



Building bridges: Future directions for medical error disclosure research



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ABSTRACT

Objective: The disclosure of medical errors has attracted considerable research interest in recent years. However, the research to date has lacked interdisciplinary dialog, making translation of findings into medical practice challenging. This article lays out the disciplinary perspectives of the fields of medicine, ethics, law and communication on medical error disclosure and identifies gaps and tensions that occur at these interdisciplinary boundaries.

Methods: This article summarizes the discussion of an interdisciplinary error disclosure panel at the 2012 EACH Conference in St. Andrews, Scotland, in light of the current literature across four academic disciplines.

Results: Current medical, ethical, legal and communication perspectives on medical error disclosure are presented and discussed with particular emphasis on the interdisciplinary gaps and tensions.

Conclusion: The authors encourage interdisciplinary collaborations that strive for a functional approach to understanding and improving the disclosure of medical errors with the ultimate goal to improve quality and promote safer medical care.

Practice implications: Interdisciplinary collaborations are needed to reconcile the needs of the stakeholders involved in medical error disclosure. A particular challenge is the effective translation of error disclosure research into practice. Concrete research questions are provided throughout the manuscript to facilitate a resolution of the tensions that currently impede interdisciplinary progress.

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1. Introduction

The subject of disclosing medical errors has attracted considerable research attention over the past decade. Various disciplines have discussed disclosure from their own professional perspectives, with some generating practical, evidence-based guidelines. Medical scholars and practitioners have provided a clinical perspective, and tried to balance the recognition of the practitioner's human fallibility with the need for honest, full disclosure to patients and their families. Defense lawyers have talked about the legal rights and protections of practitioners after an adverse event in the context of patients' rights to know what transpired.

Ethicists have focused on protecting patients after harm and on the "right to know" under the principle of patient autonomy. Communication scholars and researchers have examined the effects of error disclosure on the patients and providers, and on various institutional and relational outcomes.

To date, a major consideration in error disclosure research has been financial, and some researchers have suggested that open disclosure combined with fair compensation might prevent litigation. However, the causal effects of disclosure and compensation have not been investigated independently. Thus, it is unclear which of them encourages litigation. Furthermore, there is some concern that compensation to prevent litigation might keep patients from receiving what they are actually entitled to, because their case is not evaluated in an independent court of law. Although compensation programs typically do not prohibit malpractice claims, they seem to make patients less likely to sue.

Recent research has moved beyond the issue of financial responsibility and its consequences to the relational and medical

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outcomes of effective and ineffective disclosures [1]. Further, as patient safety has become a primary focus of the World Health Organization (WHO), hospitals are becoming increasingly interested in comparative assessments of their safety cultures, with medical error disclosure as one element in such evaluations [2]. Therefore, it can be expected that disclosure research will attract even more attention in the coming years.

Given this reality, it is important that as a scientific community, we make a more coordinated effort to define the research needed to inform the teaching, practice, and evaluation of medical error disclosure. Currently, error disclosure research is fragmented, with little interdisciplinary collaboration, resulting in research findings that are difficult to integrate. One reason for this segmentation is that disciplines contributing to error disclosure research are rooted in different paradigms. For example, defense lawyers mainly focus on protecting offenders after they have caused harm. Ethicists are primarily concerned with ethical principles and norms, particularly with respect to the harmed patient. The perspectives of these two disciplines are fundamentally incompatible, inevitably resulting in findings and recommendations that are difficult to reconcile.

2. Methods

In an attempt to identify the dominant discrepancies among the disciplines of medicine, ethics, law and communication, and to find ways to promote more coherent disclosure research that generates effective disclosure practice, the authors of this article participated in an interdisciplinary panel at the 2012 EACH Conference in St. Andrews, Scotland. This paper summarizes that discussion in light of the current literature of these four academic disciplines. We hope that this effort will contribute to furthering interdisciplinary dialog and to more coherent, translatable research on error disclosure in medical practice.

We begin with a summary of each disciplinary perspective on the importance and conduct of medical error disclosure. We then identify and discuss interdisciplinary gaps and tensions. Finally, we propose directions for future research that can help to overcome these discrepancies. An overview of the key issues and suggestions for research studies is presented in Table 1.

3. Results

3.1. Perspectives on medical error disclosure

The ideal practitioner–patient relationship is characterized by trust, cooperation and shared decision-making [1]. While this relationship may be harmed by a medical error, full disclosure subsequent to an error may help to mitigate that harm [4–8]. Scholars in medicine, ethics, law, and communication largely agree on the need for error disclosure, but their perspectives on the timing and content of effective disclosures vary. Furthermore, experts are divided whether errors which did not result in harm should be disclosed to patients [9,10]. Most practitioners do not disclose errors to their patients, particularly when their actions caused harm [11,12]. Some perspectives criminalize these acts [13], others empathize with the offending practitioner and recognize his or her role as a “second victim” [14] who typically punishes himself harshly. In addition, practitioners commonly face legal threats, unsupportive institutional cultures, lack of experience, and unclear guidelines when encountering an error, along with a continued responsibility for the well-being of the patient [15,16]. The following sections elaborate each disciplines’ perspectives on error disclosure and their views on proper disclosure conduct.

