Error Reporting and Disclosure Systems
Views From Hospital Leaders

Joel S. Weissman, PhD
Catherine L. Annas, JD
Arnold M. Epstein, MD, MA
Eric C. Schneider, MD, MSc
Brian Clarridge, PhD
Leslie Kirby, MPH
Constantine Gatsonis, PhD
Sandra Feibelmann, MPH
Nancy Ridley, MS

SINCE THE EARLY 1990S, MUCH HAS been learned about medical errors in health care settings and of their impact on morbidity, mortality, and costs.1-4 The 1999 Institute of Medicine report entitled To Err Is Human documented the seriousness of the problem of medical errors and identified the major challenges in addressing this problem.5 Although a number of approaches to reduce errors were proposed, a key strategy involved the use of reporting systems to identify and learn from errors.5

The Institute of Medicine recommended establishing both mandatory and voluntary reporting systems for health care institutions such as hospitals and nursing homes.5 The purpose of reporting is to collect data on a broad range of events to detect systemic problems that can be altered to reduce the risk of patient harm. Most mandatory systems focus on serious injury to patients, but some also collect reports on incidents such as drug diversions, patient elopement, or fires in the operating room, which may not result in injury. In addressing the public’s “right to know” about facilities’ performance, mandatory systems tend to use state licensing authority to require that events are reported and hold facilities accountable by ensuring that incidents are investigated and that corrective actions are taken.8 Voluntary systems are operated by governmental as well as nongovernmental organizations and tend to emphasize quality improvement over public accountability. Other purposes of mandatory and voluntary reporting systems, such as guiding consumers to select health care providers, are addressed in other reports.9

Context The Institute of Medicine has recommended establishing mandatory error reporting systems for hospitals and other health settings.

Objective To examine the opinions and experiences of hospital leaders with state reporting systems.

Design and Setting Survey of chief executive and chief operating officers (CEOs/COOs) from randomly selected hospitals in 2 states with mandatory reporting and public disclosure, 2 states with mandatory reporting without public disclosure, and 2 states without mandatory systems in 2002-2003.

Main Outcome Measures Perceptions of the effects of mandatory systems on error reporting, likelihood of lawsuits, and overall patient safety; attitudes regarding release of incident reports to the public; and likelihood of reporting incidents to the state or to the affected patient based on hypothetical clinical vignettes that varied the type and severity of patient injury.

Results Responses were received from 203 of 320 hospitals (response rate = 63%). Most CEOs/COOs thought that a mandatory, nonconfidential system would discourage reporting of patient safety incidents to their hospital’s own internal reporting system (69%) and encourage lawsuits (79%) while having no effect or a negative effect on patient safety (73%). More than 80% felt that the names of both the hospital and the involved professionals should be kept confidential, although respondents from states with mandatory public disclosure systems were more willing than respondents from the other states to release the hospital name (22% vs 4%-6%, P = .005). Based on the vignettes, more than 90% of hospital leaders said their hospital would report incidents involving serious injury to the state, but far fewer would report moderate or minor injuries, even when the incident was of sufficient consequence that they would tell the affected patient or family.

Conclusions Most hospital leaders expressed substantial concerns about the impact of mandatory, nonconfidential reporting systems on hospital internal reporting, lawsuits, and overall patient safety. While hospital leaders generally favor disclosure of patient safety incidents to involved patients, fewer would disclose incidents involving moderate or minor injury to state reporting systems.
select safer facilities or providing a basis for health insurers and employers to offer financial incentives to facilities with better safety records, are as yet untested. As of October 2003, 21 states had mandatory event reporting systems for hospitals, although policies varied. Some states mandate reports only for incidents causing serious harm, while others include “near misses,” defined as errors that are caught before they reach the patient, or if they reach the patient, do not result in injury or harm. Some states release only aggregate data, whereas others release redacted investigation reports. Eleven of the 21 states protect the confidentiality of the reports, while 10 states allow for public disclosure including the name of the facility. Of the 10 states, 7 release incident-specific data. Of these, some states keep confidential the names of the practitioners involved, while others make this information available. No state releases the names of patients.

