Studying Medical Error in SITU: Implications for Malpractice Law and Policy

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INTRODUCTION

Each day in a large teaching hospital, there are hundreds or more discussions among health care providers about deviations from optimal patient care; such discussions are integral to the dual missions of delivering health care and educating future health care providers. Not all of the errors discussed are recorded in the charts. Very few of them make their way to the written error documentation systems in the hospital, such as the incident reports or potential claims files. Fewer still serve as the basis for insurance claims or malpractice litigation.

The Institute of Medicine’s (IOM) report, To Err is Human, attempted to estimate the frequency of medical error. The report stated that preventable medical errors cause anywhere from 44,000 to 98,000 deaths per year.1 But the statistics available to the IOM about error were mainly derived from medical records or lawsuits. Since good policy begins with good facts, it is useful to study medical errors in situ and determine how current practices of professional self-regulation, institutional collection of data on errors, and the medical malpractice system each function to identify, rectify, or deter errors.

* Distinguished Professor of Law, Chicago-Kent College of Law; Director, Institute for Science, Law and Technology, Illinois Institute of Technology. This study would not have been possible without the intellectual aid of Carol Stocking, Ph.D. I am also indebted to the four observers—Karen Freel, Will Kelley, Patsy Spyer, and Dan Wolk—and other project participants—Mary Catherine Hendron, Richard Lipinski, Mark Granfors, Cynthia Morgan, Alfred Darnell, Anthony Maier, and Roz Caldwell. This project was made possible by grants from the Robert Wood Johnson Foundation, the M.D. Anderson Foundation, and the American Bar Foundation and was undertaken with co-investigators Dr. Mark Siegler, Dr. Thomas Krizek, Dr. Lawrence Gottlieb, Dr. Thomas Vargish, Claudette Krizek, and Dr. Carol Stocking. I am especially grateful to the American Bar Foundation, which through institutional support and the aid provided by its community of research fellows, contributed immeasurably to this project. A preliminary account of the incidence of errors is reported in Lori B. Andrews et al., An Alternative Strategy for Studying Adverse Events in Medical Care, 349 LANCET 309 (1997).

1. INST. OF MED., TO ERR IS HUMAN: BUILDING A SAFER HEALTH SYSTEM I (Linda T. Kohn et al. eds., 2000).
Fifteen years ago, with funding from the Robert Wood Johnson Foundation, the M.D. Anderson Foundation, and the American Bar Foundation, we began a prospective observational study of the nature, incidence, and causes of errors identified by health care providers in work rounds and clinical meetings. We compared informal error identification mechanisms to the formal institutional mechanisms for identifying errors and to the patient-initiated mechanisms of identifying errors through complaints and claims. The central finding of the study was that the rate of errors was high. Nearly half of all patients had errors in their care. Nearly one in five patients had errors with a serious harm. Yet very little was done to prevent further errors. The person who committed the error was rarely held accountable. And, when the error was caused by an administrative problem (such as faulty equipment), the administration was rarely informed, so it did not have the opportunity to correct the situation to prevent future errors. The findings of this study point to a crying need to find other means of pressuring or inducing hospitals to identify, remedy, and prevent medical errors. This Article discusses our data and then analyzes policies that require disclosure of errors by physicians, or those who witness the physician's work, to the patient and the hospital in order to encourage more error prevention activities.

II. PROJECT METHODOLOGY

The guiding questions of the study were: What is the incidence of errors identified through various mechanisms in a hospital? What causes such errors? What responses do the health care providers or hospital administrators make when an error occurs? What responses do patients make to such errors? Finally, how well do formalized reporting mechanisms within a hospital function in identifying errors, providing an early warning system about errors that might result in lawsuits, and providing an indication about the quality of the hospital's services?

The centerpiece of the project was a prospective observational study of the internal hospital system of work rounds and clinical meetings in which health care providers themselves identified and responded to errors in the care of surgical patients. The focus was on the care of hospitalized patients of surgeons because, although medical maloccurrences leading to litigation can occur anywhere in the health care system (for example, in physicians' offices, nursing homes,

2. The actual number might be even higher, since for many patients the level of harm was not discussed by the health care providers.
or laboratories), approximately 80% of patients' claims of malpractice revolve around an incident in a hospital. Moreover, in approximately one-third of hospital claims, surgeons are the principal defendants.

We assigned trained ethnographers to shadow surgeons and other health care professionals and hospital employees who cared for surgical patients in a particular hospital. The observers attended all regularly scheduled gatherings at which there were discussions about the care of patients admitted to ten different surgical services. These gatherings were of two types. The first were work rounds, at which residents or attendings led a health care team from one patient's room to another. The second were clinical meetings, at which a group of health care workers met to discuss patient care; these meetings included those held at the unit level (such as nursing shift changes and case conferences) and those held at the section or departmental level (such as morbidity and mortality conferences and quality assurance reviews).

This was a study of the behind-the-scenes discussions of errors by health care workers (nurses, medical students, interns, residents, attending physicians, administrators, pharmacy workers, and others). The observers did not make judgments about whether errors had occurred, but rather took notes—and later coded—the description of the errors provided by the health care workers. The health care workers discussed their own errors and the errors of other health care workers. For purposes of the study, errors were defined as incidents in which a health care provider or other hospital employee was said to have undertaken an action (or failed to undertake an action) when, at the time, an alternative, more appropriate action was possible. The definition of errors did not include bad outcomes caused by the patient's condition or by an acceptable risk inherent in a particular procedure. For a subset of incidents which met our definition of error,


5. The surgical services were kidney transplant, liver transplant, orthopedic, plastic surgery/burns, thoracic, urology, vascular, and the three divisions of general surgery (gastrointestinal, oncology, and trauma).

6. The observers recorded extensive information about the discussion of each error, including: a description of the error; who identified it; what was indicated by the health care workers to be the cause of the error; what was indicated to be the effect on the patient; who, if anyone, was blamed; and any responses to the error that were mentioned. The observers neither asked questions nor made medical judgments.
the incident at issue was specifically characterized as an error by one or more of the health care workers discussing it.

The observational portion of the study provided data on the informal mechanisms used by health care providers at work rounds and clinical meetings to identify errors in patient care. The hospital administration did not receive reports from those settings and thus had no idea about the high incidence of errors being discussed by their health care providers.

Other strands of the study collected data on the formal institutional mechanisms for identifying errors. Data were collected from patient occurrence reports—standardized reporting forms that are filed (usually by nurses) with the hospital’s legal department to record certain categories of errors, such as medication errors, patient falls, or intravenous line problems. Data were also collected from potential claim files. These are files opened by the legal department when a health care provider (usually a physician) calls to indicate that an incident has occurred about which the patient might sue. Lastly, data were collected on actual patient claims, in which patients sued or otherwise made demands for compensation on the grounds that an error was committed in their care. We then expanded the study and analyzed hospital-wide data on all patients for a two-year period, not just those of the ten surgical services in which we collected observational data. We analyzed background information about the patients and information from potential claim files and open claim files which included a wide range of rich data, such as how (if at all) the patient learned of an error in his or her care, what the patient’s relationship with his or her physician was, and how much money the hospital had set aside to pay the patient if he or she later brought a claim. We tracked the malpractice cases involving our observational patients for fifteen years. One case involved a settlement fourteen years after the error.

III. Incidence and Characteristics of Error

The study reported here is unique in its prospective nature and the intimate look it provides into the workings of health care providers. The one-of-a-kind nature of the study and the lessons that can be gleaned from it make it worth considering the data in great detail to understand the factors contributing to the high incidence of errors in hospitals, who gets blamed for the errors, whether errors get corrected and prevented, and what circumstances lead to patients’ lawsuits.

It became clear within the first week that an observational study in a hospital was much different than one in a law firm or a corporation—and that the difference was going to work to our advantage.
Much of the focus of both the teaching enterprise and the health care enterprise in the hospital was on identifying and dealing with error. The health care workers could not stop those discussions just because we were there or the entire system would grind to a halt.

In addition, it was much easier to be a fly on the wall in the hospital setting because of the enormous turnover in participants at the various meetings we attended. Medical students rotated through the meetings on a monthly schedule. Residents stayed for three months. Nurses changed shifts. There were always new faces in the settings we studied, so we did not stick out as odd. And, because new students, residents, and nurses were constantly being added, errors needed to be discussed in relatively simple ways to make sure the newcomers understood what should have been done. Often errors were discussed in an obvious way, such as when a surgeon said, “I must have been brain-dead when I did that” or when a critical care physician said, “You never do that to a diabetic.”

At one of the first meetings that I attended with an observer, the attending physician said, “Oh, the observers are here. Now we can’t talk about our mistakes or tell dirty jokes.” Within five minutes, though, he had done both.

