95% CI, 28.2%-30.9%), and surgical (14.4%; 95% CI, 13.4%-15.4%) (TABLE 2).

Major injury was the most common outcome in both the inpatient (37.8%; 95% CI, 36.5%-39.2%) and outpatient (36.1%; 95% CI, 34.6%-37.5%) settings (Table 2). Death was the next most common outcome in both the inpatient (36.1%; 95% CI, 34.8%-37.5%) and outpatient (30.6%; 95% CI, 29.3%-32.0%) settings.
The mean payment amount for events in the inpatient setting was significantly higher than that in the outpatient setting (for inpatient, $362,965 [95% CI, $348,192-$377,738]; for outpatient, $290,111 [95% CI, $278,289-$301,934]; P < .001), as was the median payment amount (for inpatient, $195,000 [IQR, $77,500-$495,000]; for outpatient, $145,000 [IQR, $47,500-$375,000]; P < .001) (TABLE 3).

COMMENT

In this study comparing malpractice payments for events in the inpatient and outpatient settings, we found that the number of paid malpractice claims in each setting is similar and that the average payment amount, although higher in the inpatient setting, was approximately $300,000 in the outpatient setting. Almost $1.3 billion in malpractice claims was paid for outpatient events in 2009; if claims for adverse events that occurred in both settings are included, this amount increases to more than $1.5 billion. Furthermore, the outcomes of outpatient events were not trivial—major injury or death accounted for almost two-thirds of paid claims for events in the outpatient setting. Diagnosis-related events were the most common reason for paid claims in the outpatient setting, in contrast to inpatient care, in which surgery-related events were the most common reason and were nearly twice as common as events classified as diagnosis-related.

Our findings provide empirical support for suggestions that patient safety initiatives should focus on the outpatient setting, not just on inpatient care.1-4,8-12,25 The findings also support suggestions that more attention should be paid to adverse events related to diagnostic errors.11,26-31

Table 1. Patient, Physician, and Claim Characteristics by Setting, 2009a

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Inpatient (n = 4910)</th>
<th>Outpatient (n = 4448)</th>
<th>Both Settings (n = 966)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All claims</td>
<td>47.6 (46.6-48.5)</td>
<td>43.1 (42.1-44.0)</td>
<td>9.4 (8.8-9.9)</td>
</tr>
<tr>
<td>Patient age, yb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetus</td>
<td>14.0 (13.0-15.0)</td>
<td>2.6 (2.1-3.0)</td>
<td>6.6 (5.0-8.2)</td>
</tr>
<tr>
<td>&lt;1-19</td>
<td>5.2 (4.5-5.8)</td>
<td>8.4 (7.6-9.2)</td>
<td>6.2 (4.6-7.7)</td>
</tr>
<tr>
<td>20-39</td>
<td>21.8 (20.6-22.9)</td>
<td>23.9 (22.7-25.2)</td>
<td>26.4 (23.6-29.2)</td>
</tr>
<tr>
<td>40-59</td>
<td>33.1 (31.7-34.4)</td>
<td>41.8 (40.3-43.3)</td>
<td>39.8 (36.7-42.9)</td>
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<tr>
<td>60-79</td>
<td>22.2 (21.0-23.4)</td>
<td>20.9 (19.7-22.2)</td>
<td>19.0 (16.5-21.5)</td>
</tr>
<tr>
<td>≥80</td>
<td>3.8 (3.2-4.3)</td>
<td>2.4 (1.9-2.8)</td>
<td>2.0 (1.1-2.9)</td>
</tr>
<tr>
<td>Patient sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44.6 (43.2-46.0)</td>
<td>45.4 (43.9-46.9)</td>
<td>42.7 (39.5-45.8)</td>
</tr>
<tr>
<td>Female</td>
<td>55.2 (53.8-56.6)</td>
<td>54.5 (53.1-56.0)</td>
<td>57.1 (54.0-60.3)</td>
</tr>
<tr>
<td>Physician age, yc</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>0.8 (0.5-1.0)</td>
<td>0.6 (0.3-0.8)</td>
<td>0.4 (0.0-0.8)</td>
</tr>
<tr>
<td>30-49</td>
<td>56.5 (55.1-57.8)</td>
<td>49.3 (47.8-50.8)</td>
<td>52.7 (49.5-55.8)</td>
</tr>
<tr>
<td>50-69</td>
<td>40.6 (39.3-42.0)</td>
<td>46.4 (45.0-47.9)</td>
<td>43.8 (40.7-46.9)</td>
</tr>
<tr>
<td>≥70</td>
<td>2.1 (1.7-2.5)</td>
<td>3.7 (3.2-4.3)</td>
<td>3.1 (2.0-4.2)</td>
</tr>
<tr>
<td>Type of resolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settlement</td>
<td>3.2 (2.7-3.7)</td>
<td>2.9 (2.4-3.4)</td>
<td>3.5 (2.3-4.6)</td>
</tr>
<tr>
<td>Judgment</td>
<td>96.8 (96.3-97.3)</td>
<td>97.1 (96.6-97.6)</td>
<td>96.5 (95.4-97.7)</td>
</tr>
</tbody>
</table>