3.1.1. A medical perspective: the healthcare practitioner’s viewpoint

The practitioner’s perspective consists of clinical and personal components. The vignette in Appendix A illustrates this dilemma and the intense contradictory feelings it can evoke; a practitioner’s desire to disclose is complicated by the confrontation of self as fallible and the cultural expectation of perfection as the standard for medical practice. Practitioners who make decisions about error disclosure in medical practice commonly lack the objectivity afforded by disciplines which have the luxury of time for reflection and analysis. Research has shown that errors and disclosure can cause great distress [64] and raise unique challenges. As described later in the paper, legal unknowns and stressors, professional concerns, and communication inexperience contribute to a prevalent aspiration–reality gap that prevents effective disclosure [12,50]: while practitioners articulate openness and knowledge regarding frank and honest disclosure, these beliefs typically do not translate into practice [49,50,65]. Thus, despite empirical findings supporting full disclosure, practitioners’ attitudes and practices often fail to meet professional disclosure guidelines.

One of the greatest barriers to effective disclosure is institutional culture. Non-punitive cultures are more effective than compliance-based cultures in facilitating open disclosure [66]. However, the dominant model of addressing errors in hospitals and health systems continues to be early involvement of the institutional “risk management” team that may encourage silence and emotional distancing of the potential defendant from the potential claimant. On the other hand, cultures encouraging error disclosure predict practitioners’ disclosures experience more actual disclosures, and prior education on error disclosure strengthens this association [2].

Unfortunately, as in the “delivery of bad news” [67], the practice of error disclosure varies considerably from the “correct” strategies taught during medical school’s pre-clinical years. Trainees predictably suffer significant emotional distress in response to a medical error [68]. The delicate conversations that follow these incidents, like those described in the vignette, require advanced communication skills. In the absence of curricula that are reinforced throughout the clinical and resident years, valuable teaching opportunities are missed and trainees “unlearn” the necessary evidence-based skills to respond to errors competently, empathically, and responsibly [68]. Thus, the learning potential that rests in the context of medical errors and its substantial contribution to quality improvement is lost.

3.1.2. A medical perspective: the patient’s viewpoint

Patients and family members’ perspectives on medical errors and disclosure has been undervalued in many discussions. Historically, patients have not been encouraged to speak up if they suspect a medical error in their care, and research confirms that patients may be reluctant to voice their suspicions [69]. There are many reasons for this, including concerns about potentially damaging the practitioner–patient relationship, possibly leading to poor care, the need to focus on their own illness or treatment, concerns about harming the practitioner, the belief that reporting will not make a difference, and uncertainty about how to report concerns, to whom errors should be reported, and whether reporting will even make a difference. But when patients do not voice their concerns, practitioners are unaware of their suspicions, and are unable to respond appropriately. Further, because patients sometimes have information that practitioners do not have important information that could help to prevent recurrences may be missed.

The fact that patients are reluctant to initiate discussions about possible errors reinforces the need for practitioners to be forthcoming when errors do occur. There are several elements of disclosure that are important from the patients’ perspective

Table 1
Key issues of debate and respective future research suggestions.

Key debated issues	Disciplinary perspectives				
	Law	Communication	Ethics	Medicine	
				Practitioner	Patient
Errors of interest	Breach in duty of care in combination with patient injury	Errors that result from incompetent communication	All, but mainly errors that caused harm	All	Errors in their medical care, communication breakdowns
Disclosure if harm?	Disclosure is of legal concern; there is no legal duty to disclose	Yes (relational maintenance, conflict resolution, risk communication)	Yes (patients' right to be informed; maintenance of fiduciary relationship)	Risk management and insurers: No (liability); Practitioners: Yes, but afraid and lack of skills	Yes (want to be informed)
Disclosure if no harm?	No legal interest	Yes, for collaborative future intervention and prevention (safety)	Yes for patient autonomy; no if the disclosure causes harm	Yes, to reduce future errors; quality improvement efforts	Limited research to date; yes, to reduce future errors and improve safety
Disclosure content of interest	Concern: Apology and admission of guilt; Financial implications	Verbal and nonverbal disclosure skills; Elements of apology	Full and truthful disclosure that accommodates the principles of medical ethics (i.e., patient autonomy, beneficence, non-maleficence, and justice)	Medical implications of the error; 'Best practices of disclosure' (in light of threatening outcomes)	Acknowledgment of error; apology, acceptance of responsibility, understanding of the full impact of the error on the patient; evidence of provider and system learning and plans to prevent recurrences; appropriate compensation
Apology	Concern: May (or may not) be interpreted as admission of negligence	The different <i>elements</i> of apology in the disclosure context (need to broaden the construct)	A sincere apology is essential for restoring credibility and trust	Sincere apology for closure, or no apology to save face and prevent legal action	Full and sincere apology
Motivations against disclosure	Fear of compensation culture/disclosure as catalyst to litigation	Insufficient communication skills to facilitate good outcomes (might make things worse)	If it would cause greater harm to the patient (beneficence) or obviate adequate treatment; also, second victim considerations (supporting the practitioner)	If it would cause further harm to the patient; Perceived threats and pressures (e.g., institutional culture and ideals, insurance contracts)	Effects on practitioner–patient relationship; Emotional trauma
Disclosure outcomes of interest	Impacts of disclosure on volume and cost of litigation; Liability and insurance coverage; Maintenance of the fiduciary relationship (but not rewarded by the legal system)	Maintenance of the practitioner–patient relationship, forgiveness; Stakeholders' disclosure skill perceptions; Causal outcomes of different communication skill sets and apology elements; Effective interventions to repair the communication sources of the error	Optimization of ethical principles; Patient's and practitioner's best interest; Maintenance of the fiduciary relationship	Closure, Forgiveness, Maintenance of fiduciary relationship; Prevention of error recurrence; Prevention of defensive medicine	Health/future care, Maintenance of fiduciary relationship, Satisfaction, Fair compensation, Reduction of anger and revenge; Tangible social support; Minimized emotional distress and life disruptions
Main research question(s) of interest	Effectiveness of U.S. legislation; Effects of legislation on disclosure practice; Effectiveness of limited statutory duty of candor owed by GPs in instances of 'serious injury' or death. Scope of such a duty	Empirical conceptualization of error disclosure skills: What communication and apology elements cause which positive/negative disclosure outcomes and contribute to relational maintenance/disruption and health?	How can the concepts of credibility, trust and responsibility be implemented to safeguard patient autonomy and dignity? How can the overall ethical benefits and risk of error disclosure be determined? How can the negative impact of errors be extenuated by ethically sound error handling?	Disclosure skills and their translation; Longitudinal educational intervention effects; Systems approach to overcome current teaching-practice gaps (i.e., that students no longer use disclosure skills they adapt from supervisors rather than from medical curricula)	What factors affect patients' responses to disclosure? In addition to exploring the impact of specific verbal and non-verbal communication behaviors, we need to investigate how disclosure needs vary as a function of the clinical context (e.g., pediatrics, surgery, cancer), the specific error and associated harms, the quality of the relationship prior to the error, the offer of compensation, the timing of the disclosure conversation, etc.