Critics of mandatory systems worry they have a chilling effect on reporting. As a result, underreporting of events is suspected. Some observers note that reporting systems have the potential to frighten the public unnecessarily if the data are not valid or complete. In states that do not keep reports confidential, there are also concerns about how to manage relations with the press. It can be politically embarrassing if a family learns for the first time of a serious reportable event involving a family member when it appears in the media.

The goal of this study was to elicit the views of hospital executives with regard to mandatory state reporting systems and closely related issues of patient safety. We surveyed chief executive officers (CEOs) and chief operating officers (COOs)—purportedly those officials most accountable to the public and on the front lines of hospital reporting—in more than 200 hospitals in 6 states.

**STUDY METHODS**

**Sample**

We selected a sample of acute care, nonfederal hospitals in Massachusetts, Colorado, Pennsylvania, Florida, Georgia, and Texas and interviewed CEOs and COOs. Where possible, we also sought information from chief medical officers (CMOs). However, because the role of CMOs varies from institution to institution, our primary analyses focus on the CEOs/COOs. The 6 states were selected because they represented a spectrum of reporting systems, had wide geographic distribution, and the hospital association for each state agreed to provide a letter of support.

At the time of the study (2002-2003), Massachusetts had a mandatory, nonconfidential reporting system. Facilities were required to submit reports to the Department of Public Health for incidents involving “serious physical injury (defined as ‘injury that is life-threatening, results in death, or requires a patient to undergo significant additional diagnostic or treatment measures’) resulting from accident or unknown cause” and “other serious incidents that seriously affect the health and safety of patients.” About 640 reports were filed in 2001. Information collected through department of public health investigations are provided on request (with the patient name redacted).

Colorado also had a mandatory, nonconfidential reporting system. Reports were submitted to the Colorado Department of Public Health and Environment. In Colorado, facilities reported specific “serious injuries” (eg, brain or spinal cord injuries, life-threatening complications of anesthesia or life-threatening transfusion errors or reactions, and certain burns). Colorado would release a summary report of its investigation including the name of the facility, but protected the identity of the health care professional involved with the reported event.

Pennsylvania and Florida both had mandatory, confidential reporting systems. In Pennsylvania, hospitals were required to report to the Department of Health “a situation or the occurrence of an event at the facility which could seriously compromise quality assurance or patient safety.” Pennsylvania law protected the confidentiality of information contained in facility reports unless a court ordered the disclosure. In Florida, hospitals reported adverse incidents to the Agency for Health Care Administration. “Adverse incident” is defined in the statute as “an event over which [a] health care professional could exercise control and which is associated in whole or in part with medical intervention, rather than the condition from which such intervention occurred,” and which is associated with a list of injuries or actions.

**Questionnaire Design**

We developed a draft questionnaire through focused interviews with experts in the field of patient safety and with former hospital leaders, including CEOs, COOs, CMOs, risk managers, and patient safety officers. The instrument was cognitively tested in nonstudy states to improve the reliability of individual items, and a modified version was pretested during fall 2002.

The final questionnaire elicited opinions about mandatory patient safety reporting systems with public disclosure, defined as a policy whereby the responsible state agency could release some details of the incident, including the name of the hospital employees involved in the incident, to anyone making a request. Our first area of inquiry addressed whether mandatory, nonconfidential systems encouraged or discouraged reporting of patient safety incidents within hospitals. We also sought opinions on the effects these systems had on the likelihood of lawsuits being filed and on actual patient safety across the state. Next, we asked what would most
Box. Three Vignettes of Hypothetical Errors Involving Harm to Patients That Might Occur During a Hospital Stay

Vignette 1

1. A hospitalized patient is discovered to have a urinary tract infection. A physician orders Bactrim [trimethoprim/sulfamethoxazole] to treat the infection, not realizing that the patient has a previously documented severe allergy to this drug. Suppose an hour after taking the Bactrim, the patient complains of difficulty breathing and has an itchy rash. With treatment the symptoms resolve after 2 hours. The patient is monitored carefully, but has no further symptoms.

