Patients' and Physicians' Attitudes Regarding the Disclosure of Medical Errors

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HEALTH CARE INSTITUTIONS nationwide are developing ambitious programs to prevent medical errors.[1,2] Yet, despite our best efforts, medical errors will inevitably occur.[3] An important component of the response to an error is deciding whether and how to tell the patient about what happened. Disclosing medical errors respects patient autonomy and truth-telling, is desired by patients, and has been endorsed by multiple ethicists and professional organizations.[4-19] In addition, hospital accreditation standards and some state laws now require that patients be informed about "unanticipated outcomes" in their care.[20-23]

The limited available data, however, suggest that full disclosure of errors to patients may be uncommon. In a 1991 study, 76% of house officers said they had not disclosed a serious error to a patient.[24] Multiple factors may inhibit physicians from disclosing errors, such as fear that informing the patient of an error could lead to a malpractice suit, damage the physician's reputation, and be awkward and uncomfortable.[15,25-31] Some institutions are developing new policies requiring or strongly encouraging disclosure of some errors to patients.[7,32-37] It is not known whether these policies are increasing error disclosure. In a recent national survey, only 30% of respondents who experienced a medical error said that the involved health care professional had informed them of the error.[12] Failure to tell patients about medical errors could impair patient trust and satisfaction and increase the chances of a malpractice suit.[13-15,26,38-43]

Greater insight into patients' and physicians' attitudes toward error disclosure could improve the way institutions and practitioners handle these events.[32,34,35,44-48] Most prior studies have examined either patients' or physicians' general attitudes about medical errors in isolation.[13,15,16,24,29,49-51] Yet, an important element of the response to a medical error is the interaction between the patient who experienced the error and that patient's physician. Therefore, strategies for responding to medical errors should simultaneously consider the attitudes of physicians and patients about errors and their disclosure.[12,15,52] To better understand this

Context Despite the best efforts of health care practitioners, medical errors are inevitable. Disclosure of errors to patients is desired by patients and recommended by ethicists and professional organizations, but little is known about how patients and physicians think medical errors should be discussed.

Objective To determine patients' and physicians' attitudes about error disclosure.

Design, Setting, and Participants Thirteen focus groups were organized, including 6 groups of adult patients, 4 groups of academic and community physicians, and 3 groups of both physicians and patients. A total of 52 patients and 46 physicians participated.

Main Outcome Measures Qualitative analysis of focus group transcripts to determine the attitudes of patients and physicians about medical error disclosure; whether physicians disclose the information patients desire; and patients' and physicians' emotional needs when an error occurs and whether these needs are met.

Results Both patients and physicians had unmet needs following errors. Patients wanted disclosure of all harmful errors and sought information about what happened, why the error happened, how the error's consequences will be mitigated, and how recurrences will be prevented. Physicians agreed that harmful errors should be disclosed but "choose their words carefully" when telling patients about errors. Although physicians disclosed the adverse event, they often avoided stating that an error occurred, why the error happened, or how recurrences would be prevented. Patients also desired emotional support from physicians following errors, including an apology. However, physicians worried that an apology might create legal liability. Physicians were also upset when errors happen but were unsure where to seek emotional support.

Conclusions Physicians may not be providing the information or emotional support that patients seek following harmful medical errors. Physicians should strive to meet patients' desires for an apology and for information on the nature, cause, and prevention of errors. Institutions should also address the emotional needs of practitioners who are involved in medical errors.

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Table 1. Characteristics of Focus Groups

Patients (n = 52)	
Age, mean (range), y	60 (32-69)
Male, No. (%)	15 (29)
White, No. (%)	46 (88)
College graduates, No. (%)	22 (42)
Physicians (n = 46)	
Mean y in practice (range)	16 (1-45)
Male, No. (%)	38 (83)
White, No. (%)	36 (78)
Surgeons, No. (%)	25 (54)

issue, we conducted a series of 13 focus groups, including 3 joint patient-physician focus groups. Our specific research questions were (1) What are the attitudes of patients and physicians about medical error disclosure? (2) Do physicians disclose the information patients desire about medical errors? (3) What are patients' and physicians' emotional needs when an error occurs, and are these needs being met?