Table 1 (Continued)

Key debated issues	Disciplinary perspectives			Ethics		Medicine		Patient
	Law	Communication				Practitioner		
Some necessary future investigations	Independent causal effects of compensation and disclosure on litigation volume and cost; Impact of a restrictive statutory duty of candor on disclosure; Interpretation of the term 'serious injury'	Causal effects of different communication elements (i.e., apology styles; verbal and nonverbal skill sets and levels) on physiological, psychological, relational, organizational, and systemic disclosure outcomes; Effective translation (communication intervention effects in medical practice and education)	Long-term relevance and effects of error handling in the frame-work of institutional ethics; Differentiation between moral reflex and ethical deliberation to establish value-driven practices of error handling	Effects of guidelines on law suits, healing, and quality improvement; Identification and translation of disclosure 'best practices' (evidence-based communication strategies) into practice	Effects of appropriate error management on practitioner/patient relationship; Confidence in medical professionals and post-error mental health (healing); Natural experiments/quasi-experimental designs that examine how changes in policy, laws, and/or training affect disclosure practices and disclosure outcomes; Cluster randomized trials, where interventions (such as provider training, or fair compensation programs) are implemented in randomized clusters (e.g., physicians in certain practices are trained, and those in other—randomly selected practices are not), and the effects of these; Observational studies, where we more closely observe (i.e., record and transcribe) what actually happens in real disclosure conversations, and follow up with patients about these conversations			

Note: The contents of this table are based on interdisciplinary discussions of the contributing authors and thus are not to be considered exhaustive.

[28]. A sincere apology, including an expression of remorse, is important but not sufficient for most patients. It is also important to patients that practitioners accept responsibility for what occurred. Another critical element is information; patients typically want to know something about the chain of events that led to the error. Patients want both to understand what happened, and to know that the medical error is investigated sufficiently to ensure that recurrences are prevented. Patients want to know that steps will be taken, and look for actions as well as words. Finally, patients want those involved to appreciate the full impact of the error on the patient and family. Practitioners tend to focus on the medical consequences of the error, and lawyers on the financial implications. While these are certainly important to patients, emotional distress, missed school or work, and other life disruptions are important to patients as well [27].

While patients who experience effective error disclosures undergo less emotional distress [4], even full and effective disclosure does not guarantee that patients will not pursue legal action. In some instances legal action is the only avenue open to patients and family members who require financial assistance because of error-induced harm. However, incorporating fair and effective adjudication of errors as part of the care process may help patients, families, and health practitioners to focus on healing and preventing recurrences.

3.1.3. An ethical perspective

From an ethical point of view, patients should be able to trust their practitioner with their medical care and welfare. In order to do so, patients need complete and truthful information to make informed medical care decisions. If they are harmed by a medical error, they have the right to understand what happened, and to be freed from financial costs that accrue from the error [17]. Thus, the ethical perspective mandates full disclosure of medical errors to patients to safeguard the trust and credibility that is essential for a functioning provider-patient relationship. Ethically correct error disclosures address the basic principles of *autonomy* (i.e., a patient must know about an error for true informed consent), *beneficence* (i.e., the disclosure should relieve anxiety about the unknown), *non-maleficence* (e.g., prevention of additional unnecessary harm) and *justice* (e.g., support and fair compensation for actual injury; see [18] for a review). Disclosures that follow these principles grant basic respect and protection to patients. When errors result in harm and disrupt patients' lives, it is even more important that practitioners fulfill their ethical responsibilities to disclose fully, acting in patients' best interests and taking patients' unique backgrounds and preferences into account [17,19,20].