2. Suppose the outcome were somewhat less severe. Suppose an hour after receiving the Bactrim the patient complains of difficulty breathing and has an itchy rash. With treatment the symptoms resolve after 2 hours. The patient is monitored carefully, but has no further symptoms.

3. Now suppose the same situation occurred and the outcome is even less dramatic. The day after the patient is given the Bactrim, the documented allergy is noted and the Bactrim is stopped. The patient has no symptoms.

Vignette 2

1. A patient has a vascular graft placed in the left leg. The surgeon orders hourly postoperative checks of the pulse of the left foot and asks to be called immediately if the pulse is undetectable. The nurses on duty do not check the pulse for 4 hours. When a nurse does check, the pulse is undetectable and the nurse calls the surgeon. Suppose the surgeon orders a clot-dissolving medication, but it has no effect.

2. Now, let us suppose that the situation is less severe. Suppose the surgeon orders a clot-dissolving medication, but it has no effect. The patient is taken back to the operating room and undergoes revision of the vascular graft. The patient recovers and is discharged 3 days later than expected.

3. Suppose the patient is even less affected. The surgeon orders a clot-dissolving medication and the pulse returns. The patient does well and is discharged 3 days later.

Vignette 3

1. A patient comes to the emergency department with a bleeding stomach ulcer and a low blood cell count. She undergoes endoscopy and the bleeding appears to have stopped. Before the endoscopy, the patient's heart stops. Resuscitation is unsuccessful and the patient dies.

2. Suppose she ordered the same repeat endoscopy and blood transfusion, but the outcome was less severe. Before the endoscopy, the patient's heart stops. There is a lengthy resuscitation, and the patient's bleeding is stopped. The patient remains in a coma in intensive care for 2 weeks, but ultimately recovers.

3. Suppose she ordered the same repeat endoscopy and blood transfusion, but the outcome was even less severe. The bleeding is stopped and the patient recovers uneventfully.

reduce hospital errors: a system that releases the names of hospitals or practitioners involved, or one that keeps names confidential.

A corollary issue to whether the state should release notice of patient safety incidents to the public is whether, and under what circumstances, the state should disclose details to the affected patients or their families. At the time of the survey, hospitals were not required to tell affected patients that a report had been filed, and states did not ask hospitals whether they had provided the patient or family with information about the incident. Therefore, we asked under what circumstances, if any, disclosure to patients is appropriate, such as when information is about to be released to the press, or when the patient or family already know about the incident and want to learn more details from the state's investigation.

For respondents in states with mandatory systems, we asked about the clarity of the reporting criteria and how much discretion they had in deciding what needs to be reported. Next, we presented each respondent (from all 6 states) with 3 vignettes of hypothetical errors involving serious harm to patients that might occur during a hospital stay (Box). For example, one vignette was about a hospitalized patient with a urinary tract infection who receives an antibiotic to which he has a documented allergy. The patient has a severe reaction and lapses into a coma. We asked respondents, “In your hospital, how often would this kind of incident be reported to the 'agency’”? and “How often would someone from your hospital acknowledge to patients or their family members that an incident of this kind occurred?” (always, usually, sometimes, rarely, or never).

We then varied the severity of the resulting injury to the patient, repeating each of the vignettes a second time with only moderate or minor harm occurring (eg, the patient with the urinary tract in-
fection had difficulty breathing and de-
veloped a pruritic rash, but symptoms
resolved after 2 hours), and a third time
with very minor or no harm (eg, no
symptoms occurring.)

To gauge the prominence of the is-

sue, we asked about the frequency with
which the topic of patient safety was on
the agenda at board meetings, and the
priorities placed on determining root
causes of errors, identifying procedures
to improve patient safety, protecting
reporters from negative conse-
dquences, and finding out who was at
fault. To understand the progress made
by hospitals in implementing the July
2001 Joint Commission on the Accredi-
tation of Healthcare Organizations stan-
dard (RI.1.2.2),16 we inquired about
written policies on disclosure of “un-
anticipated outcomes and other pa-
tient safety incidents to patients and
their families.” For all analyses, hospi-
tal characteristics obtained from American Hospital Asso-
ociation.15

Table 1. Response Rates and Sample Characteristics by State, Ownership, Teaching Status, and Bed Size of the Hospital (CEO/COO Respondents)*