METHODS
Participants
We conducted 13 focus groups in St Louis, Mo, between April and June 2002. Six groups involved patients, 4 groups involved physicians, and 3 groups included both patients and physicians. The focus groups had an average of 10 participants per group (range, 7-13). The goals of the patient-only and physician-only focus groups were to obtain a baseline understanding of each group's attitudes about error disclosure and to discuss topics that patients and physicians might hesitate to share in front of the other party. The goal of the joint focus groups was to create a patient-physician dialogue about error disclosure to better understand these 2 perspectives. The Washington University Medical Center Human Studies Committee approved the study, and all participants provided written informed consent.

We recruited patient participants using newspaper advertisements and flyers. Patients were eligible to participate if they were older than 18 years, able to provide written informed consent, and active users of health care, defined by hospitalization in the last 2 years, having a chronic illness, or having a regular source of health care. A total of 52 patients participated. Patient participants were predominantly female (71%) and white (88%) and were a mean age of 60 years (TABLE 1).

Physician participants were recruited through direct mailings to primary care physicians and surgeons practicing in the St Louis area. A total of 46 academic and community physicians participated in the focus groups. Physicians were predominantly male (83%) and white (78%) and had been in practice for an average of 16 years (Table 1). The most common specialties were surgery (54%) and internal medicine (33%).

The participants for the 3 joint patient-physician focus groups were drawn from individuals in the patient-only and physician-only focus groups. Approximately equal numbers of patients and physicians participated in each joint focus group.

Conducting the Focus Groups
All focus groups were led using detailed guides (available from the authors on request). A psychologist (A.D.W.) led the patient-only focus groups, while a physician (T.H.G.) led the physician-only groups. The joint patient-physician focus groups were co-led by both moderators. Standard moderation techniques were used throughout.[53-55] All focus groups lasted 90 minutes and were audiotaped.

The patient-only focus groups began by discussing what the terms *patient safety* and *medical errors* meant to participants. Definitions of medical errors and adverse events developed by the Federal Quality Interagency Coordination Task Force were then presented. An error was defined as "failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim." An adverse event was defined as an "injury that was caused by medical management and resulted in measurable disability."[56]

A hypothetical situation involving a medication error was then presented to participants. Patients were asked to imagine they were a patient with diabetes admitted to the hospital with breathing problems. They receive a 10-fold overdose of insulin, due in part to a physician's handwritten order for "10 U" of insulin being misinterpreted to read "100 units." As a result of this overdose, the patient becomes severely hypoglycemic, loses consciousness, is resuscitated, and is transferred to the intensive care unit. The patient recovers uneventfully and incurs no permanent harm. Patients were asked to consider whether and how they would want this error disclosed to them and what else should be done in response to this error. Variations of the error were then presented, including a near-miss situation in which the nurse catches the error before administering the insulin. Participants also volunteered personal examples of medical errors and how they had been handled.

The physician-only focus groups followed a similar format. Definitions of medical errors and adverse events were presented, followed by a discussion of whether and how medical errors should be disclosed to patients. Physicians then discussed what they would disclose to the patient in the insulin overdose scenario. In addition, physicians discussed a second scenario that a participant in the first physician focus group presented. In this second scenario, physicians have ordered a medication known to raise potassium. They order a potassium blood test for the following day but forget to check the results. On the third hospital day, the patient develops hyperkalemic arrhythmias. Reviewing the laboratory results they overlooked from the previous day, the physicians realize the potassium had risen substantially from admission. Had they seen this elevated potassium level 1 day earlier, they would have stopped the new medication and treated the patient's hyperkalemia. Participants discussed whether and how this second error should be disclosed to the patient. The groups concluded with physicians sharing personal experiences of error disclosure.

The joint patient-physician focus groups started using a "circle within a circle" approach, in which patients sat in an inner circle with physicians lis-

tening in an outer circle. The patients talked with each other about medical errors and why they happen. Physicians then moved into the inner circle while patients listened in the outer circle. Physicians commented on what they had heard the patients say and then talked among themselves about the experience of making errors and discussing errors with patients. The remainder of the joint focus group took place with all participants in a common circle and focused on the optimal resolution of medical errors from both participants' perspectives.

Analyzing the Focus Groups

The focus group audiotapes were transcribed verbatim and reviewed by 3 investigators (T.H.G., A.D.W., and A.G.E.) to identify major themes. Two investigators (A.D.W. and A.G.E.) then reread each transcript, manually coding the presence of each theme as well as identifying quotations exemplifying these themes. Any differences of opinion about the meaning of specific passages in the transcripts were discussed and resolved. Only the themes that recurred in each of the relevant focus groups are presented herein.