The observers attended work rounds and clinical meetings over a nine-month period and chronicled discussions by health care workers involving the care of 1047 patients. At least one error was identified by the health care workers in the care of 480 (45.8%) of the 1047 patients in the units studied. No errors were mentioned about the care of 567 patients (54.2%); one error for 15.1% of patients; two to five errors for 20.5% of patients; and more than five errors for the remaining 10.2% of patients in the study population. Errors seriously impacted 17.7% of the patients, ranging from temporary disability to death.

There were a total of 2183 errors, over four errors per patient with an error. Serious injury occurred from 462 errors (21.2%). For 1360 errors (62.3%), the seriousness of its effect was not disclosed.

7. With respect to demographics, 52% of patients were male, 46% were Caucasian, and 43% African-American. The primary payment source was third party payors (49.5%), Medicaid or uninsured (22.1%), and Medicare (29.3%). The patients were in the hospital during the time period from July 1, 1989 through March 31, 1990. Data on their subsequent legal claims were collected through March 31, 2004.
8. See infra app. A, fig. 1.
9. For purposes of the study, serious injury was defined as either a temporary physical disability, permanent disability, or death.
10. We were interested in casting a broad net in classifying errors. Consequently, our definition of error did not require a discussion of actual harm to the patient. We did so for two
321 (14.7%) of the errors reported said to have caused no harm to the patient.

The 17.7% of patients who had errors with a serious impact is significantly higher than the 3.7% rate of errors with similarly serious effects found in the Harvard Medical Practice Study of 30,121 medical records of New York hospital patients. This disparity is understandable, since one would not expect that all errors that health care workers identify would be recorded in patients’ records. In fact, some physicians in the study indicated that they did not include information about errors in the patient’s chart because they wanted to avoid litigation.

A. Causes of Errors

Although this was a study of discussions addressing the care of surgical patients, only 10.5% of errors and 19.7% of serious errors related to surgery per se. More frequent overall were errors involving monitoring and daily care—most often, the follow-up care to surgery.

reasons. First, since our data were collected from coding the existing discussions of health care workers (and not interacting with them through questions), we could not be certain that a failure to mention that harm had occurred to the patient meant that there was no harm to the patient. (For example, if the patient had suffered such serious harm that all the health care workers already knew about it, they might not have felt the need to bring up that fact at a particular meeting.) Even in circumstances in which the health care workers actually stated that the patient had suffered no harm or minor harm, we were still interested in collecting data about the error. In some instances, the potential harm of the error was averted by an intervening action of another health care worker, by the patient, or by sheer luck. Despite the fact that no harm occurred in that particular instance, collecting data about the error was important in developing means to prevent future potentially harmful instances of such errors.


12. Indeed, prospective studies of certain types of care report much higher rates than the Harvard study found. For example, Robert Brook’s classic 1970 study found that only 27% of one cohort of patients seeking care in an emergency room received “minimally adequate medical care.” See generally Robert H. Brook et al., Effectiveness of Nonemergency Care Via an Emergency Room, 78 Annals Internal Med. 333 (1973). Another study found that 36% of 815 consecutive patients had an iatrogenic illness, and 9% had an iatrogenic event that was life threatening or produced a disability. See generally Knight Steel et al., Iatrogenic Illness on a General Medical Service at a University Hospital, 304 New Eng. J. Med. 638 (1981). Meyers reports that “[t]here is evidence, derived mainly from studies of hospital patients, that the denominator of iatrogenic illness and injury is large.” Allan R. Meyers, “Lumping It”: The Hidden Denominator of the Medical Malpractice Crisis, 77 Am. J. Pub. Health 1544, 1544 (1987).

13. The fact that problems in the surgery per se were not the focus of most discussions of untoward errors is also indicated by an analysis of where the errors occurred. Of the 2183 errors discussed in the study settings, nearly three-quarters of those in which a location was known and coded (of 2183, 789 are missing on the “where” variable) occurred in the patient’s room.
Monitoring and daily care made up 29.3% of errors and 17.1% of serious errors.\textsuperscript{14}

The causes of errors that were identified by the health care workers could be categorized into three main types: individual, interactive, and administrative.\textsuperscript{15} One or more causes were mentioned for just over half of the errors. Of those errors, 37.8% were said to have been caused by an individual, for example by poor technical performance, poor judgment, and failure to act on or failure to obtain information. Further, of these errors, 15.6% had causes related to the interaction between health care providers, services or entities in the hospital, such as poor communication between services, inadequate training, or poor communication to a subordinate or to a superior; 9.8% had causes related generally to administrative decisions and protocols—for example, defective or unavailable equipment or inadequate staffing.\textsuperscript{16}

The study results highlight the need for attention to a wide range of potential causes of errors. Although the practice of medicine is often viewed as an individual effort between doctor and patient (and most policy recommendations and preventive strategies are focused on that individual effort), the prevalence of errors with interactive or administrative causes (25.4%) underscores the influence of the interrelationship between health care professionals and administrative actions that impact errors.

\textbf{B. Correlates of Errors}

We performed various statistical analyses, such as logistic regression analyses, to determine whether there was some attribute of the patient, the patient’s condition, or the hospital experience that was correlated with errors. For example, we wondered if there were more discussions of errors in the care of African-American patients. Basic patient demographics such as gender, race, and payor status were not correlated with the incidence of errors in our study. However, we found evidence of a larger number of errors in older and sicker patients. The likelihood of having an error increased by about 6% for each day spent in the hospital.

Length of stay was significantly correlated with having an initial error and having an initial serious error. In addition, having a serious error prolonged the hospital stay. An event history analysis\textsuperscript{17} determined that patients who had a serious error were 74% less likely to be

\textsuperscript{14} See infra app. A, fig. 2.
\textsuperscript{15} Some errors had other causes.
\textsuperscript{16} See infra app. A, fig. 3.
\textsuperscript{17} DAVID ROXBEE COX & D.O. OAKES, ANALYSIS OF SURVIVAL DATA (1984).
discharged on any given day after the error than were patients who
did not have a serious error.

IV. **RESPONSE TO ERROR BY HEALTH CARE PROVIDERS**

While many other studies have attempted to determine the inci-
dence of medical errors, and some have analyzed the causes, this study
is relatively unique in its collection of data on health care providers’
responses to errors and the hospital’s response. We were able to study
the process by which the health care providers determined that some-
thing was an error, when and how they assigned blame, and when and
how they took action in response to the error.

  **A. Labeling the Adverse Event as an Error**

For 61.9% of the incidents that met the study definition of error, at
least one health care worker discussing the error specifically charac-
terized it as an error. With respect to 128 or 6.1% more of the inci-
dents, there was a dispute over whether the incident was an error.
The patient demographic characteristics and the illness variables did
not have a statistically significant effect on whether an incident was
labeled an error; nor did the seriousness of the event influence
whether the event was labeled an error. However, the odds of an
event being termed an error increased as the status of the person who
omitted or committed the error decreased. Residents were more
likely to be said to have caused errors than attendings.

  **B. Blame as a Response**

For most errors, the health care worker or workers discussing the
error assigned blame to an individual or hospital entity for causing the
error.\(^\text{18}\) Blame was less likely to be assigned when the error resulted
in serious harm.\(^\text{19}\) Blame was assigned in 42.8% of the cases of serious
harm, compared to 52.8% of the cases resulting in no-harm and non-

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\(^{18}\) Whether or not the event was called an error and whether or not it had an identified cause
were significantly related to whether blame was assigned. Naming an event an error increased
the odds of blame being assigned six-fold. If the event was said to be caused by an individual,
blame assignment was four times more likely. However, having a systems-caused error reduced
the odds of blame assignment three-fold. Thus, when a maloccurrence in patient care is caused
by an individual health care practitioner, blame is more likely to be assigned than when the
cause is attributed to the hospital administration.

\(^{19}\) Chi-square, \( p = .00010 \).
serious harm. Blame was significantly more likely to be placed if the harm was averted by skill than if it was not. We explored whether there was a tendency for the health care worker to blame outsiders—that is, individuals or entities that were not part of their own health care team. Among the errors which the observers could code on this variable, the identifier of the error blamed him or herself or a member of his or her team for 42.5% of errors and blamed an outsider for 57.5% of errors. However, those outsiders—physicians and other workers from other departments—were often not contacted and told about their errors. By themselves, none of the variables associated with the patient's characteristics or the patient's illness were statistically significant in a prediction of whether blame was assigned. However, in a more comprehensive regression analysis, blame was more likely to be found if an error happened to a white person (twice as likely), happened to a person who was an emergency admission (increases odds by 50%), had an individual cause (four times as likely), or was labeled an error (more than six times as likely).

C. Health Care Provider's Response to Error

Health care providers responded to the errors that they or others pointed out in the meetings observers attended. With respect to two-thirds of the errors, the participants in the meetings discussed a response to the error. The majority of responses were corrective, dealing with providing a medical response to the immediate needs of a particular patient. This included changing medication, doing a subsequent surgery, and re-admission to the hospital for discharged patients. There were only a few instances in which the errors led the health care workers to think systematically about a problem and to devise a response that involved preventing future errors rather than correcting them after the fact. In 68.7% of the errors (which had a response) there was a response aimed at correcting the immediate problem, compared to less than 1% with a response aimed at devising specific means for preventing future errors. In fact, more errors (4%) had responses aimed at talking to patients to cool them out than responses aimed at preventing future errors.

