Communicating With Patients About Medical Errors
A Review of the Literature
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Background: Ethical and professional guidelines recommend disclosure of medical errors to patients. The objective of this study was to review the empirical literature on disclosure of medical errors with respect to (1) the decision to disclose, (2) the process of informing the patient and family, and (3) the consequences of disclosure or nondisclosure.

Methods: We searched 4 electronic databases (MEDLINE, CINAHL, PsycINFO, and Social Sciences Citations Index) and the reference lists of relevant articles for English-language studies on disclosure of medical errors. From more than 800 titles reviewed, we identified 17 articles reporting original empirical data on disclosure of medical errors to patients and families. We examined methods and results of the articles and extracted study designs, data collection procedures, populations sampled, response rates, and definitions of error.

Results: Available research findings suggest that patients and the public support disclosure. Physicians also indicate support for disclosure, but often do not disclose. We found insufficient empirical evidence to support conclusions about the disclosure process or its consequences.

Conclusions: Empirical research on disclosure of medical errors to patients and families has been limited, and studies have focused primarily on the decision stage of disclosure. Fewer have considered the disclosure process, the consequences of disclosure, or the relationship between the two. Additional research is needed to understand how disclosure decisions are made, to provide guidance to physicians on the process, and to help all involved anticipate the consequences of disclosure.

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HEN MEDICAL ERRORS occur, effective physician-patient communication is critical. Ethical and professional guidelines make clear that physicians have a responsibility to disclose medical errors,1,2 and recent standards link disclosure of unexpected outcomes to hospital accreditation.4 The National Patient Safety Foundation’s statement of principle on disclosure of health care injuries urges health care professionals and institutions to be forthcoming about health care injuries and errors and to provide truthful and compassionate explanations to patients and families when errors occur.5 The literature is replete with discussions, commentaries, letters, and editorials on disclosure of medical errors to patients, many of which argue for disclosure on ethical and pragmatic grounds.

The objective of this study was to review the empirical literature on disclosure of medical errors to patients. We also examined the evidence regarding the decision to disclose, the process of disclosing the error to the patient and family, and the consequences of disclosure or nondisclosure.

METHODS

SEARCH STRATEGY

We conducted searches of 4 electronic databases (MEDLINE, CINAHL, PsycINFO, and Social Sciences Citations Index) through March 31, 2003, for English-language articles with empirical data related to disclosure of medical errors. For the MEDLINE search, we used the subject headings truth disclosure or disclosure in combination with medical errors, medication errors, diagnostic errors, or iatrogenic disease; we also combined the disclosure terms with risk management and with malpractice in combination with physician-patient relations or hospital-patient relations. We modified terms as needed for the remaining 3 databases, selecting parallel terms where possible. As primary articles were identified, we reviewed the reference lists for additional articles. We also reviewed the reference lists of published reviews and commentaries on disclosure of medical errors.6-19

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STUDY SELECTION

Articles reporting original empirical results of systematic research relating to disclosure of medical errors to patients and families were selected. We used 3 selection criteria. First, we required content on disclosure of medical error to patients or families, using the Institute of Medicine’s definition of medical error. If it was not clear whether the event or item considered in the study met this definition (eg, if it was not explicitly stated that the event was preventable), we included the study if the researchers or participants referred to the event as an error, mistake, accident, or negligence. We excluded studies of disclosure if the focus was nonpreventable adverse events, as well as studies of disclosure of other sorts of information, such as human immunodeficiency virus status or genetic testing results. This criterion (disclosure to patients and families) also excluded studies of internal reporting, public reporting, or reporting to professional or regulatory organizations. Our second criterion was that the study report original empirical data; this excluded personal accounts, reviews, letters, editorials, opinion pieces, and commentaries. Finally, we excluded articles in veterinary, dentistry, trade, or medical technicians’ journals; unpublished manuscripts; legal decisions; and popular press articles.

SYNTHESIS OF THE LITERATURE

Included studies were abstracted for study design, data collection procedures, study population, and response rate, where applicable. Evaluations of interventions were classified using the rubric described by Campbell and Stanley. We also abstracted whether medical error was defined and, if so, how.

Our initial review of the studies led us to conceptualize disclosure as consisting of 3 stages: (1) the decision to disclose that an error occurred, (2) the process of disclosing the error to the patient and family (given the decision to disclose), and (3) the consequences of disclosure or nondisclosure. We therefore categorized each study as providing evidence on 1 or more of these stages.

RESULTS

Of the 825 articles identified through searches of the electronic databases, 9 met our inclusion criteria. Eight additional articles were identified through hand searching. Key characteristics of the 17 articles reviewed are summarized in the Table.