Unfortunately, most error disclosures fall short of this ethical diligence. While a number of guidelines [3,21] concur that ethical considerations should trump practitioners' liability concerns, error disclosure is often overshadowed by the medical care practitioners' financial and professional considerations and the fear of being victimized in their professional community. A majority of practitioners do not fully disclose because they fear malpractice litigation [9,15,22]. Ideals of infallibility, institutional pressures, and cultures of silence may also inhibit disclosure [23]. Currently, most patients who sustain disabling injuries from negligent care receive neither adequate apologies combined with psychosocial support, nor sufficient compensation, and thus remain unfairly burdened [23].

3.1.4. A legal perspective

Although it may be argued that both professional and ethical duties to disclose medical errors exist, the question as to whether there is, or should be, a legal duty to disclose adverse events remains unsettled [70]. The implications that arise from the legal perspective primarily stem from concerns that disclosure would

ultimately lead to litigation and, in a sense, further promote a compensation culture and the practice of defensive medicine.

Research suggests that the majority of patients who experience a medical error desire three principal outcomes: an apology, an explanation, and a commitment to future error prevention [25–29]. It is failure on all three counts, over and above any desire for financial compensation that appears to ignite the desire to litigate. Furthermore, it has been argued that acts of omission are more likely to catalyze litigation than acts of commission, and thus deficits in information or suspicions of a ‘cover up’ may contribute to rises in clinical negligence claims [30]. Nevertheless, the fear of litigation continues to be a major impediment to open and honest disclosure [31], regardless of evidence that medical errors rarely result in malpractice claims [32].

The legal perspective on medical error disclosure generally focuses on the extent to which a practitioner has complied with the minimum requirement to provide reasonable patient care, given the contextual circumstances [33,34]. Thus, in legal terms, medical error may be defined as “the failure of a registered practitioner to observe a standard of care and skill reasonably to be expected in the circumstances” ([35], p. 67). Falling below such a care standard is consequently viewed as a breach in a practitioner’s duty of care, one in which other medical practitioners acting with ordinary competence would not have acted in a similar way [36].

Crucially, unlike ethical liability assessments, the primary prerequisite for legal liability assessments is the damage or injury to the patient [37]. Thus, the legal perspective does not deem as relevant the disclosure of incidents that do not harm the patient, unless it later arises that non-disclosure resulted in the need for future remedial treatment [38]. This legal standard has potential negative implications for the practice of patient safety, such as future harm that could and should have been avoided, and deficient consent procedures in future treatment with the same practitioner. Rather than putting patient safety first in decision making around disclosure, legal decision-making regarding medical error disclosure appears to hinge upon whether a legally supported culture of openness and honesty would affect rates of litigation.

The common fear of malpractice suits is a predominant reason that practitioners may be reluctant to disclose [22]. This may be further exacerbated by legal advice to neither disclose nor to apologize regardless of wide recognition that ‘saying sorry’ on its own does not amount to an admission of liability [31]. Recent legislation has attempted to alleviate such fears through the enactment of protective apology laws in the United States [39]. Evidence on the effects of these laws is lacking, and defense lawyers still routinely advise their practitioner clients to refrain from discussing errors with their patients [22,40,41]. This is in contrast to advice recognizing a professional duty of candor, prevalent amongst several medical bodies in the U.K. [21,32,42] and a call for a new culture of honesty and openness [30], a culture ‘where the offense is not to make a mistake, it is to ignore an error, or, even worse, to cover it up’ [42]. Furthermore, it should be considered that if disclosure is ‘morally, professionally and ethically the right thing to do’ ([43], p. 10), why are medical error disclosures not legally appropriate and consequently embedded within healthcare legislation?

Notably, having previously failed to secure statutory recognition in the U.K. (in The Health and Social Care Act 2012, wherein statutory recognition was replaced with contractual obligation) [71], in response to recent reports of “the biggest single scandal in NHS history” [72], the Department of Health has announced plans to introduce of a new, statutory duty of candor for general practitioners to report treatment or care which they believe may have caused serious injury or death. Arguably, such a move could serve to further encourage and in effect, potentially force, error

disclosure, regardless of perceived legal implications. However, introduction of such a legal duty may equally result in suspicion rather than culture change and reduce the entire process to a box ticking exercise [43] in which interpretation of the term ‘serious injury’ may inevitably limit its scope and ultimately impede effective responses [70].

Non-disclosure is arguably unsupportable given the existing evidence of the benefits of open disclosure. For example, research suggests that between one third and one half of patients would not pursue litigation if they had received an error disclosure linked to an apology [44,45]. Furthermore, the University of Michigan Health Services full-disclosure-and-offer program has reported a significant reduction in the number of claims, lawsuits, and time to resolution. Average monthly costs for total liability, patient compensation, and non-compensation-related legal costs also decreased as a result of the Michigan disclosure program [46].

However, while competent disclosure combined with fair compensation may leave more healthcare system resources available for the delivery of care and appropriate injury compensations, there is a persistent legal concern that disclosure may still act as a catalyst to litigation and increase claims [45]. In addition, there is an empirically supported concern that patients may interpret compensation offers as evidence of the practitioners’ motivation to escape litigation [47] rather than avoidance of extraordinary legal fees. Thus, while there is an ethical duty to disclose, the question remains as to whether a legal duty should exist, what form this could take, and whether it would increase or decrease rates of litigation. Particular priority could be given to research into the impact upon litigation rates should a legal duty of candor such as the one proposed by the Department of Health be implemented in conjunction with existing professional duties [70,73]. In sum, the jurisdictional benefits and detriments of medical error disclosure need further empirical examination.