RESULTS

Although patients' and physicians' attitudes about medical errors and their disclosure had much in common, important differences existed between the perspectives of these 2 groups (TABLE 2).

Patients' and Physicians' General Attitudes About Medical Errors

All patients were aware of the topic of errors in medicine, either through first-hand experience or from recent media stories. Patients conceived of medical errors broadly. Despite being presented a standard definition of medical errors, many patients included poor service quality (long wait for routine radiograph), nonpreventable adverse events (previously unknown drug allergy), and deficient interpersonal skills (physician being rude to patient) as examples of errors. While wishing that health care were perfect, patients un-

Table 2. Comparison of Patient and Physician Attitudes About Medical Error Disclosure

Focus Group Themes	Patients' Attitudes	Physicians' Attitudes
Definition of error	Broad; includes deviations from standard of care, some nonpreventable adverse events, poor service quality, and deficient interpersonal skills of practitioners	Narrow; deviations from accepted standard of care only
What errors to disclose	All errors that cause harm	Errors that cause harm, except when harm is trivial, patient cannot understand error, or patient does not want to know about error
Disclose near misses?	Mixed	No
What information to disclose about error	Tell everything	Choose words carefully
How to disclose error	Truthfully and compassionately	Truthfully, objectively, professionally
Role of apology	Desirable	Concerned that apology creates a legal liability
Emotional impact of error	Upset, angry, scared	Upset that patient was harmed and about how error could impact career

derstood that medical errors were inevitable. The possibility that a medical error might happen in their care was frightening to patients.

Physicians shared patients' fear of medical errors. One physician described a sense of dread when he realized that he might have made a medical error:

If something goes wrong with a patient . . . the things that come to the doctor's mind are "Was it something I prescribed? Was it an instruction I failed to give? Did I do something wrong?" You get that sinking feeling probably on a daily basis almost.

Most physicians concurred that they worry regularly about medical errors. In addition to fearing that an error might harm patients, physicians said their worst fears about errors included lawsuits, loss of patient trust, the patient informing friends about their bad experience, loss of colleagues' respect, and diminished self-confidence. Physicians were frustrated by the breadth of what patients considered to be errors and thought patients were often unduly upset about "minor" errors.

Whether to Disclose Errors That Caused Harm

Patients were unanimous in their desire to be told about any error that caused them harm. Patients believed

such disclosure would enhance their trust in their physicians' honesty and would reassure them that they were receiving complete information about their overall care. However, patients believed that "human nature" might lead health care workers to hide errors from patients. One patient said:

And that's the first instinct . . . something's gone wrong. You know, hopefully the first thing is to correct it or save the person or whatever, but the second is cover your hide.

Physicians agreed in principle that patients should be told about any error that caused harm, and many said such disclosure was ethically imperative. Some physicians said they would also tell patients about certain errors that did not cause harm, such as an error that required follow-up testing. However, physicians agreed with patients that human nature might cause some physicians to withhold information about errors from patients.

Although physicians endorsed error disclosure in principle, many described specific situations in which they might not disclose an error that harmed a patient. Some physicians said there was no need to disclose an error if the harm was trivial or if the patient was unaware that the error had taken place. Other physicians believed that certain

patients would not want to know about an error and that informing these patients of an error would diminish patients' trust in their physician.

You don't want to be accused of scaring people. I've had patients tell people that I was scaring them when I thought I was simply being informative and, you know, not being dramatic or anything. But clearly in those cases, I was telling people more than they wanted to know.

Whether to Disclose Near Misses

Patients had mixed opinions about whether they should be told about near misses. Some patients thought that hearing about a near miss would alert them to what errors they should watch for and would reassure them that the systems to prevent errors from reaching patients were working. Other patients thought that hearing about a near miss would be upsetting:

I would be more fearful of what might go wrong in the future. So I would rather not be told.

Most physicians opposed disclosing near misses, feeling such disclosure would be impractical and could diminish patient trust.

I think if we were held to disclose all of those [near misses], I think that happens so often we wouldn't have the opportunity to practice medicine.

My job is to relieve anxiety, not to create it. And to a certain extent when an error occurs that doesn't get to the patient, it's not their problem, it's my problem.

However, a few physicians actually appreciated the opportunity to discuss near misses with patients.