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>Response Rates, Unweighted %</th>
<th>% of Sample, Unweighted</th>
<th>P Value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>203</td>
<td>63</td>
<td>100</td>
<td>0.007</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>59</td>
<td>80</td>
<td>29.1</td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>34</td>
<td>70</td>
<td>16.7</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>27</td>
<td>54</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>26</td>
<td>52</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>30</td>
<td>64</td>
<td>14.8</td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td>27</td>
<td>54</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonprofit</td>
<td>78</td>
<td>62</td>
<td>38.8</td>
<td>0.02</td>
</tr>
<tr>
<td>For-profit</td>
<td>58</td>
<td>56</td>
<td>28.9</td>
<td></td>
</tr>
<tr>
<td>Church-owned</td>
<td>12</td>
<td>54</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>53</td>
<td>79</td>
<td>26.4</td>
<td></td>
</tr>
<tr>
<td>Teaching status</td>
<td></td>
<td></td>
<td></td>
<td>0.99</td>
</tr>
<tr>
<td>Major</td>
<td>21</td>
<td>66</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Minor</td>
<td>35</td>
<td>64</td>
<td>17.5</td>
<td></td>
</tr>
<tr>
<td>Nonteaching</td>
<td>144</td>
<td>63</td>
<td>72.0</td>
<td></td>
</tr>
<tr>
<td>Bed size</td>
<td></td>
<td></td>
<td></td>
<td>0.048</td>
</tr>
<tr>
<td>0-100</td>
<td>90</td>
<td>72</td>
<td>44.6</td>
<td></td>
</tr>
<tr>
<td>101-200</td>
<td>46</td>
<td>55</td>
<td>22.8</td>
<td></td>
</tr>
<tr>
<td>201-300</td>
<td>26</td>
<td>56</td>
<td>12.9</td>
<td></td>
</tr>
<tr>
<td>≥301</td>
<td>40</td>
<td>61</td>
<td>19.8</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: CEO, chief executive officer; COO, chief operating officer.

*Numbers may not add to 203 due to missing data. Hospital characteristics obtained from American Hospital Association.15
†Respondents vs nonrespondents.

To understand the progress made
by hospitals in implementing the July
2001 Joint Commission on the Accredi-
tication of Healthcare Organizations stan-
dard (RI.1.2.2),16 we inquired about
written policies on disclosure of “un-
anticipated outcomes and other pa-
tient safety incidents to patients and
their families.” For all analyses, hospi-
tals were categorized by teaching sta-
tus (major, minor, nonteaching), own-
nership (nonprofit, for-profit, church-
owned, government), and bed size.

Survey Administration
The survey was administered by the Cen-
ter for Survey Research at the Univer-
sity of Massachusetts, Boston, between
November 2002 and March 2003. We at-
tempered to interview both the CEO and
the COO. If both were interviewed, we
used the interview from the CEO (83% of
respondents were CEOs, 17% were
COOs). We repeated the analyses using
the responses by the CMOs and pro-
vide those results separately. This study
was approved by the institutional re-
view board at Massachusetts General
Hospital. Names of participants and the
hospitals were known only to Center for
Survey Research and Massachusetts Gen-
eral Hospital study personnel.

Analysis
Since we hypothesized that attitudes and
behaviors would vary by type of state re-
porting system, we grouped the states
into 3 categories: mandatory, nonconfi-
dential; mandatory, confidential; and no
mandatory systems. We used the 2 sta-
tistic to test for significant differences
by type of state and by hospital character-
istics, but the latter produced few sig-
nificant results, so we do not present
these tabulations nor did we estimate
multivariate models controlling for these
variables. All responses were weighted
by the inverse of the probability of sam-
ping multiplied by the inverse of the re-
sponse rate, within state category. P val-
ues and confidence intervals were
estimated using SUDAAN to account for
complex survey designs.17 The level of signif-
cance was set at P<.05.

RESULTS
Response rates and characteristics of re-
spondents’ hospitals are presented in
TABLE 1. The response rate for CEOs/
COOs was 63%. There were no differ-
ences by teaching status, but govern-
ment-owned and small hospitals were
more likely to respond than religiously
affiliated hospitals and large hospitals.
The response rate for CMOs was 41%.