a Three comparisons were tested: inpatient vs outpatient, inpatient vs both, and outpatient vs both.

b P < .001 for all comparisons.

c P < .001 for inpatient vs outpatient; P = .03 for inpatient vs both.

Figure. Trends in the Number, Percentage, and Mean Dollar Amount of Malpractice Claims by Setting, 2005-2009

Error bars indicate 95% confidence intervals. Some error bars for narrow confidence intervals are included within the size of the data markers.

a Number of claims decreased significantly in all settings (P < .001). Rate of decrease was lower in the outpatient setting compared with the inpatient setting (P < .001).

b Percentage of outpatient claims increased significantly from 2005 to 2009 (P < .001).

c No significant change in payment amount from 2005 to 2009 in all 3 settings (P > .05).
ing, where follow-up is more difficult than in the hospital and where patients often present with symptoms and signs that may be subtle or not adequately noted amid the many short-term, long-term, and preventive care activities often undertaken in a single outpatient visit. The importance of adverse events related to diagnosis may be particularly relevant as pay-for-performance and public reporting programs increasingly demand attention from clinicians. These programs do not reward diagnostic acuity or punish diagnostic error and may divert clinicians’ time and attention from the critical area of diagnosis. Diagnostic error has not been the focus of patient safety efforts in either the outpatient or the inpatient settings, although there have been recent calls for attention to this area.27,33

Other shifts in care, such as surgical procedures being increasingly performed in the outpatient setting, may also increase the risk of adverse events in the outpatient setting, particularly if these procedures are performed in physician offices or small ambulatory surgical centers that may not have the same safety controls as hospitals.

Improving patient safety, will likely be even more difficult in the outpatient setting than in the inpatient setting. There are many more sites of outpatient care than inpatient care, and many outpatient sites may be too small to have well-trained staff who devote significant attention to improving patient safety. Because the amount per claim paid is higher in the inpatient setting and inpatient patient safety efforts may be easier to undertake, it is understandable that efforts to date have focused on inpatient care. However, the high volume of outpatient malpractice claims and the serious nature of many of these claims suggest that the relative neglect of outpatient safety should not persist.

Our study has several limitations. The NPDB potentially understates the number of malpractice payments because settlements paid on behalf of corporate entities instead of physicians are exempt from reporting in the NPDB. Chandra et al compared data from the RAND Jury Verdict Database to the NPDB and found that the NPDB did underestimate the number of malpractice claims by about 20%. However, it is not clear whether this underestimate would change our results in terms of the relative proportions of claims or the magnitude of claims in the inpatient vs outpatient settings, because corporate entities (eg, hospitals) employ physicians who work in both inpatient and outpatient settings. No study has quantified the corporate shield as it relates to setting, and reporting of claims paid on behalf of physicians are legally mandated on a national level.

Second, the volume of paid malpractice claims is not equivalent to the volume of adverse events. As a number of studies have shown, malpractice suits are filed for a minority of medical errors. It is not known whether the ratio of paid claims to adverse events differs between the inpatient and outpatient settings.