You form a therapeutic alliance by being in constant communication with the patient. So to me, a medical error with no adverse event is an opportunity to form a tighter bond with the patient. You tell them right up front what happened, what went wrong, you're very sorry it happened. . . . If no adverse event whatsoever occurs with a medical error, I'm just delighted to tell the patient exactly what happened.

What Information to Disclose About Harmful Errors

Patients overwhelmingly agreed on what they wanted to be told about errors that caused harm. Patients wanted to know what happened, the implications of the

error for their health, why it happened, how the problem will be corrected, and how future errors will be prevented. One patient described how he would like a physician to tell him about the insulin overdose, emphasizing the importance of full disclosure and an apology:

I'm sorry, but due to an error of writing instructions and communication there was a misunderstanding and it caused an overdose of insulin. You have my deepest sympathy as far as physical problems that we caused for you. However, we're doing everything within our powers to correct this error, and we can assure you that this problem will not happen again because I'm not only going to address it as far as writing the information down, but I'm also going to communicate it so the nurse will understand what is supposed to be given. . . . I'm available to sit down and discuss with you in detail what happened, and again, I'm sorry.

Patients preferred this basic information be provided to them rather than having to ask their physician numerous questions. While patients wanted to know about the error expeditiously, they accepted that information about the error's cause and prevention might take time to collect. Patients wanted assurances that they would not suffer financially due to the error. Patients also wanted to know that the practitioner and institution regret what happened, that they have learned from the error, and that they have plans for preventing similar errors in the future.

You know, you may have dodged a bullet; you may not. Who knows? But, hopefully, they will learn from that mistake and that mistake won't be repeated again.

Some physicians agreed with patients' ideas of how errors should be disclosed and said they would tell the patient everything they knew about the insulin error immediately. One physician said he would disclose the cause of insulin overdose to the patient as follows:

Now, we do have several errors that have happened here. My handwriting wasn't clear. The nurse should have realized that a hundred units was too much. The pharmacist should have realized that a hundred units was too much. . . . That's what happened.

However, in contrast with patients' preferences for full error disclosure, many physicians were more circum-

spect regarding exactly what they would tell patients about errors. These physicians were committed to being truthful but wanted to put the most positive "spin" on the event as possible.

I think you have to be a spin doctor all the time and put the right spin on it. . . . I don't think you have to soft pedal the issue, but I think you try to put it in the best light.

I think you have to be forthright with the patient to help them. And how you word it makes a big difference.

Many physicians said that fear of litigation limited what they tell patients about errors.

Everything you read and everything that you're told says that you are supposed to tell what errors you make as soon as you can. Let them know what your thinking is, what you are going to do about it. And your chances of having an adverse litigation are less if you take that approach. Now, the question is, how many of us believe that?

Many physicians spoke of "choosing their words carefully" when talking with patients about errors. Most often, this careful choice of words involved mentioning the adverse event but not explicitly stating that an error took place. These physicians believed that the patients would ask follow-up questions about the error if they were interested in more information.

I would be very straightforward and say "You were given too much insulin. Your blood sugar was lowered and that's how you arrived in the intensive care unit. You were given some dextrose . . . " and apologize for the events. And then if they want to know . . . "How did I get too much, or why couldn't they read your writing, or why didn't they call you?" you go into those individually, but I wouldn't walk in saying I have sloppy handwriting and they didn't know what they were reading.

You just tell the facts: "You got a big bunch of insulin and your blood sugar went down, and we got that fixed up and we're glad you're great."

Physicians chose their words even more carefully when responding to the hyperkalemia vignette, and few said they would mention the overlooked laboratory test result. Compared with the insulin example, in which physicians thought the patient would suspect a medication error, physicians believed

that the hyperkalemia patient would be completely unaware of the error.

I would say something like "I thought this medication was appropriate for you. I didn't anticipate it to have this response." And I don't disclose the fact that I didn't check the lab that I was supposed to check.

My approach to this would be to say "I ordered the medicine for you, one of the effects of which is your potassium went up. I ordered the laboratory tests. I didn't recognize that it was getting high until the second test. And it's high, you are having arrhythmias, and we are treating you." I don't know that I would say "I ordered the test. I tried to find the result. I didn't get the result. I forgot about it, and I never checked it." I wouldn't say that.

In both vignettes, physicians were also unlikely to tell the patient what caused the error and how it might be prevented. None of the physicians said they would tell the patient anything they personally planned to do to prevent similar errors in the future, such as avoiding the abbreviation "U" for "units."