20. Blame was assigned in 60.7% of the cases of no harm, which was significantly greater than the 49.0% of the cases with any harm \(p = .00018\) in a chi-square.
21. Chi-square, \(p = .01541\).
22. Some of the responses given were significantly different if the person blamed was not a member of the home service. Similarly, notifying a superordinate was significantly \(p = .00275\) more likely to occur about someone from a different service. It only occurred for 0.4% of the
With respect to whether the health care professionals suggested that a response be made to a patient’s error, serious errors were nearly twice as likely to prompt a response.\textsuperscript{23} The likelihood of an error getting a response was increased by 50% if the error was labeled an error. However, when blame was assigned, the likelihood of a response decreased by almost two-thirds. This latter finding suggests that blame itself may be considered a response—and that once a particular individual has been blamed for a maloccurrence, the collective group of health care professionals discussing the error may not put as much effort into finding another response, such as taking action to prevent future errors.

Although there were no significant demographic differences in who had errors, there were differences in how cause was assessed, how blame was assigned, and how errors were responded to, depending on the gender, race, and socioeconomic status of the patient. Women and poorer patients were more likely to be said to be the cause of their errors. When an African-American was the subject of an error, there was a greater tendency to blame an amorphous entity (“Them”). When a Caucasian was the subject of an error, there was more of a tendency to blame an identified individual.

Also, the responses to errors in the care of disadvantaged patients (African-Americans, women, and the poor) were different than responses to errors in the care of advantaged patients. If an error occurred in the care of a woman or an African-American, the health care professionals were less likely to use the error to make a change to prevent future errors. After errors in the care of male patients, the health care providers were more likely to change the protocol to prevent future errors.

\textsuperscript{23} The coded responses included medical responses (such as redoing a surgery), social responses (such as having a social worker talk to the patient), unofficial responses (such as talking to the blamee), and official responses (such as changing a protocol to prevent future harm to other patients).
D. Blame and Responses as Incentives to Error Prevention

The clinical meetings we studied are generally considered to be the place where self-regulation is at its best and physicians are held accountable for their errors. However, in those settings, blame was not commonly assigned to the highest ranking physicians.\textsuperscript{24} With respect to only 8.7\% of the errors discussed was the attending physician blamed. The actions of an attending were not likely to be called an error. In a logistic regression, an error was more likely to be labeled as such if committed by a resident\textsuperscript{25} and less likely to be called an error if it was committed by an attending physician.\textsuperscript{26}

Moreover, a response was significantly more likely to be made to the error if a resident committed it\textsuperscript{27} and significantly less likely if an attending committed the error.\textsuperscript{28} Since residents present the information about errors and their professional future is dependent on positive recommendations from attendings, it is logical that they will not be harsh on the attendings for whom they work. In addition, an error causing serious harm was significantly less likely to receive a response,\textsuperscript{29} perhaps because of the interpersonal dynamics of not wanting to devastate a colleague or to raise issues of potential malpractice liability. Moreover, information about errors was not used systematically to prevent future errors or to facilitate an institutional response to a patient who had been harmed. This was particularly problematic when the error had an administrative cause yet the health care providers made no response themselves and did not disclose it to administrative staff for a response on their part.\textsuperscript{30} For example, the administration was notified in only eight of the 185 administrative errors and in only one of the thirty-four cases in which an error occurred

\textsuperscript{24} For only 8.67\% of errors was an attending physician blamed. This was less than the proportions for residents (15.02\%) or nurses (12.51\%).

\textsuperscript{25} (p = .0002, z score = 4.221).

\textsuperscript{26} (p = .00532, z score = (-2.787)). An adverse event was more likely to be called an error if it was due to a commission rather than an omission (p = .0000, z score = 11.308), or if the case was clear (p = .0000, z score = 7.157). Variables that were not significantly related to whether an adverse event was labeled an error were demographic variables regarding the patient (race, gender, payor status, age), the patient’s condition (if the patient was in an ICU or the length of the patient’s stay), and whether the person who committed the act was a member of the identifier’s service.

\textsuperscript{27} (p = .00531, z score = 2.788).

\textsuperscript{28} (p = .01850, z score = (-2.355)). A response was also significantly more likely to be made to the error when the cause was clear (p = .0017, z score = 3.760), and significantly less likely to receive a response if the patient was older (p = .00855, z score = (-2.630)) or if the harm was serious (p = .02430, z score = (-2.252)).

\textsuperscript{29} (p = 0.02430, z score = (-2.252)).

\textsuperscript{30} In logistic regression analysis, blame was less likely if the error had an administrative cause.
because necessary equipment was not available. No one notified the administration in any of the forty-two cases in which an error occurred due to defective equipment.

Whether blame was assigned was in part dependent on the outcome of the error. Blame was most likely to be assigned in cases where injury was averted by skill (100% of such cases), where there was emotional injury only (80% of such cases), where there was no injury (68.8% of such cases), and where there was physical injury of short duration (60.7% of such cases). It was less likely to be assigned when injury was averted by luck (46.7% of such cases) or where the injury was serious (49.1% of such cases). Thus, blame was assigned a higher percentage of the time when the consequences of assigning blame were not great (because the patient had not been seriously injured and thus was less likely to litigate) or when the incident could be used to discuss the health care provider's skill.

The study points to several flaws in the current mechanisms of self-regulation of physicians. The morbidity and mortality meetings and other clinical meetings are the only places outside of the legal system where high-ranking physicians are held accountable for their errors. However, in those settings, blame was not commonly assigned to the highest ranking physicians and blame was less frequently assigned for errors which cause serious injury than for errors which cause no injury or minor injury. In addition, information about errors discussed in those settings was not used systematically to prevent future errors or to facilitate an institutional response to a patient who had been harmed.

The findings of the observational study suggest that the self-regulatory system of rounds and clinical meetings is an excellent way of identifying a wide range of errors. However, it is not an efficient way of preventing future errors or calling to task the highest-status health care providers. When health care providers in these settings discussed potential responses, only 1% of those responses entailed decisions to inform the hospital administration about the occurrence of the errors.

### E. Occurrence Reports and Potential Claims

Because hospitals do not currently have procedures for monitoring the discussions of errors at rounds and clinical meetings, they use other mechanisms—occurrence reports and potential claims files—for encouraging the reporting of error to the hospital itself. An analysis of the occurrence reports filed in the hospital during the time period of the observational study found that they did not adequately capture the range and number of errors which were discussed at meetings. In
the observational study, there were 480 patients who had errors discussed at meetings, yet only 113 of the patients in the study population had occurrence reports filed about them.

Within the hospital system, error reporting was discouraged in various ways. At orientation, new medical residents were actually told by more senior doctors not to fill out occurrence reports. Consequently, the error-reporting through occurrence reports was generally undertaken by nurses and generally focused on the most mundane errors. The greatest proportion of errors chronicled in the occurrence reports overall involved medications and complications. The occurrence reports had a significantly lower proportion of errors involving diagnosis, surgery, and treatment than did the discussions at rounds and meetings. Moreover, the occurrence reports did not provide an effective early warning system about claims. When hospital-wide data for a two-year period was analyzed, only 13.49% of the patients who brought claims had an occurrence report filed about them.

The potential claims files (in contrast to the occurrence reports) did a better job of capturing problems in diagnosis, surgery, and treatment, although they still focused on significantly different categories of errors than did the clinical discussions. Moreover, the potential claims files also dramatically underreported the full range of serious errors discussed at rounds and meetings. Of the 480 patients who were reported to have had errors in their care, only twenty-two were the subject of a potential claim file. In fact, more than half of the people with serious errors (121 of 185, or 65.4%) that were discussed at rounds or meetings were not brought to the attention of the hospital through either of the existing mechanisms (occurrence reports or potential claim files).

The bulk of information about errors in patient care is not passed on to the hospital administration through these institutional channels of occurrence reports and potential claim files. This impedes the hospital's ability to recognize the incidence and nature of errors and develop preventive strategies.

31. The difference in the sums of these three types of errors across the two forms of reporting reported is significant at the $p < .00001$ level. They form 19.1% and 7.3% of these groups, respectively.
32. $P < .0001$.
33. Figure 4 compares the percentage of patients with errors of different types that came to the hospital's attention through the various mechanisms. See infra app. A, fig. 4.
V. Claims by Patients

Hospitals also identify errors by patient claims. If there were a patient complaint or a claim for damages for every error that occurred, hospitals could use these patient responses to identify errors. However, far fewer patients make complaints, file claims, or otherwise express dissatisfaction with care than the number who could.