Design of State Mandatory
Reporting Systems
More than two thirds of hospital lead-
ers thought that a mandatory, noncon-
didential reporting system run by the
state would discourage reporting of
patient safety incidents to their hospi-
tals own internal reporting system
(TABLE 2). Only 8% thought it would en-
courage internal reporting, and there
were no differences by type of state event
reporting system. Overall, about three
quarters of hospital leaders (79%) thought
that such a system encouraged
lawsuits against hospitals, although this
number was lower among respondents
from the states having a mandatory, non-
confidential system (P=.01). Most re-
spondents (73%) thought that a man-
datory system would have either no
effect or a negative effect on actual pa-
tient safety within their own state.

Hospital leaders in our sample were
strongly supportive of policies that kept
confidential the names of the hospi-

©2005 American Medical Association. All rights reserved.
tals and the practitioners involved (Figure). Fewer than 3%, on average, thought that releasing information on both parties was advisable. However, respondents from states with mandatory, nonconfidential systems were far more likely to approve releasing the name of the hospital (22%) than those from other states (4%-6%) (P = .005).

Respondents from the 4 states with mandatory systems (n=146) provided their opinions about circumstances under which state reporting systems should inform the patient or family about a reported event. When an incident is reported, half (51%) thought that the state should not release information to the patient under any circumstances. About 16% thought the state should always inform the patient, with the remainder (33%) saying that the patient should be informed only under certain circumstances. Of the latter group, 91% thought that the agency should tell the patient on imminent release to the press, 60% thought the patient should be informed of the details of the case on request from the patient or family, and 20% thought that the patient should be told when there was harm involved. (Depending on the state system, not all reported events result in harm to the patient, eg, fire in the operating room, equipment failure, or patient elopement.)

Variation in Reporting Practices

Nearly a quarter (23%) of respondents from the mandatory reporting states thought that reporting criteria were not very clear or not at all clear (results not shown in Tables). When asked about the discretion their hospital had in reporting incidents, 3% reported they had “a lot,” 46% reported “a moderate amount,” and 46% reported “a little.” Only 6% thought they had no discretion.

In response to the error vignettes, 89% to 98% of respondents from mandatory reporting states would always or usually report a serious incident to the agency, depending on the vignette, with no significant difference by state (P > .05 for all vignettes) (Table 3). However, when the injury was less severe, respondents from mandatory, nonconfidential states were less likely than others to say they would report cases to the agency. For example, when the injury was moderate, 22% to 69% of respondents from nonconfidential states would always or usually report the incident (depending on the vignette), compared with 43% to 89% of respondents from confidential states (all P ≤ .01). For the least severe scenarios, 3% to 7% from the nonconfidential states would still report the incident, compared with 20% to 34% of respondents from confidential states (all P ≤ .01).

A different pattern occurred for responses to questions on disclosing incidents to affected patients or their families. Between 84% and 100% of respondents (depending on vignette and state) said that someone from their hospital would always or usually tell the patient about a serious event causing harm, 75% to 96% would tell the patient about a moderate injury, and 38% to 57% would tell the patient about an incident involving minor injury or no harm. Notably, with the exception of a mod-

### Table 2. Hospital Leaders’ Opinions About the Effects of Mandatory, Nonconfidential State Reporting Systems on Patient Safety*

<table>
<thead>
<tr>
<th>Type of State Event Reporting System, %</th>
<th>All, % (n = 203)</th>
<th>Mandatory, Nonconfidential (n = 53)</th>
<th>Mandatory, Confidential (n = 93)</th>
<th>Nonmandatory (n = 57)</th>
<th>P Value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on internal hospital error reporting</td>
<td>Positive effect</td>
<td>28 29 35 22</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No effect</td>
<td>41 41 48 35</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative effect</td>
<td>32 30 17 43</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*State safety event reporting systems at the time of the survey were as follows: Massachusetts and Colorado had mandatory, nonconfidential reporting systems; Florida and Pennsylvania had mandatory, confidential reporting systems; and Georgia and Texas did not have mandatory reporting systems. Percentages are weighted to reflect sampling proportions. Total numbers for individual variables vary slightly due to missing data.†P values derived from χ² tests from 3 × 3 tables.