Third, we did not calculate the per-encounter rate of malpractice payments. It would be difficult to compare inpatient and outpatient per-encounter rates because an inpatient visit includes a large but unknown number of encounters. Nevertheless, although the number of outpatient mal-

| Table 2. Types and Outcomes of Events by Setting, 2009a |
|-----------------|-----------------|-----------------|-----------------|
| **Event type**  | **Percentage (95% Confidence Interval)** | **Outcome**     | **Percentage (95% Confidence Interval)** |
| Surgical        | 34.1 (32.8-35.4) | Major injury    | 37.8 (36.5-39.2) |
| Diagnostic      | 21.1 (20.0-22.3) | Minor injury    | 17.6 (16.6-18.7) |
| Treatment/medication | 20.3 (19.2-21.5) | Emotional injury only | 1.0 (0.7-1.3) |
| Obstetric       | 12.5 (11.6-13.5) | Death           | 36.1 (34.8-37.5) |
| Other           | 7.6 (6.9-8.4)   | Quadruplegia/brain damage/lifelong care | 7.4 (6.6-8.1) |
| Anesthesia      | 4.2 (3.6-4.8)   |                 |                  |

Table 3. Malpractice Payment Characteristics by Setting, 2009a

<table>
<thead>
<tr>
<th>Payment amount</th>
<th>Inpatient (n=4910)</th>
<th>Outpatient (n=4448)</th>
<th>Both Settings (n=966)</th>
<th>P Value for Inpatient vs Outpatient</th>
<th>P Value for Inpatient vs Both</th>
<th>P Value for Outpatient vs Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (95% CI)</td>
<td>362,965 (348,192-377,738)</td>
<td>290,111 (278,289-301,934)</td>
<td>&lt;.001</td>
<td>299,700 (272,136-327,265)</td>
<td>.001</td>
<td>.003</td>
</tr>
<tr>
<td>Median (IQR)</td>
<td>195,000 (77,500-495,000)</td>
<td>145,000 (47,500-375,000)</td>
<td>&lt;.001</td>
<td>185,000 (72,500-395,000)</td>
<td>.002</td>
<td>.04</td>
</tr>
<tr>
<td>Highest payment</td>
<td>9,450,000</td>
<td>9,450,000</td>
<td>7,450,000</td>
<td>1,780</td>
<td>1,290</td>
<td>200</td>
</tr>
</tbody>
</table>

Abbreviations: CI, confidence interval; IQR, interquartile range.

aThree comparisons were tested: inpatient vs outpatient, inpatient vs both, and outpatient vs both.
bP<.001 for all comparisons.

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practice payments is similar to inpatient, there are many more outpatient encounters annually. For instance, in 2007, according to the National Center for Health Statistics, there were an estimated 1.2 billion outpatient visits and an estimated 37 million hospital admissions. Consequently, the probability of an error per encounter is higher in the inpatient setting. However, paid claims may underestimate the magnitude of adverse events in the outpatient setting more than in the inpatient setting because in the outpatient setting, adverse events may not emerge for long periods, at which point their relationship to a health care encounter may not be apparent to patients. Other limitations include lack of data on physician specialty and number of physicians per claim.

Given the longitudinal and often fragmented nature of outpatient care, future research should seek to develop a better understanding of the epidemiology of serious adverse medical events in the outpatient setting, including events that initially may not be obvious to patients; to better understand ways to reduce the frequency and severity of diagnostic errors; and to conduct root cause analysis of detected adverse events to help determine where, when, and how failures occur. These goals may be achievable through analysis of administrative data, malpractice claims, and patient records, particularly as the prevalence of electronic health records increases. 

This information will help inform the design of programs aimed at increasing the safety of outpatient care.

REFERENCES


Author Contributions: Dr Bishop had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Bishop, Casalino.

Acquisition of data: Bishop.

Analysis and interpretation of data: Bishop, Ryan, Casalino.

Drafting of the manuscript: Bishop, Casalino.

Critical revision of the manuscript for important intellectual content: Bishop, Ryan, Casalino.

Statistical analysis: Bishop, Ryan.

Administrative, technical, or material support: Bishop.

Study supervision: Casalino.

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