Patients' Emotions Following an Error

Patients described having a variety of emotional responses after a medical error. Hearing that an error occurred would make patients feel sad, anxious, depressed, or traumatized. Patients feared additional errors, were angry that their recovery had been prolonged, and were frustrated that the error was preventable. Patients were especially disturbed about errors they thought were caused by practitioners being careless.

Patients believed that the way the error was disclosed to them directly affected their emotional experience after the error. Many patients said they would be less upset if the physician disclosed the error honestly and compassionately and apologized. Patients thought that explanations of the error that were incomplete or evasive would increase their distress. Some patients also recommended having a patient advocate or psychologist assist patients in coping with errors.

Physicians recognized patients' distress following errors and tried different approaches to addressing these upset feelings. Many physicians said they

would emphasize how glad they were that the error had not been worse or that the patient was recovering nicely. While some physicians thought it was helpful to say that they too were upset about the error, other physicians found this approach "unprofessional" and preferred to focus on the facts of what happened. Most physicians wanted to apologize but worried that an expression of regret might be construed by the patient as an admission of legal liability.

You would love to be just straightforward. "Gosh, I wish I had checked that potassium yesterday. I was busy, I made a mistake, I should have checked that. I can't believe I wouldn't do that. I will learn from my mistake and I will do better next time, because this is how we learn as people." But if you say that to a patient, which you would like to be able to say, honestly, as just another human being, is that we have this whole thing, the wait to cash in [through a lawsuit].

Physicians' Emotions Following an Error

Physicians also experienced powerful emotions following a medical error. Physicians felt upset and guilty about harming the patient, disappointed about failing to practice medicine to their own high standards, fearful about a possible lawsuit, and anxious about the error's repercussions regarding their reputation.

This is one of the few businesses that is around where you have to hit a home run every time . . . and I find that the older I get, the longer I have been at this, the more I worry to the point that this is probably what is going to drive me out of it, is worrying about it.

For some physicians, the emotional upheaval following an error led to sleeplessness, difficulty concentrating, and anxiety. Patients said they had no idea that medical errors caused such problems among physicians. Some patients welcomed the physician sharing his or her emotions about an error, while other patients preferred the physician to emphasize that things were under control following the error.

I was really surprised to hear the doctors talk like that. I saw a lot more caring than I expected. Caring means communications, their feelings. You know, most of the time when you see the doctor you don't get their feelings—yeah, I was surprised.

I am hoping that they are coming in with some real confidence, saying, "Yeah, I know this was a mistake. I am concerned, but here is how we are going to handle it." I am sure that physicians deal with that [physicians' upset feelings], but I don't want to see that side of it. I want to know how can you help me?

Physicians struggled to find support following a medical error. Some physicians found talking about an error at a morbidity and mortality conference to be helpful.

You are supposed to give full disclosure [in the conference]. Don't hold anything back. And it is almost a religious experience. You get up, you confess your sins. They assign a punishment to you. You sit back down and you are forgiven for your sins.

Many physicians sought solace by discussing an error with significant others or a trusted colleague. No physicians reported seeing a counselor or psychologist about an error. Some physicians said they felt better after disclosing the error but worried that this relief came at a price to the patient.

[We are] trying to relieve the soul of some burden when we confess our sins or our errors . . . and dumping that onto the patient is not necessarily nice.

For many physicians, the most difficult challenge was forgiving themselves for the error.

It helps if the patient says, "Look, I understand that this is not normal, but I am willing to go along with whatever you say . . . and to give you that extra support and second chance." Forgiveness is something that I think is tougher for the physicians to give themselves than to get from the patient.

COMMENT

Medical errors are an unfortunate but inescapable part of medical practice. Our study, the first to our knowledge to jointly investigate patients' and physicians' attitudes about error disclosure, suggests that the current response to medical errors may meet neither patients' desire for information about errors nor the needs of patients and physicians for emotional support following an error.