### Figure. In a Mandatory Reporting System, What Information Should Be Made Public?

©2005 American Medical Association. All rights reserved.
est difference in the responses to the most serious injury level for vignette 3, these results did not differ significantly by type of state.

**Hospital Patient Safety Policies and Practices**

Table 4 reports on hospital policies and practices concerning patient safety. Because none of these practices varied significantly by type of reporting system or hospital characteristics, we report only overall percentages. A large majority of respondents (82%) reported that patient safety was always or usually on the agenda at their board meetings. A majority of respondents gave "very high" priority in their hospitals to finding out the root causes of patient harm (83%), identifying procedures to improve patient safety (62%), and protecting reporters from negative consequences (60%). Far fewer (37%) put a very high priority on finding out who was at fault for errors. Only 85% had a written policy that recommended disclosure of unanticipated outcomes to patients. Of those, 87% recommended disclosure for minor injuries due to errors, and 31% for errors that did not harm patients.

**Responses by CMOs**

When we repeated the analyses using responses by CMOs, our conclusions regarding the major hypotheses remained the same. Similar to CEOs/COOs, CMOs expressed major reservations about mandatory, nonconfidential systems and were wary about releasing names of individual practitioners involved in the incidents. Chief medical officers were less likely than CEOs/COOs to say that they would report moderate or minor injuries (based on the vignettes) to the state or to disclose to the patient. However, the patterns of responses by type of state system were similar to the CEOs/COOs, although fewer results were statistically significant. Chief medical officers also tended to be a bit less optimistic about patient safety priorities in their hospital, but were still quite positive overall.

**COMMENT**

In the absence of federal legislation requiring hospitals to report safety events, states find themselves increasingly involved in efforts to monitor hospital safety practices. Despite potentially worthwhile aspects of mandatory reporting, our results suggest that most hospital leaders had serious reservations about these systems. On balance, hospital leaders believed that mandatory, nonconfidential state reporting systems as designed discouraged internal reporting of medical errors and led to a greater frequency of lawsuits while failing to provide substantial benefit to patient safety. One of the more contentious issues in a mandatory reporting system is whether to keep the data confidential or to release identifiable information on individual events to the public. Hospital leaders resoundingly favored confidentiality. However, our data also suggest that, to a point, familiarity breeds acceptance—respondents from mandatory reporting states with public disclosure were less worried about lawsuits and more willing to have hospital names made public. As time passes and hospital leaders reflect on their experiences, acceptance of nonconfidential systems may increase.

All 4 states with mandatory reporting systems created regulatory standards defining reportable events, yet many hospital leaders perceived a lack of clarity. Furthermore, the results of our vignettes demonstrate considerable state-to-state variation in what may be reported in practice, at least in cases for which the injury was not severe. Notably, CMOs were less optimistic than CEOs/COOs that reports would be filed or that patients would be informed, although the patterns of responses by state reporting system were similar. While it is tempting to attribute state variations to differences in confidentiality protections, it is also possible that respondents were influenced by differences in the language of the reporting standards. State systems should balance the

---

**Table 3.** Error Vignettes: Percentage of Hospital Leaders Saying They Would “Always” or “Usually” Report an Incident to Their Mandatory State Reporting System or to the Patient or Patient’s Family, by Severity of the Injury