Although 45.8% of the 1047 patients in the study experienced at least one error, and at least 17.7% of patients had one or more errors with a serious injury, far fewer patients took any actions that indicated dissatisfaction with their care. Of the 1047 patients in the study, thirty-nine patients (3.7%) asked that their medical records be sent to themselves, to another health care provider or to a lawyer—a possible indicator of dissatisfaction. Five patients (less than half of 1%) sent letters of complaint to the president of the hospital. Thirteen patients of the 1047 (1.2%) brought a claim.

Looking more closely at the 185 people who were victims of errors with serious effects, only a few took any actions that indicated dissatisfaction. Eight (4.3%) made a records request, one wrote a letter of complaint (0.5%), and four (2.2%) made claims. Of the patients identified by health care workers as having errors with serious effects, 62.7% (116 of 185) were not brought to the hospital’s attention either through the formal hospital channels of occurrence reports or potential claims, or through patient-initiated contacts.

With only thirteen of the 1047 patients bringing claims, we could not do much in the way of statistical analyses to determine how claimers differed from non-claimers. To learn more about claiming, we turned to additional data sources covering all patients who have been admitted to the hospital over a two-year period. During that period, there were an additional 450 files opened by the hospital as potential claims and there were fifty-four claims. These potential claims, the

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34. Figure 5 shows how few of the 13 patients came to the hospital’s attention prior to claiming. For purposes of this study, a claim was defined as a demand for compensation or remediation of a perceived error. See infra app. A, fig. 5. Figure 5 also indicates which of the 13 patients eluded all the hospital’s methods of discovery prior to their claim (Patient Number One) and which patients were identified through multiple means (such as Patient Number Six).

35. We can tell you a little about the eleven patients who claimed. In each case:
(1) There was an event that appeared to be clear error.
(2) Either the patient or the patient’s family (or both) had evidence that some aspects of the patient’s care had been badly handled (though it was not necessarily the incident at issue in the claim).
(3) Prior to the claim, the patient or family was noted to be aroused in some way about the care (angry or depressed).
There was external evidence that provided support for any negative inferences the claimants might draw (for example, a remark by a physician about a problem in the care).
majority of which were initiated by calls from physicians, involved incidents about which the health care provider felt that the patient had a right to sue. Overall, only about one in nine patients that the hospital suggested in its internal files had a right to sue actually came forward and sued.

What distinguished the claimers from the non-claimers? A fundamental characteristic of the patient that seems intuitively related to the decision to claim is whether the patient was aware of the negligence. Patients are not routinely told when errors have been committed in their care. Naturally, all the claimers were aware of their errors, significantly more than the 70% of patients who were the subject of potential claims files. Significantly fewer of the patients identified in potential claim files—46%—learned of the error by witnessing it. The claimers also had more serious injuries than the nonclaimers (although 56% of the nonclaimers had serious injuries, including 33% who died).

Certain background characteristics of the patients were correlated with claiming. White patients and wealthier patients were more likely to bring claims. However, gender of the patient did not seem to affect whether a patient was likely to bring suit.

Surprisingly, the nature of the patient’s relationship with his or her physician—that is, whether the relationship was good or bad—was not correlated with claiming. However, if a patient or a patient’s family was dissatisfied with the overall care, that patient was more likely to make a claim. Further, 51% of the patients in the potential files were dissatisfied, as compared to 89% of the claimants.

The status of the health care provider was also correlated with claiming. There was a greater tendency for potentials to turn into claims when the incidents involved lower status health care professionals. For example, there was a higher proportion of errors involving nurses in the claims than in the potentials.

Because so few claims are brought by patients compared to the actual number of errors, an assessment of patient claims is not the most effective method for a hospital to assess its quality of care. The existing formal hospital mechanisms for bringing problems in patient care to the attention of the hospital administration—the incident reports and the potential claims files—were also deficient.


37. It is also interesting to look at how patients learned of the error. A majority of all patients, 57%, learned of the error by witnessing it themselves, while another quarter learned about it from a health care provider, usually their physician.
VI. LIMITATIONS TO THE ERROR IDENTIFICATION IN WORK IDENTIFICATION IN WORK ROUNDS AND CLINICAL MEETINGS

Although the discussions at work rounds and clinical meetings captured many more errors than the institutional reporting mechanisms of occurrence files, potential claim files, or lawsuits, they did not capture all of the errors that occurred in patient care. The observers heard no errors mentioned with respect to 567 (54.2%) of the 1047 patients in the study units. Of these 567 patients, fifty-one were identified in occurrence reports; three were considered by the hospital to be potential claimants; four asked that copies of their records be sent to other doctors or to lawyers; two wrote letters complaining about their care; and two instituted claims. Of the two patients who claimed and had not been discussed at the meetings, one had not come to the attention of the hospital through any of the other channels (occurrence report, potential claim file, complaint letter, or medical records request). The other had been the subject of an occurrence report.

Overall, however, patients about whom errors were mentioned at the work rounds and clinical meetings appeared significantly more often in occurrence reports and potential claims than did patients for whom no errors were discussed. Similarly, patients identified at rounds and in meetings as having errors were significantly more likely to bring claims.

VII. POLICY RESPONSES TO MEDICAL ERRORS

This study found that a high percentage of hospitalized surgical patients had errors in their care. However, the vast majority of patients with errors (345 of 480) were not brought to the attention of the hospital as an institution, either by the health care providers or by patients. This impeded efforts to prevent future errors. Moreover, since the health care providers and the institution received additional revenues for their efforts in correcting the errors they made (generally without the patients realizing that errors had been made), there was little economic pressure to correct the errors. The slim possibility of having to pay compensation to a patient did not appear to provide a sufficient incentive to avoid errors, since only 1.24% of patients (thirteen of 1047) made a claim and most people making claims did not receive compensation. Of the twenty-six patients who were classified as potential claims by the hospital itself, most did not claim. Yet, the

38. p < .00001 (z score = 7.53).
39. p < .005 (z score = 2.82).
hospital set aside substantial reserves—generally about $100,000 per patient—to compensate those patients if they had made claims.

By four years after the end of the statute of limitations period, only three of the thirteen claiming patients had received compensation; two had cases which were still pending. The hospital set aside $4,700,000 as a potential payout to the thirteen patients. They had set aside a million total for the three who ultimately received $335,000 total. There were voluntary dismissals of a number of cases, which had $100,000 set aside each. Subsequently, the two additional patients’ cases were resolved, one by dismissal and one by a substantial settlement.

What legal policies might be appropriate to increase the amount of attention hospitals pay to errors in care and to create incentives for hospitals to prevent errors? The potential policies include creating a duty to disclose error on the part of the erring physician or his or her colleagues, expanding the circumstances under which hospitals are liable for physicians’ actions, or substituting enterprise liability on the part of hospitals for physicians’ malpractice liability.

A. The Erring Health Care Provider’s Duty to Disclose

One approach with a solid grounding in existing law would be to impose upon health care providers a duty to inform patients that errors have occurred in their care. This would presumably put greater pressure on health care providers and hospitals to monitor how care is provided. Such a disclosure duty might be handled under the legal concept of informed consent or as a part of the physician’s fiduciary duty to the patient, since fiduciaries generally have a duty to disclose

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40. Eight had voluntarily dismissed their cases.
41. Even if the three cases totaling $335,000 had been handled on a contingent fee basis of a generous one-third, the maximum paid to the thirteen plaintiffs’ attorneys would have been $111,666.66. In contrast, the defense attorneys handling the thirteen cases received $388,664.19.
information relevant to the client's interests. Not disclosing an error could also be considered fraudulent concealment.

A duty to disclose would certainly seem warranted where the error has created an additional problem that the patient will need corrected. A duty to disclose an error when rectifying treatment is

42. Prosser and Keeton on Torts 738–39 (5th ed. 1984). See also Farmer's State Bank of Newport v. Lamon, 231 P. 952, 953 (Wash. 1925). In Wohlgemuth v. Meyer, 293 P.2d 816 (Cal. Ct. App. 1956), the court noted that there existed a fiduciary duty on the part of the doctor and on the part of the hospital to disclose negligence: “The doctor-patient relationship is a fiduciary one and it is incumbent on the doctor to reveal all pertinent information to his patient. The same is true of the hospital-patient relationship . . . . Withholding information [that negligence had caused the death of the plaintiff's wife] would in a sense amount to misrepresentation.” Id. at 820.

Moreover, in Nixdorf v. Hicken, 612 P.2d 348 (Utah 1980), the court, in reversing a directed verdict in favor of the defendants and remanding for a new trial, held that “once the duty to disclose certain information is established, then the physician's total breach of that duty, as found in the present case [where the doctor could not locate a surgical needle after it became disengaged from the needleholder during surgery and did not disclose the presence of the needle to the patient], presents to the jury the question of what damages were proximately caused by the breach.” Id. at 354–55 (footnotes omitted). The court reasoned that the fiduciary nature of the physician-patient relationship, combined with the patient's right to determine what shall or shall not be done with his body, created a duty in the physician to disclose to his patient any material information concerning the patient's physical condition. Id. at 354. The court stated that the information was material and disclosure was required if a reasonable person in the patient-plaintiff's position would have considered the information important in choosing a course of treatment. Id.