3.1.5. A communication perspective

While an open discussion of medical errors is essential to understanding and reducing future recurrences of preventable adverse events [48], the communication skills needed to effect optimal outcomes of such discussions are not yet evident. At the same time, whereas practitioners generally favor disclosure, they typically lack the ability to effectively utilize disclosure in practice [12,49,50].

No aspect of medical error communication has received more thought and attention than “the apology”. Performed successfully, an apology can have positive effects for all parties involved. For the practitioner, an apology can help diminish feelings of guilt and shame. For the patient, it can facilitate forgiveness and provide the basis for reconciliation and healing [59]. Thus, effective apologies can promote positive health, as well as personal and interpersonal outcomes for both parties [23,28].

Effective apologies require skillful communication, and skillful communication requires a mastery of both verbal and nonverbal [51]. Adults typically place more reliance on nonverbal than verbal cues in determining social meaning [52], and nonverbal cues are essential to message creation and interpretation [53]. While verbal cues are more important for factual, abstract, and persuasive communication, nonverbal cues factor heavily into the interpretation of relational, attributional, and affective/attitudinal messages [54], promoting outcomes such as relational satisfaction, commitment, and conflict resolution [53]. Thus, particularly in the context of medical error disclosures, nonverbal communication should be considered a critical skill.

Given its centrality to relationships, it is surprising that nonverbal behavior has received so little attention in the medical communication literature; recent findings have shown that physician nonverbal involvement during error disclosures

contributes uniquely to patient empathy, trust, satisfaction, closeness, distress, avoidance and forgiveness [5]. In addition, medical litigation may well decrease when good rapport exists between practitioners and patients [55], and improved practitioner communication may mitigate harm and reduce the recurrence of future errors [22].

Christmas and Ziegelstein define error management, including disclosure of medical errors to patients, as a seventh core competency of medical training, suggesting that we need to teach medical students how errors should be dealt with to improve systems of care, prevent subsequent errors, and help patients and their families find resolutions [60]. Preliminary results suggest that practitioners with error disclosure training feel more prepared, confident, and comfortable [61,62] and are more willing to disclose medical errors to their patients [63]. Communication sciences are needed to aid such an adoption of disclosure skills, and to develop assessments that reliably track improvement of practitioners' skills over time.

4. Discussion and conclusion

4.1. Discussion

4.1.1. Interdisciplinary gaps and tensions

The disciplines of medicine, ethics, law and communication each contribute important perspectives to research and practice with regard to medical error disclosure. To effectively address the complicated interdisciplinary aspects of addressing medical errors, the perspectives and concerns of each of these groups have to be heard and integrated into a meaningful, effective, mutually respectful and practical approach. The practical challenges are evident as practitioners struggle with negotiating disclosure in the context of legal and insurance risks. There are several conceptual gaps and tensions that currently divide the disciplines and make an overarching perspective difficult to achieve. The following section identifies some of these gaps as a first step toward overcoming them (see Table 1 for an overview).

4.1.1.1. Interfacing law and communication. The primary discrepancy at the interdisciplinary boundary between communication and law is how various outcomes of disclosure are valued. Communication scholars promote full disclosure and cite evidence that competent disclosure promotes positive relational and institutional outcomes. Defense lawyers typically encourage restraint, due to concerns that full disclosure may increase the volume and cost of malpractice suits [45]. Recent protective apology laws in the United States demonstrate a legislative effort to approach the communication perspective and recognize the value of apology. However, there is still doubt and disagreement among defense lawyers regarding the effectiveness of this legislation, and there is no evidence of the effects of legislation on disclosure practice [39]. More research is needed to generate evidence-based findings that can help to overcome these interdisciplinary barriers. Table 1 provides some concrete research questions and exemplars for such investigations.

4.1.1.2. Interfacing law and medicine. Lawyers and healthcare practitioners both share fiduciary relationships with their clients and patients, and a professional obligation to act in their clients' or patients' best interest [30]. Despite this similarity, there are key differences in their conceptualizations of "harm" and proper error disclosure. While the law would be focused on assessing whether harm has occurred and is amenable to compensatory relief [37], and may even be restricted to outcomes involving 'serious injury or death' [70], medicine is likely to take a broader view, in light of the importance of patient autonomy and other corresponding ethical

duties [74]. Similarly, a limiting legal perspective on error disclosure may compromise health outcomes for practitioners and patients, including psychological relief and reductions in stress-related symptoms [14]. These incompatible arguments with respect to legal protection and health promotion lie at the core of this interdisciplinary conflict and are difficult to reconcile. Again, empirical research is needed to inform the arguments that could facilitate such interdisciplinary agreement. Table 1 lists some concrete research questions for future investigation.

4.1.1.3. Interfacing law and ethics. The legal-ethical gap with respect to error disclosure conduct creates obvious tensions. Ethicists, like their communication colleagues, mandate open disclosure after a medical error, while defense lawyers encourage restraint. The American Medical Association's code of medical ethics acknowledges that ethical values and legal principles are closely related, but states that ethical obligations typically exceed legal duties [3]. Thus, according to this code, a practitioner's ethical obligation to disclose a medical error outweighs legal arguments that focus on the practitioner's protection.