<table>
<thead>
<tr>
<th>Vignette 1: UTI, failure to note allergy</th>
<th>Vignette 2: vascular graft, failure to monitor</th>
<th>Vignette 3: endoscopy, failure to report abnormal result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Serious Injury, %</strong></td>
<td><strong>Moderate or Minor Injury, %</strong></td>
<td><strong>Least Severe or No Injury, %</strong></td>
</tr>
<tr>
<td><strong>Mandatory, Nonconfidential</strong></td>
<td><strong>Confidential</strong></td>
<td><strong>Confidential</strong></td>
</tr>
<tr>
<td>(n = 93)</td>
<td>(n = 53)</td>
<td>(n = 57)</td>
</tr>
<tr>
<td>To the state</td>
<td>P Value</td>
<td>P Value</td>
</tr>
<tr>
<td>95</td>
<td>.19</td>
<td>.001</td>
</tr>
<tr>
<td>98</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>NA</td>
<td>.43</td>
<td>.003</td>
</tr>
<tr>
<td>.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To the patient</td>
<td>P Value</td>
<td>P Value</td>
</tr>
<tr>
<td>100</td>
<td>.10</td>
<td>.001</td>
</tr>
<tr>
<td>100</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>96</td>
<td>.66</td>
<td>.003</td>
</tr>
<tr>
<td>.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To the patient</td>
<td>P Value</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td>.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To the patient</td>
<td>P Value</td>
<td></td>
</tr>
<tr>
<td>94</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>.001</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: UTI, urinary tract infection; NA, not applicable (this question was not asked of respondents from Georgia and Texas).

*Percentages are weighted to reflect sampling proportions. Total numbers for individual variables vary slightly due to missing data.
desire to customize their systems against the value of standardization, especially since nonstandardized language precludes making comparisons across states or regions or over time.

Medical ethicists distinguish between the public’s right to know about institutional performance (via mandatory public reporting) and the patient’s right to know about errors in his/her own care (via disclosure from providers). Despite the existence of a Joint Commission on Accreditation of Healthcare Organizations standard requiring disclosure, only about three quarters of hospitals had written policies to disclose minor error-related injuries. Responses to our vignettes revealed that hospital leaders were more likely to disclose moderate or minor incidents to their patients than to the state, particularly in states with confidential reporting systems.

While such practices are laudable, one implication is that states may be missing events important enough to be disclosed to patients, and therefore potentially of value to improving safety. In fact, some states are expanding their reporting systems. Massachusetts, for example, recently established the Betsy Lehman Center, an independent state agency, which has as one of its first goals the establishment of a voluntary, confidential system for collecting information on complications and near misses.

Attitudes also varied with respect to allowing state governments to share details of mandatory reports with affected patients and their families. About half of hospital executives thought that patients or families should be informed, at least in certain circumstances. The remainder may have preferred that their own hospitals assume this responsibility, but we did not ask about that possibility. Regardless of respondents’ rationales, this represents an important policy issue. To our knowledge, few (if any) state agencies routinely inform the affected patient or family when an incident has been reported. Instituting such a practice would help foster the goal of transparency, as long as the information is released in carefully circumscribed situations. As a way of avoiding uncertainty, perhaps states should require reporting entities to indicate, at the time the report is filed, that they have disclosed to the patient the fact that a report was submitted to the state and the details that were included in the report.

Despite the national prominence of patient safety, only half the hospitals always had patient safety formally on their board meeting agendas. On the other hand, more respondents put a high priority on finding out about root causes, improving procedures, and protecting reporters from negative consequences than they did on finding out who was at fault. If this signals a trend away from the blaming culture that has existed in the past, it may be indicative of efforts to strike a more productive balance between professional accountability and system performance.

Finally, this study suggests a number of potential strategies around the uses of mandatory reports to guide quality improvement. For example, until recently, most states have focused on case by case mitigation, rather than on culling data to perform analyses of trends, systemic problems, and best practices, followed by dissemination to the hospital community. The latter approach represents an opportunity to increase understanding of common problems, enhance the visibility of the issue, and begin to engage the interest of the medical and executive staff. Second, states could encourage reporting by clarifying definitions of reportable events and might consider developing special voluntary collaborative projects with hospitals to collect confidential reports on a small number of well-defined “near miss” events. Third, states might grant hospitals protected access to a database of deidentified abstracts of reported incidents. The information might alert hos-