In Borderlon v. Peck, 661 S.W.2d 907 (Tex. 1983), “during the operation, a suture needle broke and Dr. Peck purposely left a portion of the needle in Borderlon's abdominal region.” Id. at 908. Dr. Peck did not inform the patient of the needle, but another doctor discovered the needle a month later at which point Borderlon underwent another surgery to remove the needle from his abdomen. Id. Although Borderlon brought suit after the statute of limitations elapsed, the court held that there is a duty for the physician to disclose negligent acts or injuries which occur from treatment. Id. The court stated that “[b]ecause the physician-patient relationship is one of trust and confidence, Texas recognizes a duty on the part of the physician to disclose a negligent act or fact that an injury has occurred.” Id. This concept was reinforced in Earle v. Ratliff, 998 S.W.2d 882, 888 (Tex. 1999) (affirming the physician's duty to disclose a negligent act and holding that “fraudulent concealment requires more than evidence that the physician failed to use ordinary care; it also requires evidence that the defendant actually knew the plaintiff was in fact wronged, and concealed that fact to deceive the plaintiff”).

43. A California court of appeals found fraudulent concealment when a professional football player suffered a knee injury in a game and the team physician failed to reveal to him that the injury was degenerative and that continued professional play would only worsen the condition. See Krueger v. S.F. Forty-Niners, 234 Cal. Rptr. 579, 585 (Ct. App. 1987). The player continued to play football, received additional treatments from the physician, and thereby suffered irreversible knee damage. Id. at 580–82.

44. In Nixdorf, the court concluded that the “[d]amages which may be shown to follow as a proximate result of the nondisclosure include reasonable charges for discovery and removal of the needle and monetary compensation for the mental anguish following the realization of the needle's presence.” Nixdorf, 612 P.2d at 355.
needed could be justified under the informed consent line of cases that require physicians to inform patients about the nature of their condition. An Illinois case, *Taber v. Riordan*, suggested that just as there is a pre-operative duty to inform of possible complications, there might be a post-operative duty to inform of complications that have arisen. Such a duty can also be analogized to the cases in which a physician has a duty to warn of subsequently-discovered risks of a treatment, such as the cases which require physicians to contact patients and former patients to warn them of the subsequently-discovered risks of certain intrauterine devices.

Beyond situations in which non-disclosure of error might put patients at physical risk, there are many situations in which the non-disclosure would put patients at future financial risk. With respect to 43% of the errors identified in the observational study, the health care providers took subsequent medical action to correct the error (such as returning the patient to surgery or instituting antibiotics). Presumably, in many instances, the patient was not told that there was an error in care, but was led to believe that the subsequent treatment was necessitated by his or her original condition. Yet the patient was generally billed for the subsequent treatment. One study estimated that the in-hospital costs for a drug error on a hospitalized patient averaged $6,341. In our prospective observational study, only a small minority of bills were forgiven. Of the patients in the observational study for whom potential claims were started, certain charges were forgiven for 5%. Of the patients who brought claims, certain charges were forgiven for 23%.

Requiring disclosure to prevent financial harm is akin to numerous other precedents that prohibit physicians from taking unfair financial advantage of patients. These include statutes that require physicians to disclose when they are referring patients to laboratories or nursing homes in which they have a financial interest. Further, other cir-

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45. In some instances, the physician’s failure to reveal the error has meant the patient was denied the chance to get a corrective treatment in time. See, e.g., Sincuski v. Saeli, 377 N.E.2d 713 (N.Y. 1978).


50. Similarly, some statutes governing disciplinary actions against physicians prohibit "promotion of the sale of drugs, devices, appliances, or goods provided for a patient in such manner as to exploit the patient for financial gain of the physician." 225 ILL. COMP. STAT. 60/ 22(A)(18)(1999).
circumstances require a duty to disclose as illustrated in Moore v. Regents of the University of California,\(^\text{51}\) where physicians were found to have a fiduciary duty to disclose to a patient the commercial interest they had in developing a cell line out of the patient's tissue.\(^\text{52}\) These various precedents suggest a sensitivity to potential conflicts of interest, which is also a guiding force behind the larger informed consent doctrine itself.\(^\text{53}\) To the extent that non-disclosure of negligently caused errors allows health care providers to avoid the lawsuits that might require them to pay patients, errors create a conflict of interest between physicians and patients that should be disclosed.

The problem of non-disclosure of error has been acknowledged, to some extent, in cases that toll the statute of limitations regarding malpractice where the physician conceals the error from the patient.\(^\text{54}\) In such cases, non-disclosure is viewed as misrepresentation\(^\text{55}\) or fraud.\(^\text{56}\) While most cases deal with physicians who have actively misled the patient,\(^\text{57}\) others adopt the stance that silence about an error can constitute constructive fraud. For example, in Koppes v. Pearson,\(^\text{58}\) a 1986 Iowa decision concerning a surgeon who allegedly negligently failed to remove all of a herniated disc from the plaintiff's back during surgery, the court recognized that ordinarily the party relying on the fraudu-

\(^{52}\) Id.  
"[I]f a person, liable to any action mentioned, fraudulently conceals the cause thereof from the person entitled thereto, or if a fraud is committed which entitles any person to an action, the action may be commenced at any time within 6 years after the person entitled thereto discovers that he has just cause of action. . . ."  
Id.  
\(^{55}\) The Lopez court stated:  
"We hold that the relationship between a doctor and his patient is of such a confidential and vital nature that an affirmative duty requiring the doctor to disclose to his patient fully the facts of the medical case does exist and that silence in this regard may be sufficient to infer a constructive misrepresentation."

Lopez, 279 A.2d at 124.  
\(^{57}\) Simcuski, 377 N.E.2d at 718.  
\(^{58}\) 384 N.W.2d 381, 382 (Iowa 1986).
ulent concealment to avoid a statute of limitations defense must show that the defendant affirmatively concealed facts from the plaintiff on which the plaintiff would predicate its cause of action.\textsuperscript{59} The court explained, however, that where a confidential or fiduciary relationship exists, the requirement of affirmative acts of concealment may be relaxed.\textsuperscript{60} The court further explained that the physician-patient relationship, because it is one of trust and confidence, "gave rise to duties of disclosure which may obviate the need for a patient to prove an affirmative act of concealment."\textsuperscript{61}

Physicians might be more inclined to disclose error if they realized that such action will not necessarily lead to a lawsuit. The Veterans Affairs (VA) Hospitals adopted a mandatory error disclosure approach to patients which has met with great success. In Lexington, Kentucky, the VA Medical Center began a policy of full error disclosure to patients in 1987.\textsuperscript{62} Rather than observing a spike in litigation and lawsuits, the VA hospital has actually realized savings with regard to legal expenses because of a greater number of settlements.\textsuperscript{63} The program appears "to have maximized only the number of patients who are justly compensated for injuries" rather than increasing the number of lawsuits.\textsuperscript{64}

Nondisclosure can lead to a patient's lack of trust in a physician, which itself might provoke litigation. A recent study found that 77% of doctors thought "physicians should be required to tell patients when errors are made in their care;"\textsuperscript{65} and 89% of patients agreed that doctors should be required to disclose medical error.\textsuperscript{66} However, another study found that patients overwhelmingly wanted almost all er-

\textsuperscript{59} Id. at 386.
\textsuperscript{60} Id.
\textsuperscript{61} Id. Interestingly, the Indiana courts have simultaneously narrowed and enlarged the doctrine of fraudulent concealment. While Indiana courts subscribe to the principle that silence is enough where a fiduciary relationship exists, these courts also conclude that when the relationship is terminated, the duty to inform is also terminated and the concealment ceases to exist. GYN-OB Consultants v. Schopp, 780 N.E.2d 1206, 1210 (Ind. Ct. App. 2003). See also Umolu v. Rosolik, 666 N.E.2d 450 (Ind. Ct. App. 1996); Carrow v. Streeter, 410 N.E.2d 1369, 1376 (Ind. Ct. App. 1989).

\textsuperscript{62} Albert W. Wu, Handling Hospital Errors: Is Disclosure the Best Defense? 131 ANNALS INTERNAL MED. 970, 971 (1999). In 1995, the Department of Veterans Affairs included in its policy manual that error disclosure is mandatory. See Steve S. Kraman & Ginny Hamm, Risk Management: Extreme Honesty May Be the Best Policy, 131 ANNALS INTERNAL MED. 963, 964 (1999).