DECIDING TO DISCLOSE

Studies using retrospective self-report by physicians and trainees suggest that disclosure often does not occur. During interviews about how mistakes were handled, trainees mentioned the patient or family in only 6% of the cases. When queried about their most significant medical mistake in the last year, 24% of trainees had discussed the error with the patient or family, and a similar rate (21%) was found in a later study of physicians. A survey of hospital risk managers in the United States found that disclosure of adverse events (preventable and nonpreventable) occurred a mean of 7.4 times per 10,000 admissions; 65% of managers indicated that hospital practice was always to disclose death or serious injury, and 37% indicated that their practice was always to disclose serious short-term harm.

Reports of patients and relatives also suggest low rates of disclosure. A recent national survey found that, of those who believed that they had experienced an error in their care or in the care of a family member, approximately 30% had been told by the health professional involved that an error had been made.

When asked to predict whether they would disclose under different circumstances, physicians’ responses are variable. Physician focus group participants described specific situations in which they would not disclose; some indicated that there was no need to disclose if the harm was trivial or if the patient was unaware of the error. A study of European physicians on whether they would disclose an “iatrogenic incident (avoidable mistake)” found that 32% would disclose what happened, while 63% would minimize the incident. In response to vignettes describing medical errors, 95% of physicians and physician trainees predicted that they would disclose a medication error that resulted in injury, while 84% would disclose the same error if it resulted in death. In a separate study using a different medication error vignette also resulting in death, approximately 50% of physicians indicated that they would admit the error. Hospital risk managers reported that disclosure would be more likely to occur for a medical error leading to a serious adverse event than for an error resulting in a minor adverse event (90% vs 80%). In addition, 53% of risk managers reported a lower likelihood of disclosing preventable harm than nonpreventable harm.
Physicians agree that patients should be informed about medical errors. With respect to the iatrogenic incident (avoidable mistake) noted in the previous paragraph, 70% of responding European physicians believed that they should provide details of such an event. In a survey of US physicians, 77% responded that physicians should be required to tell patients when errors are made in their care. The same survey presented respondents with 1 of 2 vignettes. One vignette described a prescribing error resulting in death. In this instance, 90% of physicians believed that the prescribing physician should disclose the error; fewer thought that the nurse involved (70%) or the hospital (71%) should disclose. In response to the same error resulting in a rash but with full recovery, 85% believed that the physician should disclose, while 75% thought that the nurse should disclose and 60% believed that the hospital should disclose.

Studies of patient and family preferences for disclosure have found strong support for disclosure. In focus group discussions, patients were unanimous in their desire to be told about any error that caused harm, although not all would want to know about errors that did not cause harm. A national survey found that 89% of the public believed that physicians should be required to tell patients when errors are made in their care. A smaller study of emergency department patients found that 76% would want to be informed immediately if "something did go wrong in the administration of [their] health care" and 88% favored full disclosure of the error's extent.

Similar results have been reported with respect to patients' responses to vignettes. When presented with a...
vignette describing an adverse event (complications during eye surgery), 92% of patient respondents favored disclosure, and 81% favored receiving detailed information on adverse consequences.34 Another vignette-based study20 found that 98% of patients wanted some acknowledgment that an error had been made, even when no harm to the patient occurred. Similar rates were found in another vignette-based study,32 in which respondents were presented with 1 of 2 different medication error vignettes. For the error resulting in death, 95% of the public believed that the prescribing physician should disclose the error; 84% thought that the hospital should disclose, and 57% believed that the nurse should disclose. For the same error resulting in a minor event (rash), 95% of patients wanted some acknowledgment that an error had been made, even when no harm to the patient occurred. Similar rates were found among patients and family members pursuing medical negligence claims: 61% of those who had received an explanation of the incident accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology.

In a national survey of physicians and the public, approximately one third (34% of physicians and 33% of the public) of all respondents who had experienced an error in their care or in the care of a family member reported receiving an apology from the health care professional involved.32 Of patients who believed that they had been injured as a result of their medical treatment, 21% reported that staff accepted responsibility for what had happened, and 27% reported that they had been offered an apology.27 Somewhat lower rates were reported in a subsequent study38 of patients and relatives pursuing medical negligence claims, in which 13% reported that the responsibility for the incident was fully or partly accepted and 15% reported a full or partial apology. A review of depositions of malpractice plaintiffs found that failure to provide an explanation was cited as a reason for pursuing legal action in 10% of the depositions.31 Explanations did not necessarily result in patient satisfaction. Among patients who believed that they had been injured and were seeking advice, 82% were dissatisfied with the amount of information they received, 67% were dissatisfied with the clarity, and 63% were dissatisfied with the accuracy.27 In addition, 63% believed that the explanation had been given unsympathetically, and 44% indicated that they had had no opportunity to ask questions. Similar rates were found among patients and family members pursuing medical negligence claims: 61% of those who had received an explanation of the incident reported that the explanation had been given unsympa-

THE DISCLOSURE PROCESS

In response to a national survey, hospital risk managers reported that the most common elements of the disclosure process were explanations (92%), an undertaking to investigate the incident (87%), an apology (68%), and an acknowledgment of harm (66%).35 Less frequently reported were offering to share the results of the investigation (41%) and assuming responsibility for harm (33%). Eighty-two percent of risk managers reported that hospitals offered to pay the costs of associated care.