Currently the law discourages disclosure, particularly the disclosure of harmless events which are of no judicial concern, and it does not reward ethical standards of honesty and forthrightness [38], which interferes with fiduciary relational maintenance. Legislation (whether in the form of a statutory duty of candor, an apology law or a move away from an adversarial approach toward an inquisitorial, no-fault based system) and medical ethics need to find a common ground to support practitioners in being forthcoming about errors. Unfortunately, in some cases, error disclosures that meet the ethical standard of a sincere apology may still doom a practitioner to malpractice litigation because the current apology laws are limited in scope. Indeed, while an apology without evidence of a failure to meet an acceptable standard or evidence of harm caused by error will not in itself result in successful litigation, it may nevertheless constitute a relevant evidential matter and consequently encourage an otherwise unconsidered legal investigation to occur. Thus, the practitioner falls victim to this unsettled interdisciplinary tension.

In sum, the ethical and legal approaches to error disclosure need to come to an agreement and generate collaborative solutions that protect the rights of all parties involved. Particularly, research is needed to study the effect of approaches to normalizing error resolution so that remuneration of those harmed by an error is separated from the judgment of those committing an error allowing more of a focus on quality improvement. Further heuristic research questions and examples of concrete future investigations are provided in Table 1.

4.1.1.4. Interfacing ethics and medicine. To this date, medical ethics research has predominantly focused on patient rights, almost ignoring the effects of medical errors on the practitioner. The practitioner has the ethical duty to disclose an error to the patient to meet the ethical standards of autonomy, beneficence, non-maleficence and justice. Thus, the practitioner's role has been reduced to the offender, and institutional and structural factors contributing to medical errors (such as work intensification) have often been underestimated. Only recently has the concept of a 'second victim' been put forth, highlighting that practitioners also suffer after medical errors and require support. Medical ethics needs to acknowledge and incorporate this perspective into a more comprehensive consideration of the experiences of all participants in the natural history of a medical error. Table 1 proposes some research questions that may guide such a future inquiry.

4.1.1.5. Interfacing ethics and communication. Recent research has recognized that appropriate nonverbal communication during

error disclosures can facilitate positive outcomes, suggesting that practitioners' nonverbal communication skills can influence patients' perceptions of the disclosure content. For example, patients who receive disclosures that are characterized by nonverbal expressiveness, composure, and positive affect tend to perceive the consequences of the medical error as less severe. Moreover, such patients are less likely to attribute fault to the practitioner, less likely to switch practitioners, and more likely to perceive the apology as sincere compared to patients who receive nonverbally uninvolved disclosures [5]. Thus, providing a way for practitioners to communicate skillfully might be one step toward more effectively addressing both participant's needs. In addition, it may facilitate a bridging of current interdisciplinary tensions related to the issue of apology. Table 1 provides some future research directions to further clarify the influence of communication competence on disclosure perceptions and outcomes.

4.1.1.6. Interfacing medicine and communication. Practitioners' increasingly positive attitudes toward disclosure have not yet translated into practice, which is a fact that both communication researchers and medical educators find distressing [12,50]. One reason for this unsuccessful failure in translation is inadequate attention to disclosure training in the medical school curriculum. As a start, we recommend surveying medical schools to determine the amount and quality of time medical schools dedicate to addressing medical errors. Burgeoning medical school communications programs using standardized patients provide valuable opportunities for practice. Numerous investigations have shown that practitioners are able to learn communication skills and have evidenced positive results of such communication interventions [75–77].

Regardless of what is taught in the pre-clinical years, as students go onto their clinical rotations, the hospital cultures may not support disclosure. As techniques of effective communication are identified, they can be mandated for inclusion in medical school training by the American Association of Medical Colleges (AAMC). These same principles and guidelines can be incorporated into the ACGME Residency Review Committee (RRC) requirements.

Unfortunately, communication training is infrequently revisited once residency training is completed. Those responsible for teaching trainees are rarely evaluated for their skills in specific areas of communication. We recommend the creation of programs for practitioners that define an approach to addressing medical errors and give these practitioners the opportunity to be observed in meetings with patients and families in non-judgemental feedback sessions that examine both verbal and nonverbal behavior. A close collaboration between the disciplines of medicine and communication can create a valuable body of shared knowledge that would contribute to a set of best error disclosure practices, and would facilitate a collaborative implementation of these practices into training programs for students, residents, and practicing practitioners.

4.2. Conclusion

In sum, the goal of future error disclosure research should be interdisciplinary collaborations that strive to produce coherent, translatable findings. Ideally, these findings should maintain professional and personal integrity by promoting what is in the best interest of practitioners and patients, following the law, and causally predicting positive outcomes for all parties involved. Research that integrates our interdisciplinary perspectives will have the best chance of yielding successful interventions with optimal translational value. After all, it is in the blurred areas

between our disciplines where we are currently losing our translational power; and this is also where we can achieve – through coordinated efforts – disclosure practice that improves quality of care and promotes safer medical practice.