\textsuperscript{63} Kraman & Hamm, supra note 62, at 964–67; Wu, supra note 62, at 971.
\textsuperscript{64} Wu, supra note 62, at 971.
\textsuperscript{65} Robert J. Blendon et al., Views of Practicing Physicians and the Public on Medical Errors, 347 NEW ENG. J. MED 1933, 1937 (2002).
\textsuperscript{66} Id.
rors disclosed, while physicians preferred to tell patients about minor medical errors, such as an incorrect insulin dosage, yet would "spin" their statements to reduce the potential negative connotation and might even withhold some details regarding the incident.\textsuperscript{67} Patients, on the other hand, wanted extensive information and many times felt as though something was gravely wrong with them due to the lack of information and felt that the lack of disclosure inhibited the trust relationship between the patient and physician.\textsuperscript{68} Physicians feared that disclosure would lead to litigation when it came to more serious errors and were much less likely to disclose information.\textsuperscript{69} A commentary about the study asserts that doctors must understand that often patients are seeking information solely for medical purposes from their doctors rather than for litigation purposes; therefore, error disclosure to the patient should become common practice to improve patient-physician relationships and reduce future medical error.\textsuperscript{70}

\textbf{B. Other Health Care Providers' Duty to Disclose}

A more expansive policy would require not only that the erring physician disclose his or her errors, but also that other health care providers who witness the error or its effects disclose as well.\textsuperscript{71} The policy reasons for such a disclosure are the same as for requiring disclosure on the part of the primary physician: to prevent physical and/or financial harm to the patient.\textsuperscript{72}

Some cases resulted in liability for secondary treating physicians for failure to disclose that the patient's health problem was caused by the


\textsuperscript{68} Id. at 1005.

\textsuperscript{69} Id. at 1004–05.

\textsuperscript{70} Id. at 1006.

\textsuperscript{71} See Joan Vogel & Richard Delgado, *To Tell the Truth: Physicians' Duty to Disclose Medical Mistakes*, 28 UCLA L. REV. 52, 57 (1980). The authors argue that such a duty to disclose would allow more patients to bring malpractice suits and would create "pressure on governmental agencies and medical societies to take effective action to reduce the incidence of malpractice. Spurred by the increased number of cases likely to be brought and their attendant publicity, existing regulatory mechanisms would gain new life." Id. at 61.

\textsuperscript{72} There are a series of cases in which physicians have been held to have a duty to assist patients in litigation. Such cases have involved situations in which, for example, the physician negligently understated a patient's injuries to a court, an adversary in litigation, or an insurer, thus causing the patient to receive a smaller settlement than he or she deserved. See, e.g., Brousseau v. Jarrett, 73 Cal. App. 3d 864 (1977) (allowing the plaintiff to proceed with his action for negligent misrepresentation of injuries to insurance company); Rosenthal v. Blum, 529 S.W.2d 102, 105 (Tex. Civ. App. 1975) (holding that plaintiff stated a cause of action for negligent misrepresentation of injuries to patient who was in the course of negotiating a settlement with an insurance company). See also Alexander v. Knight, 177 A.2d 142, 146 (Pa. Super. Ct. 1962) (affirming the granting of a new trial regarding physician's duty to aid the patient in litigation).
error of a previous physician. However, these cases have generally dealt with situations in which the subsequent physicians actively misled the patient.\(^{73}\)

Physicians who reveal the malpractice of their colleagues or testify against other physicians risk being boycotted and losing their malpractice insurance.\(^{74}\) In our study, some surgeons identified errors made by internists, but did not report those errors back to them because the surgeons were concerned that the internists would stop making referrals to the surgeons if their care was criticized. Registered nurses and other types of medical support staff, such as phlebotomists and primary care technicians are in a good position to witness and report medical error, but there is a strong disincentive to report these problems for fear of losing one’s job. For an effective secondary duty to disclose, it would be necessary to develop protections for health care providers who, in good faith, report the errors of their colleague. Analogous statutory protections have been developed for health care providers who reveal a colleague’s deficiencies to hospital quality assurance committees.\(^{75}\)

\section*{C. Hospital Liability for Physicians’ Errors Under Agency Principles}

Traditionally, physicians were considered self-sufficient in the field of health care and hospitals were not held liable for their mistakes. A peer review system was established that allowed doctors to review

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\(^{73}\) See, e.g., Sperandio v. Clymer, 563 S.W.2d 88 (Mo. 1978). Courts have little difficulty imposing liability on the witnessing health care provider where that health care provider has affirmatively acted to conceal the error. See, e.g., Morrison v. Acton, 198 P.2d 590 (Ariz. 1948); Adams v. Ison, 249 S.W.2d 791, 792 (Ky. 1952); Borderlon v. Peck, 661 S.W.2d 907 (Tex. 1983). For example, in Lopez v. Swyer, 279 A.2d 116, 119 (N.J. Super. Ct. App. Div. 1971), the plaintiff-patient, following a radial mastectomy for breast cancer, was referred by her family physician to a radiologist for a course of radiation therapy. \textit{Id.} at 119. The plaintiff-patient made repeated inquiries regarding her condition and was repeatedly falsely reassured by both the radiologist and family physician. \textit{Id.} at 120. Approximately five years after radiation therapy, the plaintiff-patient learned that her injuries were probably the result of the radiologists’ negligence. \textit{Id.} at 121. The plaintiff-patient brought suit alleging negligence, fraud, and conspiracy against her family physician, his associates, and the radiologist. \textit{Id.} at 120. The court not only found that there was sufficient proof to uphold the plaintiff-patient’s fraud claim against the witnessing physician (because of the fiduciary nature of the physician-patient relationship) but also held that there was sufficient proof to uphold the independent conspiracy claim. \textit{Id.} at 124–25.

\(^{74}\) Vogel & Delgado, \textit{supra} note 71, at 60.

\(^{75}\) 225 ILL. COMP. STAT 60/5 (1988) (granting immunity from civil liability for peer review and quality assurance activities unless those activities involve willful or wanton misconduct). Similarly, an Illinois statute grants immunity from prosecution and from civil liability to those people who make good faith reports to the Medical Disciplinary Board. 225 ILL. COMP. STAT. 60/23 (1997).
other physicians, thereby excluding laymen from determining the credentials and competence of the physicians. Courts upheld this system for many years.

One way to encourage greater efforts to prevent errors is to put greater pressure on health care institutions (in addition to individual providers) to identify and deal with errors. This could be done by making the hospital liable under agency principles for physicians' errors. Agency liability might lead hospitals to establish mechanisms to make greater use of the information about errors identified in rounds and clinical meetings. In the prospective observational study, less than 1% of errors identified stimulated actions to prevent future errors.

At present the general legal rule is that hospitals are liable for their employees' actions, but not for those of attending physicians, who are considered to be independent contractors. However, if the hospital has made it appear that a particular physician is its agent, the hospital can be held liable. At least twenty-two states hold that agency princi-

76. A variety of cases have begun to hold hospitals liable, under various theories, even where the physicians were independent contractors. See, e.g., Fletcher v. S. Peninsula Hosp., 71 P.3d 833, 838 (Alaska 2003) (allowing the plaintiff's action against the hospital to proceed under a theory of corporate negligence); Purcell v. Zimbelman, 500 P.2d 335 (Ariz. Ct. App. 1972) (affirming the judgment against the hospital for negligence in not acting upon two previous instances of claimed malpractice by the same, independent contract, staff surgeon); Shands Teaching Hosp. & Clinic, Inc v. Juliana, 863 So. 2d 343, 347 (Fla. Dist. Ct. App. 2003) (affirming a finding of a breach of duty arising from the contract between the hospital and its patients, notwithstanding the independent contractor status of the negligent hospital employee); Darling v. Charleston Cnty. Hosp., 211 N.E.2d 253 (Ill. 1965) (affirming a jury's finding of negligent hospital treatment where plaintiff lost part of his leg from lack of circulation in the cast that the doctor applied and the nurses failed to properly check); Arrington v. Galem-Med Inc., 838 So. 2d 895, 899 (La. Ct. App. 2003) (affirming a judgment against the hospital where the hospital had the right to control and supervise, as well as apparent authority over, the independent contractor doctor); Butler v. Domin, 15 P.3d 1189, 1197 (Mont. 2000) (allowing the plaintiff's action against the hospital to proceed because there was a genuine issue of material fact as to whether the hospital intentionally or negligently led the plaintiff to believe that one of the doctors was its agent); Clark v. Univ. Hosps. of Cleveland, No. 78854, 2001 WL 995104 (Ohio. Ct. App. Aug. 30, 2001) (upholding as proper the trial court's instruction to the jury that the hospital could be held liable under the doctrine of agency by estoppel for the negligence of independent medical practitioners practicing in the hospital); Jennison v. Providence St. Vincent Med. Ctr., 25 P.3d 358 (Or. Ct. App. 2001) (affirming hospital's liability under an apparent agency theory); Thompson v. Nason Hosp., 591 A.2d 703 (Pa. 1991) (allowing the plaintiff's action against the hospital to proceed because there was a genuine issue of material fact as to whether the hospital provided negligent supervision of the patient's medical care); Moser v. Heistand, 681 A.2d 1322 (Pa. Super. Ct. 1996) (holding that sovereign immunity precluded an action against the defendant based on corporate liability); Capan v. Divine Providence Hosp., 430 A.2d 647, 649 (Pa. Super. Ct. 1980) (remanding for a new trial and allowing an action against the hospital under a theory of ostensible agency).