Table 4. Hospital Patient Safety Policies and Practices

<table>
<thead>
<tr>
<th>Policy/Practice</th>
<th>Hospitals With Policy or Practice, % (N=203)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of patient safety formally on agenda of hospital board meeting</td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>53</td>
</tr>
<tr>
<td>Usually</td>
<td>29</td>
</tr>
<tr>
<td>Sometimes</td>
<td>16</td>
</tr>
<tr>
<td>Rarely/never</td>
<td>2</td>
</tr>
<tr>
<td>Priority in hospital of finding out about root causes of patient harm</td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>83</td>
</tr>
<tr>
<td>High</td>
<td>16</td>
</tr>
<tr>
<td>Medium or low</td>
<td>1</td>
</tr>
<tr>
<td>Priority in hospital of identifying procedures to improve patient safety</td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>62</td>
</tr>
<tr>
<td>High</td>
<td>36</td>
</tr>
<tr>
<td>Medium or low</td>
<td>2</td>
</tr>
<tr>
<td>Priority in hospital of protecting reporters from negative consequences</td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>60</td>
</tr>
<tr>
<td>High</td>
<td>33</td>
</tr>
<tr>
<td>Medium or low</td>
<td>7</td>
</tr>
<tr>
<td>Priority in hospital of finding out who was at fault</td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>37</td>
</tr>
<tr>
<td>High</td>
<td>33</td>
</tr>
<tr>
<td>Medium or low</td>
<td>30</td>
</tr>
<tr>
<td>Hospital has written policy that recommends disclosure of “unanticipated outcomes”*</td>
<td>85</td>
</tr>
<tr>
<td>Among hospitals with written policy, % that disclose the following:</td>
<td></td>
</tr>
<tr>
<td>Serious injury believed to be the result of errors</td>
<td>98</td>
</tr>
<tr>
<td>Minor injury believed to be the result of errors</td>
<td>87</td>
</tr>
<tr>
<td>Injury not believed to be the result of errors</td>
<td>65</td>
</tr>
<tr>
<td>Errors that do not harm patients</td>
<td>31</td>
</tr>
</tbody>
</table>

*Nine respondents who answered “don’t know” were excluded from this analysis. Percentages are weighted to reflect sampling proportions. Total numbers for individual variables vary slightly due to missing data.
pitals to the potential of similar events occurring in their facilities, allowing them to take proactive steps to prevent their occurrence. Finally, states might consider reaching out to state hospital associations and medical societies as a way of promoting cooperative relationships between regulators and providers, and minimizing duplication of reporting requirements.

Our study had several limitations that may affect its generalizability or interpretation. Experiences in other states may differ from those in our sample. Our response rate of 63% may lead to biased results if nonrespondents had different views toward state reporting systems. Limiting the respondents to CEOs and COOs may miss the views of other important actors such as safety officers or risk managers. However, our analysis of the CMOs indicated that on the fundamental questions regarding attitudes toward mandatory reporting, there were not large differences of opinion. Furthermore, we focused on mandatory systems, yet at least some states are experimenting with publicly run voluntary reporting systems.

In conclusion, this study was performed because understanding the motives and behaviors of key constituents is crucial to the success of public programs. Laws and regulations do not exist in a vacuum, and their implementation often follows a bargaining process in which various actors and organizations negotiate over the interpretation of objectives. Even where legal obligations exist, affected parties may display discretion and autonomy, due to vague program goals or nonstandard definitions. In the hospital setting, executive leaders influence institutional policy and foster norms for their employees. These individuals believe that existing state reporting standards fail in some cases to provide clear guidance on what should be reported and that mandatory reporting systems with public disclosure may actually discourage internal reporting, lead to lawsuits, and impart little benefit to patient safety. Hospital leaders, of course, have their own institutional biases, and there is some evidence that hospitals that become accustomed to transparency may eventually grow to be more accepting of it. However, if hospital leaders continue to harbor negative views of reporting, it is unlikely that state mandatory reporting systems will be highly successful in the long run.

**Author Contributions:** Dr Weissman 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: Weissman, Epstein, Schneider, Clarke, Kirle, Gatsonis, Feibelmann, Ridley. Acquisition of data: Weissman, Clarke, Gatsonis. Analysis and interpretation of data: Weissman, Schneider, Gatsonis, Feibelmann. Drafting of the manuscript: Weissman, Epstein, Feibelmann.

**REFERENCES**

11. Code of Massachusetts Regulations (CMR), Title 105, Chapter 130.331 (2003).