4.3. Practice implications

4.3.1. Building bridges for coherent interventions

Interdisciplinary collaboration is needed to understand the complex web of interrelationships and needs of the diverse stakeholders involved in medical error disclosure. We have tried to suggest areas requiring additional research, educational programs that need to be developed, and changes in the adversarial approach of the legal system, to accommodate the perspectives and needs of patients, families, and their medical practitioners. To be successful, we need to create more professional platforms for such collaborations. For example, they could be promoted at the annual International Conference on Communication in Healthcare, and the educational programs of both the European Academy of Communication in Healthcare (EACH), and the American Academy of Communication in Healthcare (AACH).

A central challenge for all disciplines with professional stake in the management of error disclosure is translating research findings into practice. Given the prevalence of medical errors, the pressure for translation is great. At the same time, the empirical data are not yet sufficient to suggest comprehensive evidence-based disclosure guidelines. However, an ethically justified set of temporary disclosure guidelines should be proposed at this time based on interdisciplinary expert consensus, pending more definitive outcomes-based research. In addition, cross-cultural confirmations of current findings (which have been primarily based on U.S. samples) are needed before they can be translated into disclosure practice in other countries. Also, more research is needed to determine the extent to which disclosure strategies should vary in different contexts, such as primary care, pathology, and pediatrics.

Ethically correct approaches to gathering evidence about the factors influencing disclosure practice and outcomes in actual practice are needed to determine whether findings from studies using hypothetical scenarios are generalizable. For example, interdisciplinary collaborations could facilitate natural experiments examining the effects of different disclosure training programs with the ultimate goal of moving error disclosure research into a direction that is implemented in medical practice. Furthermore, error disclosure research needs to balance clinical and scientific values and model pathways that directly link particular disclosure skills to beneficial disclosure outcomes for all parties involved.

Conflicts of interest

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Appendix A. Medical error vignette

Josh Ricardo, a 24 year old young man, visited Dr. Harvey Brown for a physical that was required for his new job's healthcare plan. During the exam, Dr. Brown performed a testicular exam as is appropriate for the patient's gender and age where he felt a relatively large lump in Mr. Ricardo's right testicle. Dr. Brown was 32, recently graduated from an Internal Medicine training program, and had minimal experience with testicular growths. Knowing that testicular cancer was a serious possibility, Dr. Brown ordered an HCG (Human Chorionic Gonadotropin) blood test, which would be elevated in pregnancy but also in testicular cancer. To Dr. Brown's dismay, the HCG came back 10 x normal. Facing the likelihood of a malignancy, Dr. Brown called Mr. Ricardo, shared the test result and recommended hospitalization.

At the hospital, Dr. Brown met with Mr. Ricardo and his mother, father, two brothers, and sister. Dr. Brown shared his concern and suggested the test be repeated and that a urologist be consulted to provide thoughts on what the next step might be. The family was understandably distraught and spent a very difficult night trying to understand what might happen to their loved one in the event that cancer was confirmed.

The next morning, Dr. Brown was surprised to learn that the repeated HCG was normal, and that the urologist, after examining the patient, felt certain that the "growth" was a benign hydrocele, a collection of fluid that could be easily treated. A third HCG came back as normal suggesting the first test was a lab error. Dr. Brown then spent a very uncomfortable hour at a meeting with the patient and his family. He acknowledged the error and apologized for what he imagined was a painful experience.

Although the patient and the family were relieved, they were angry at the ordeal to which they had been mistakenly subjected. Dr. Brown was certain that he would be named in a negligence lawsuit. He questioned his competence and felt depressed. The patient and family talked after Dr. Brown left and decided that although a serious mistake had occurred, Dr. Brown had been doing his best to care for Mr. Rodrigues which was demonstrated by his availability and concern throughout the experience—which included the medical error disclosure. They forgave Dr. Brown, but asked that the hospital investigate how the lab had erred on the initial test. They also asked why Dr. Brown had not – because of his relative inexperience in testicular exams – called in a more senior person earlier to confirm his findings. The patients' and his family's grievances were treated respectfully and seriously. And, ultimately, Mr. Ricardo chose to remain a patient of Dr. Brown's for many years.