pies can be used to hold hospitals liable.\textsuperscript{78} For example, the Supreme Court of Pennsylvania noted that when an independent physician appears to be held out as a hospital employee, it is reasonable for the patient to assume that the physician is an employee of the hospital:\textsuperscript{79}

\[A\] patient today frequently enters the hospital seeking a wide range of hospital services rather than personal treatment by a particular physician. It would be absurd to require such a patient to be familiar with the law of respondeat superior and so to inquire as to each person who treated him whether he is an employee of the hospital or an independent contractor.\textsuperscript{80}

Patients are likely to be unaware of the existence of a contractual relationship that exists between a doctor and a hospital and it is unreasonable to expect knowledge of such. Some states recognizing hospital liability under agency principles, though, require that the patient demonstrate that he or she detrimentally relied on the hospital's representation of the physician as its agent.\textsuperscript{81}

\textbf{D. Corporate Liability as Applied to Hospitals}

Hospital liability for physicians' errors has also been established under the doctrine of corporate liability. This doctrine encompasses a direct duty on the part of hospitals to patients regarding the selection of physicians and the monitoring of care. Hospitals have a duty to use due care in the granting of hospital privileges to physicians.\textsuperscript{82} There may also be liability in some cases for retaining physicians in situations where the hospital knew or should have known that the physician was not competent. Arguably, this duty could be extended to hold hospitals liable for not establishing more efficient mechanisms for identifying errors or for using the information about errors that has been identified in rounds and clinical meetings.

\textsuperscript{78} Helaine W. Heydemann et al., \textit{Medical Malpractice}, in \textsc{Treatise on Health Care Law} §§ 12.02[3], 12.24 (Michael G. Macdonald et al. eds., 2003). These states are Alaska, Arizona, California, Delaware, Florida, Georgia, Illinois, Kentucky, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Washington, Wisconsin, and Wyoming.


\textsuperscript{80} Id.

\textsuperscript{81} See, e.g., Clark v. Southview Hosp. & Family Health Ctr., 628 N.E.2d 46 (Ohio 1994).

\textsuperscript{82} Corleto v. Shore Mem'l Hosp., 350 A.2d 534 (N.J. Super. Ct. Law Div. 1975) (personal liability of hospital board members for failing to properly accredit). \textit{See also} Johnson v. Misericordia Cmty. Hosp., 301 N.W.2d 156 (Wis. 1981). In one interesting case, the hospital was found liable even though the patient had selected the physician herself months before the hospitalization. In that case, however, the claim was that she selected him in part because he told her he had staff privileges at the hospital. This was a particularly egregious case because the "physician" was actually a fugitive drug dealer merely posing as a physician. \textit{See generally} Insinga v. LaBella, 543 So. 2d 209 (Fla. 1989).
Such a direct liability would give hospitals an incentive to prevent incompetent practice and otherwise ensure the quality of care provided at its institution. The hospital may be able to identify and correct physicians' deficiencies before they cause serious harm to a patient. Certainly an early warning system is preferable to waiting for the rare event of a malpractice suit based on serious injury to a patient as a means to evaluate physicians' care. And, as one California court has pointed out, "the competent selection and review of medical staff is precisely the type of professional service a hospital is licensed and expected to provide."

At least twenty-eight states have adopted some form of corporate liability. The corporate liability of the hospital for selection and monitoring of physicians has even been codified in some jurisdictions. In Florida, for example, a statute provides that "[a]ll health care facilities . . . have a duty to assure comprehensive risk management and the competence of their medical staff and personnel through careful selection and review, and are liable for a failure to exercise due care in fulfilling these duties."

Hospitals also have a duty to adopt adequate rules—for example, rules for the handling of medications or for the transmission of patient information. In one case, a radiologist's report of a possible skull fracture was not transcribed for two days; in the meantime, the patient died. The hospital was found liable for not having a system in place of transcription so that radiology reports would go promptly to the treating physician or, if that physician was not available, to the hospital administration.

90. Id.
91. Id. at 235.
E. Holding Hospitals Liable Instead of Physicians

The theories of ostensible or apparent agency and of corporate liability allow patients to hold hospitals jointly liable, in certain instances, with physicians and other health care providers. But an alternative would be to hold the hospital liable instead of the health care provider when the health care provider commits malpractice. This broader concept of enterprise liability, which was advocated in a report of the American Law Institute (ALI), would make the hospital liable for all negligent errors of physicians delivering services within the institution.\footnote{American Law Institute, Enterprise Responsibility for Personal Injury Vol. I and II (1991) [hereinafter ALI Report]. This would change the picture considerably, since "roughly three-quarters of all malpractice claims are now brought against physicians and other individual providers." 2 ALI Report 115 (citing U.S. Gen. Accounting Office, Study of Medical Malpractice: Characteristics of Closed Claims in 1984, at 52–53 (1987)). The hospital would only be responsible for accidental patient injuries, not intentional ones. Id. at 117.}

In other areas of society, liability is focused on the enterprise, not individual actors within it. If a physician worked for a drug company and committed negligence in the course of developing a drug, the drug company could be sued. The ALI report points out that no one expects pilots to have to obtain their own insurance at a higher cost than flight attendants, even though their activities pose more risks.\footnote{Id. at 118 n.14.} Instead, it is assumed that the airline will be liable, even with respect to pilot errors.\footnote{Id.}

A system of enterprise liability would create incentives for hospitals to better monitor and respond to problems in the delivery of health care in their institutions. Moreover, by having the hospital, rather than multiple malpractice insurance companies, handling the cases, the hospital may begin to see patterns of errors and devise means for systematic change.

Enterprise liability would also create a more equitable distribution of insurance premiums. The reason that some practitioners in high-risk practice fields such as neurosurgery have to pay such high premiums despite a clean record\footnote{See Neil Versel, High Malpractice Premiums Send Specialists Reeling, 6 Modern Physician 24, 24 (2002).} is that the pool of such practitioners in their geographic area is small. With this alternative approach, physicians would not have to pay premiums since the hospitals themselves

\footnote{Id. at 118 n.14.}
would self-insure or purchase insurance. The hospitals would be better able to distribute the cost of that insurance.  

Holding hospitals instead of physicians liable would also have some advantages in terms of savings in litigating cases. With a single defendant, the cost of litigation would be less and there would be less delay due to finger-pointing, because each of the health care providers involved in the care of a particular patient would no longer have an incentive to blame the error on someone else.

Some policy changes would be necessary for such a system to operate fairly. Changes in pricing of medical services would need to be considered so that doctors do not obtain a windfall. To the extent that part of the current price of a physician’s services is due to the cost of the physician’s malpractice insurance premiums, prices should be reduced. Hospital prices, on the other hand, should rise accordingly.

A change would also be necessary to ensure a mechanism for identifying negligent physicians to the National Practitioner Data Bank (Data Bank). Currently, physicians who are successfully sued by patients are listed in the Data Bank so that there is a central repository for hospitals to turn to in the course of their decisions about whether or not to grant staff privileges. If physicians are no longer named in suits, there will need to be an alternative mechanism for providing their names to the Data Bank.

The greatest policy change necessary if enterprise liability were adopted would be the simultaneous abolishment of any immunity doctrines (such as charitable immunity or sovereign tort immunity). By abolishing such immunity, certain patients who could have sued their physicians but, under enterprise liability, only have recourse against the hospital, would not be deprived of their cause of action because of the hospital’s immunity from suit.

When hospitals first came into existence, they were protected from suit by the doctrine of charitable immunity. The rationale for the doctrine was that hospitals, as charitable institutions, were financed by donations intended for funding fund health care rather than litigation.

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96. The cost of malpractice insurance is approximately 1% of the total health care cost in this country. Id. at 117.

97. About one quarter of claims have multiple defendants. See U.S. GEN. ACCOUNTING OFFICE, supra note 3, at 28.


99. This rule was in effect almost universally in the United States until the 1940s. See generally Arthur F. Southwick, Hospital Liability: Two Theories Have Been Merged, 4 J. LEG. MED. 1 (1983).
The chipping away at the charitable immunity doctrine began once insurance became available to hospitals. While liability insurance was virtually unknown in the nineteenth century, risk spreading through insurance is now seen as part of the normal cost of doing business. Charitable immunity was curtailed in cases where hospitals were held liable for what were considered to be "administrative acts." At the same time, the institutions were not held liable for "professional acts." In twenty-eight states and the District of Columbia, charitable immunity has been abolished.