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thetically, 11% were satisfied with the amount of information provided, 20% were satisfied with the accuracy, and 24% were satisfied with the clarity of the information. Timing also appears to be of concern to patients. Of patients who believed that they had been injured as a result of medical treatment, 20% reported that they had waited longer than 6 months for an explanation. Of those pursuing medical negligence claims, only 21% reported that they had received explanations within a few days of the incident, and 37% never received an explanation.

There are few data from physicians on the disclosure process. Physician focus group participants reported that they would be likely to choose their words carefully and to avoid explicitly stating that an error had taken place. Most indicated that they would want to apologize, but would worry that an expression of regret might be construed as admission of legal liability. In contrast, patients in focus groups expressed a desire to be told what had happened and why, the implications of the error for their health, how the problem would be corrected, and how future errors would be prevented. Furthermore, they would want the physician to be forthcoming about the error, rather than have to ask a lot of questions to get the information. Patients also wanted assurances that they would not incur financial liabilities because of error. Vignette-based surveys have also assessed patient preferences. When presented with vignettes of error resulting in no harm or moderate harm, more than 70% of patients indicated that they would want to discuss the error with the physician involved; for the serious error vignette, 80% would want to discuss it with another physician. Fourteen percent indicated that they would want a referral to another physician if the error did not result in injury; this percentage increased as the injury became more serious, to approximately 40% for a moderate error and approximately 65% for a severe error. Fewer than 10% reported that they would want financial compensation following an error without harm; this increased to approximately 20% following a moderate error and to nearly 60% following a severe error.

CONSEQUENCES OF DISCLOSURE

None of the studies examined herein provided evidence of a causal relationship between the occurrence (or nonoccurrence) of disclosure and litigation, or between specific elements of the disclosure process and litigation. Given that caveat, studies of those taking or considering legal action provide some insight. Of family members involved in malpractice claims alleging perinatal injury, 20% indicated that they were seeking information, and 24% indicated that they sought legal action when they perceived that there had been a cover-up or that the physician had failed to be completely honest, had allowed them to believe things that were not true, or had intentionally misled them; 32% had believed that the physician involved would not talk to them or answer their questions. A study of malpractice plaintiffs’ depositions identified physician-patient relationship issues in 71% of the depositions. Although it is not clear whether issues with the physicians existed before the adverse outcomes, 32% of depositions referred to physician desera
Studies of patients and families considering or undergoing, the patients served, and the legal status of providers are encouraging, but the unique characteristics of the VA system, the patients served, and the legal status of providers within that system make it questionable whether similar results would be obtained in other settings. Studies of patients and families considering or involved in litigation suggest the importance of explanations and apologies, but findings from such studies are suggestive rather than conclusive, and correlation and causation are not yet established. Other research findings suggest that the characteristics of the injury, the physician-patient relationship before the adverse event, the physicians’ communication skills, and the patients’ financial status are influential in litigation decisions. Evaluation of the relative importance of each of these factors and the specific components of disclosure should be a goal for future research. Fear of malpractice litigation is not the only barrier to disclosure; physicians may also anticipate patient distress, patient attrition, damage to their reputation, license revocation, loss of privileges, and other consequences. Future research should seek to determine the extent to which such concerns are in fact barriers and then evaluate methods for minimizing the likelihood of anticipated negative consequences.

Accompanying the need for research on the relationship between decision, process, and consequences is the necessity to investigate the circumstantial variables that affect all 3 stages of disclosure. Vincent et al have proposed a framework for understanding and responding to adverse events, suggesting the headings of institutional, organization, and management, work environment, team, individual staff member, task, and patient. Other researchers have stressed the importance of the national, regional, and professional culture. We believe that variables in all of these categories are important to disclosure and that further work is needed to develop a coherent framework for investigating the influence of these types of variables on disclosure. Such a framework will facilitate systematic examination of the interrelationships between variables and will help in the development of guidelines for practitioners.