While patients and physicians largely agreed on whether to tell patients about errors that cause harm, they disagreed about what to disclose regarding such

errors. Patients unanimously wanted information regarding an error's cause, consequences, and future prevention. Yet many physicians, while striving to be truthful, were reluctant to provide patients with this basic information. For some physicians, error disclosure involved being a "spin doctor," describing the event in the most positive yet factually accurate light possible. As early as the 1930s, physicians were advised to "keep a cautious tongue" regarding medical errors.[37] Other studies have also documented physicians' reluctance to fully disclose errors to patients.[15,24,58] Physicians' wariness in telling patients about errors is often appropriate, reflecting both fear of litigation and uncertainty about what happened. Other rationale these physicians offered for not fully informing patients about errors may be more self-serving, such as the possibility that information about an error might harm the patient. Few patients shared this concern. Failing to provide patients with desired information about errors could impair patients' clinical decision making, diminish patient-physician trust, and increase the likelihood of a lawsuit.[13,59-62]

Physicians' reluctance to discuss the cause and future prevention of errors was especially troubling to patients. Many current institutional policies about disclosing medical errors instruct physicians not to discuss why an error happened in a way that could imply fault and to maintain the confidentiality of error analyses.[37] Yet these patients sought an explanation of why the error occurred—not to affix blame but, rather, to understand what happened to them and to know that the institution and individuals involved had learned from the event. Similarly, many patients report filing malpractice suits so that comparable errors are not repeated.[14,42,60,63] Understanding patients' motivation for wanting full error disclosure may increase physicians' and institutions' willingness to provide this information. In addition, talking with patients about error prevention may make disclosure conversations more positive and less threatening to physicians. The need to

tell patients about an error's cause and prevention could also create stronger links between physicians and safety programs, reducing future errors.

No consensus emerged regarding whether to tell patients about near misses (errors that could have caused harm but did not, by either chance or timely intervention[56]), an issue on which current guidelines are largely silent. Knowing about near misses could help patients make more informed health care choices, reassure patients that mechanisms to prevent errors from reaching them are working, and dispel their fears that medical errors might be hidden from them. Talking with patients about near misses could also help engage patients in error prevention efforts. However, many patients did not want to know about near misses, and physicians thought disclosing near misses was impractical. A reasonable approach might be to tell patients about near misses only if the patient observed the near miss or has expressed a desire for such information.

Patients' needs for emotional support following an error may also be going unmet. Physicians' tendency to limit what they tell patients about errors may actually exacerbate patients' upset emotions. What physicians see as maintaining an appropriate professional demeanor while discussing an error can strike the patient as cold and impersonal, creating the mistaken impression that the physician does not care about what happened or is hiding what actually happened. Patients in this study wanted physicians to apologize. Physicians also wanted to apologize but were reluctant to do so for fear of litigation. Apologizing might, in fact, be a useful approach to resolving both physician and patient distress after an error. Additional research should seek to resolve this dilemma.

Physicians and institutions can take a number of steps to better meet patients' needs following an error. Physicians should recognize that they may not be providing the information patients want about errors and should disclose the following minimal information about harmful errors regardless of whether the pa-

tient asks: (1) an explicit statement that an error occurred; (2) a basic description of what the error was, why the error happened, and how recurrences will be prevented; and (3) an apology. Physicians should encourage and respond forthrightly to patient's questions and strive to support patients' emotions. Institutions should ensure their disclosure policies account for patients' preferences to be fully informed about errors and encourage physicians to disclose such information to patients.

Health care workers' emotional needs following medical errors may also be going unmet.[26-31] The notion of a "blame-free" culture of errors did not diminish these physicians' anguish and sense of culpability for errors. Some physicians turned to the affected patient for support following errors and, through disclosure, sought forgiveness from the patient. Most physicians simply struggled to forgive themselves for what happened. Institutions should assess and support the emotional needs of practitioners as an explicit component of every error analysis.[34,47,64-66] In addition, continued education of practitioners about the role of faulty systems in most errors may diminish their distress following errors.[1,2,67] Better institutional support for caregivers involved in errors would help them focus their attention on the affected patient.[7,32,34,35,44]

Our study has a number of limitations. We studied a self-selected sample of patients and physicians in 1 geographic area, which may limit the generalizability of our results. In addition, our qualitative methods do not allow us to determine the exact proportion of patients or physicians who held any given attitude. However, the themes we have reported are those that recurred independently in each focus group, enhancing our confidence that these themes accurately reflect the general attitudes of patients and physicians.

Patients' needs for information and emotional support following harmful medical errors may be going unmet. In particular, we found that patients and physicians have notably different perspectives on what information should be

disclosed about medical errors. Designing patient-centered strategies for responding to medical errors will require a better understanding of patients' needs following a medical error and the barriers that prevent physicians from meeting these needs. In addition, health care institutions should strengthen their support of the emotions of practitioners who are involved in medical errors.

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