Another immunity doctrine that would need to be abolished if enterprise liability were adopted is sovereign tort immunity. Under the doctrine of sovereign immunity, the federal and state governments are not liable for the tortious acts of their employees. The doctrine of governmental immunity provides a similar immunity to local governmental units.

Despite trends to abolish sovereign immunity in other institutional settings, there is still substantive immunity for hospitals operated by governmental units. A number of states provide local governmental

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103. At common law, the immunity acted more to deny jurisdiction in the King's courts than to deny relief completely. Muskopf v. Corning Hosp. Dist., 359 P.2d 457, 458 n.1 (Cal. 1961) (superseded by statute). There was, however, jurisdiction for equitable relief in the court of Exchequer. Id. Thus, the doctrine allowed substantial relief and did not produce the harsh results which occur today. Id. at 458. That this doctrine became the basis for a rule that federal and state governments in the United States did not have to answer for their torts and the torts of their employees has been called "one of the mysteries of legal evolution." Id. at 459 (quoting Edwin M. Borchard, Governmental Responsibility in Tort, 34 YALE L.J. 1, 4 (1924)). The Illinois Supreme Court remarked "that in preserving the sovereign immunity theory, courts have overlooked the fact that the Revolutionary War was fought to abolish that 'divine right of kings' on which the theory is based." Molitor v. Kaneland Comm. Unit Dist. No. 302, 163 N.E.2d 89, 94 (III. 1959).

104. The doctrine of immunity for local governmental units originated in the English case of Russell v. Men of Devon, 100 Eng. Rep. 359 (1788). This tort action against an unincorporated county was disallowed on two grounds: first, since the county was unincorporated, there was no fund out of which the judgment could be paid; and second, the court concluded as a matter of policy that "it is better that an individual should sustain an injury than that the public should suffer an inconvenience." Muskopf, 359 P.2d at 459 (citing Russell, 100 Eng. Rep. at 362). The Russell rule, first brought to the United States by Mower v. Inhabitants of Leicester, 9 Mass. 247 (1812), became the general American rule. Muskopf, 359 P.2d at 459. The Massachusetts court adopted the Russell rule despite the fact that the county was incorporated, could sue and be sued, and possessed a corporate fund out of which a judgment could be satisfied. Id. at 459 (citing Mower, 9 Mass. at 249).
units with immunity for the operation and maintenance of hospitals.\textsuperscript{105} Moreover, for those states that do not specifically protect hospital operations, hospital operations are generally characterized as discretionary\textsuperscript{106} or governmental\textsuperscript{107} functions thereby protected by immunity.\textsuperscript{108} In addition to these approaches, one state (Texas) predicates liability on the "condition or use of tangible personal or real property."\textsuperscript{109}

The effects of the legal doctrines on patients' right to sue can be illustrated by applying the various legal theories to the incidents in the observational study.\textsuperscript{110} Reflecting back on the data from the prospective observational study, there were 332 patients who suffered errors due to the actions of an identifiable health care provider or hospital employee.\textsuperscript{111} Under independent contractor theory, 92% of those patients would clearly be able to sue, while the 8% whose errors were attributable to an attending physician would not be able to sue the hospital. Moreover, some of the 92% also suffered errors due to attending's actions. These errors might have been more harmful, but the patient would only be allowed to sue from the harm of the employees' actions, not the attending's actions.

If a broad charitable immunity covered the hospital, no patients would be allowed to sue the hospital. If a more limited charitable immunity were in place, distinguishing between administrative and professional acts, 1.5% of the patients who were victims of error in the prospective observational study would have a right to sue.\textsuperscript{112}

Similarly, if a broad sovereign or governmental immunity were in place, no patients would be allowed to sue the hospital. If the more limited Texas model were in place, only 15% of the patients in the observational study would be able to bring suit to redress their inju-

\textsuperscript{105} See, e.g., MINN. STAT. ANN. § 466.03(11) (2001) (immunity for treatment at a municipal hospital where "reasonable use of available funds has been made to provide care").


\textsuperscript{107} See, e.g., State ex rel. Bd. of Trustees, 843 S.W.2d 353, 359 (Mo. 1992) (stating that "the operation of a hospital by a city has traditionally been held to be governmental").

\textsuperscript{108} Twenty-two states still have some form of government immunity for government hospitals. E.H. Schopler, Annotation, Immunity from Liability for Damages in Tort of State or Governmental Unit or Agency in Operating Hospital, 25 A.L.R. 2d 203 (1997).

\textsuperscript{109} TEX. CIV. PRAC. & REM. CODE ANN. § 101.021 (1997).

\textsuperscript{110} See infra app. A, fig. 6.

\textsuperscript{111} A total of 480 patients suffered errors. However, data is available about the identity and position of the person causing the error for only 332 patients.

\textsuperscript{112} Eighty-five percent would not have a right to sue. The remaining 13.6% suffered errors caused by administrative acts and professional acts. Thus, their ability to bring suit would depend on which errors were linked to the patient's injuries.
This foreclosure is a consequence of the Texas state legislature's decision to predicate liability on the involvement of tangible property.

VIII. CONCLUSION

Hospitals are high-risk institutions, with nearly half of surgical patients falling victim to errors in their care. The mechanisms for responding to errors tend to focus on the errors caused by individuals rather than those caused by the institution and are deficient in terms of preventing errors.

The formal monitoring systems in place to bring errors to the attention of the hospital (through occurrence reports and potential claim files) did not capture all of the serious errors identified in the rounds and meetings. Moreover, the occurrence reports failed to capture errors that occurred at the key junctures of diagnosis and surgery.

The types of errors that could be reported on an occurrence report form—and thus be monitored in written form—were not necessarily the ones with the most serious consequences for patients or even the most potential for litigation. For example, 91% of the errors reported on those forms involved no injury to the patient.

The hospital under study had a committee in place, the Patient Safety Committee, to deal with issues of quality where future harm to patients could be prevented. The institution also had various risk management activities. However, information about problems in care identified at clinical meetings was rarely transmitted to the entities charged with patient safety or risk management.

Health care providers candidly discuss errors in patient care at work rounds and clinical meetings. Such discussions are viewed as crucial to a teaching hospital's joint missions of providing patient care and training physicians and nurses. The willingness to talk about mistakes in patient care in those settings, however, does not necessarily translate into a willingness to use information about those events to structure systematic changes to prevent future errors or to facilitate an institutional response to a patient who has been harmed. In the long run, however, understanding and responding to information about errors that are identified at work rounds and clinical meetings may help improve the quality of care, minimize the number of suits, and demon-

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113. Under the more limited Texas model, 36.3% would not be able to sue. An additional 48.6% had both errors that involved tangible property and errors that did not. Depending on which errors were seen as the proximate cause of the injury, these additional patients might not be able to sue.
strate that a hospital is taking seriously the harm to patients caused by departures from optimal care.

Part of the difficulty is that physicians think of themselves as independent contractors, as in the early days of the profession. But the delivery of health care services has changed so drastically in the past two decades that it is counterproductive in terms of health care quality for physicians to claim independence and to assert individual fiefdoms. The professionals in a modern hospital are interdependent—they need to use hospital equipment, supplies from the pharmacy, and information from other medical and surgical services, as well as other hospital entities. As the prospective observational study points out, one quarter of the errors are caused by these interactive and administrative aspects of hospital life. The human costs and the financial costs of error are high. A 1997 study pegged the costs of drug errors in hospitals to $1.56 billion in hospital costs alone.\textsuperscript{114} If follow-up costs related to outpatient care and disability were included, it could be as much as $79 billion annually.\textsuperscript{115}

Perhaps by making hospitals responsible for all errors, there can be a more uniform system in place to deal with both errors due to actions of individual health care providers and errors due to problems of the larger hospital system. This study found that currently very little information about either type of error was passed on to the hospital administration, the Patient Safety Committee, or the risk management personnel. Adopting new theories of liability would create a greater incentive for providers and hospitals to monitor errors, thus providing the foundation for efforts to prevent errors.

\textsuperscript{114} See generally David C. Classen et al., \textit{Adverse Drug Events in Hospitalized Patients: Excess Length of Stay, Extra Costs, and Attributable Mortality}, 277 JAMA 301 (1997).

\textsuperscript{115} \textit{Id.} at 304.
Distribution of Errors

- More than 5 Errors: 10.2%
- 2-5 Errors: 20.5%
- 1 Error: 15.1%
- No Errors: 54.2%

Based on the care of 1047 patients

Figure 1
Categories of Errors

All Errors (2183)  Serious Errors (462)

FIGURE 2

General Clear Causes of Errors

FIGURE 3
Mechanisms of Error Awareness

Error Type

Information about the 13 Claiming Patients

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<tr>
<th>Patient</th>
<th>Error Discussed at Meeting</th>
<th>Serious Error Discussed at Meeting</th>
<th>Complication in Record</th>
<th>Occurrence Report</th>
<th>Complaint Letter</th>
<th>Medical Record Request</th>
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Figure 6