The Institute of Medicine’s report defines an adverse event as “an injury caused by medical management rather than the underlying condition of the patient.” Adverse events attributable to error are considered preventable (although by definition not all medical errors result in adverse events), and negligent adverse events are a subset of preventable adverse events. In practice, there is likely to be considerable uncertainty as to causality and preventability. Trained physicians reviewing medical records have displayed poor to moderate agreement on whether an adverse event occurred and whether that occurrence was preventable. Although a treating physician may have greater knowledge of the patient’s condition than a reviewer working from the medical record, determination of causality and preventability may be as difficult or more so. In practice, such uncertainty complicates the disclosure decision. Premature disclosure may cause unnecessary distress, but waiting for an investigation to be completed may increase patient anger and frustration, especially when causality is obscure to the patient and family.

Difficulties in defining and identifying medical errors in practice are paralleled by the different definitions of medical errors used in the studies reviewed herein. Each definition or lack of definition of medical error in a questionnaire or interview study must be considered in interpreting results. If the term medical error is not defined, inferences about group differences may not be valid. For instance, some patients include rudeness or poor service quality as medical errors, events that most physicians would not include. The use of clear, explicit definitions should increase the likelihood that all respondents are referring to the same class of events. Case vignettes ensure that all respondents are referring to the same event and eliminate the need for the respondent to decide whether an error has occurred. However, the case details will influence responses, so that conclusions based on a specific vignette are not necessarily generalizable, and inferences about attitudes or behaviors regarding disclosure in general may not be justified. Future research should attempt to identify which components of case vignettes influence responses, not only to facilitate cross-study comparisons but also to better understand and predict responses to disclosure of actual errors.

One important limitation to the research considered herein is that most of the studies reported participants’ recollections of behaviors or events or predictions about future behaviors. The conclusions of such studies are predicated on the assumption that reports or predictions are related to participants’ behavior in circumstances of actual errors, but we found no tests of this assumption. Researchers should examine the extent to which errors in recall or prediction occur, as well as whether the study setting introduces a bias. Patients and physicians are likely to have strong emotions and beliefs about disclosure of medical errors and are likely to be sensitive to the explicit or implicit social context of data collection. Respondents are likely to filter their responses to meet social norms, especially in the context of focus groups or nonanonymous interviews or questionnaires. For physicians, knowledge of ethical standards may result in reporting more “correct” behavior; for patients, especially those involved in legal action, expectations and beliefs about the legal process may influence reporting. Future research should examine the accuracy of self-reports and predictions in this area.

Many of the studies reviewed herein drew from small, circumscribed populations, and many reported poor response rates; both issues need to be addressed in future research. When the study population is limited (eg, drawn from a single medical center, geographic region, medi-
cal specialty, or organization), results may not be generalizable to other populations. Similarly, self-selection and nonresponse biases limit generalizability; these effects are likely to be most problematic when response rates are low.

Although traditional randomized controlled trials are not feasible or ethically appropriate for studying disclosure of medical error, this review found an overreliance on cross-sectional designs and direct self-report measures. We suggest 2 avenues for future research. First, the use of vignette-based studies in experimental designs provides a means of efficiently and systematically examining multiple variables and allows manipulation of these variables in ways that would be unethical in the clinical setting. This approach will be especially useful for identifying a smaller set of variables for further study. Greater realism can be introduced through videotaped simulations (rather than written vignettes), although the link between behavior in the hypothetical situation and real life must be addressed, as noted herein. The second avenue that researchers should be alert to is the potential for capitalizing on naturally occurring changes in health care organizations. As organizations institute new policies on disclosure of error, opportunities for conducting “natural experiments” may occur. The report on the experience of the Lexington VA facility describes one such effort, but there is a need for additional rigorous evaluations in different settings. Studies conducted at the organizational level, with organizations rather than individual patients assigned to intervention conditions, may also avoid some of the ethical and practical difficulties inherent in research in this area.

The prevalence of discussion papers, commentaries, and editorials on disclosure of errors to patients is evidence of the importance of the topic of disclosure for clinicians; the dearth of empirical research is a barrier to improvements in practice. Without empirical data to provide guidance on how to disclose well and without a better understanding of the relationship between the disclosure process and the consequences of disclosure, clinicians can only guess at what is most effective in this difficult situation. This lack of knowledge may lead to suboptimal outcomes for the patient and the physician and thereby discourage disclosure in future cases. With respect to the decision stage of disclosure, future research should examine what influences this decision, focusing on barriers and how these might be reduced. With respect to process, researchers should seek to develop answers to the many practical questions faced by practitioners, such as who should disclose, what information should be provided, and when disclosure should occur. Answers to these questions will require a greater knowledge of the consequences of disclosure and how specific process components affect the consequences. Finally, future research must consider the many levels of variables that may influence all stages of disclosure, from the cultural context at the national level to the characteristics of the individual patient and physician.

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