References

- [1] Allan A, McKillop D. The health implications of apologizing after an adverse event. *Int J Qual Health Care* 2010;22:126–31.
- [2] Etchegaray JM, Gallagher TH, Bell SK, Dunlap B, Thomas EJ. Error disclosure: a new domain for safety culture assessment. *Brit Med J Qual Saf* 2012;21:594–9.
- [3] American Medical Association. AMA code of medical ethics; 2013. Available from: <http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics.page>.
- [4] Hannawa AF. "Explicitly implicit": examining the importance of physician nonverbal involvement during error disclosures. *Swiss Med Wkly* 2012;142:w13576.
- [5] Hannawa AF. Disclosing medical errors to patients: the importance of nonverbal involvement; 2013 (under review).
- [6] Mazor KM, Simon SR, Gurwitz JH. Communication with patients about medical errors: a review of the literature. *Arch Intern Med* 2004;164:1690–7.
- [7] Mazor KM, Simon SR, Yood RA, Martinson BC, Gunter MK, Reed GW, et al. Health plan members' views about disclosure of medical errors. *Ann Intern Med* 2004;140:409–18.
- [8] Mazor KM, Reed G, Yood RA, Fischer MA, Baril J, Gurwitz J. Disclosure of medical errors: what factors influence how patients respond? *J Gen Intern Med* 2006;21:704–10.
- [9] Gallagher TH, Studdert D, Levinson W. Disclosing harmful medical errors to patients. *N Engl J Med* 2007;356:2713–9.
- [10] Jeffs L, Berta W, Lingard L, Baker GR. Learning from near misses: from quick fixes to closing off the Swiss-cheese holes. *Brit Med J Qual Saf* 2012;21:287–94.
- [11] Iedema R, Sorensen R, Manias E, Tuckett A, Piper D, Mallock N, et al. Patients' and family members' experiences of open disclosure following adverse events. *Int J Qual Health Care* 2008;20:421–32.
- [12] Varjavand N, Bachegowda LS, Gracely E, Novack DH. Changes in intern attitudes toward medical error and disclosure. *Med Educ* 2012;46:668–77.
- [13] Dekker S. The criminalization of human error in aviation and healthcare: a review. *Saf Sci* 2010;49:121–7.
- [14] Wu AW, Steckelberg RC. Medical error, incident investigation and the second victim: doing better but feeling worse? *Brit Med J Qual Saf* 2012;21:267–70.
- [15] Iedema R, Allen S, Sorensen R, Gallagher TH. What prevents incident disclosure, and what can be done to promote it. *Jt Comm J Qual Patient Saf* 2011;37:409–17.
- [16] Kaldjian LC, Jones EW, Rosenthal GE, Tripp-Reimer T, Hillis SL. An empirically derived taxonomy of factors affecting physicians' willingness to disclose medical errors. *J Gen Intern Med* 2006;21:942–8.
- [17] Banja J. Medical errors and medical narcissism. Sudbury, MA: Jones and Bartlett Publishers Inc.; 2005.
- [18] Hannawa AF. Principles of medical ethics: implications for the disclosure of medical errors. *Medicolegal Bioeth* 2012;2:1–11.
- [19] Hebert PC, Levin AV, Robertson G. Bioethics for clinicians. 23. Disclosure of medical error. *Can Med Assoc J* 2001;164:509–13.
- [20] Paul NW. Clinical ethics counseling: therapeutic goals, the patient's will and decision-making problems in modern medicine. *Formos J Med Humanit* 2010;11:19–36.
- [21] GMC. Good medical practice—guidance for doctors. London: GMC; 2006. Available from: www.gmc-uk.org/guidance/good_medical_practice.asp.
- [22] McDonnell WM, Guenther E. Narrative review: do state laws make it easier to say "I'm sorry"? *Ann Intern Med* 2008;149:811–5.
- [23] Dresser R. The limits of apology laws. *Hastings Cent Rep* 2008;38:6–7.
- [24] Hickson GB. Patients' complaints and malpractice risk. *J Amer Med Assoc* 2002;287:2951–7.
- [25] Stephen F, Melville A, Krause T. A study of medical negligence claiming in Scotland. *Scottish Government Social Research*; 2012.
- [26] Mazor KM, Goff SL, Dodd KS, Veltin SJ, Walsh KE. Parents' perceptions of medical errors. *J Patient Saf* 2010;6:102–7.
- [27] Mazor KM, Greene SM, Roblin D, Lemay CA, Firreno CL, Calvi J, et al. More than words: patients' views on apology and disclosure when things go wrong in cancer care. *Patient Educ Couns* 2011. <http://dx.doi.org/10.1016/j.pec.2011.07.010>.
- [28] Mazor KM, Goff SM, Dodd K, Alper EJ. Understanding patients' perceptions of medical errors. *J Commun Healthc* 2009;2:34–46.
- [29] Wright J, Opperman G. The disclosure of medical errors: a catalyst for litigation or the way forward to better patient management. *Clin Risk* 2008;14:193–6.
- [30] Vines PE. Apologies and civil liability in England, Wales and Scotland: the view from elsewhere. *Edinb Law Rev* 2007;12:200–30.
- [31] Wu AW. Handling hospital errors: is disclosure the best defense? *Ann Intern Med* 1999;131:970–2.
- [32] Brazier M, Cave E. Medicine, patients and the law. 5th ed. London: Penguin Books; 2011.
- [33] Kapp MB. Assorted legal issues affecting medical practice. *Chest* 2010;137:1190–4.
- [34] Scottish Government. No fault compensation review group: report and recommendations. Edinburgh: The Scottish Government; 2011.
- [35] Jackson E. Medical law: text, cases and materials. Oxford: Oxford University Press; 2010.
- [36] Thomson J. Delictual liability. 4th ed. London: Tottel Publishing; 2009.
- [37] Bourne RW. Medical malpractice: should courts force doctors to confess their own negligence to their patients? *Ark Law Rev* 2009;61:621–71.
- [38] Raper SE. No role for apology: remedial work and the problem of medical injury. *Yale J Health Policy Law Ethics* 2011;267:267–330.
- [39] Hyman DA. When and why lawyers are the problem. *De Paul Law Rev* 2008;57:267–80.
- [40] Tabler NG. Should physicians apologize for medical errors. *Health Lawyer* 2007;19:23–6.
- [41] Lansley A. Patient safety in the NHS: Lansley speech. Department of Health; 2010.
- [42] Whitehouse S. Culture of candour versus duty of disclosure. Medical protection society. UK Casebook 2010;18:10–1.
- [43] Spotlight on complaints. A report on second stage complaints about the NHS in England. London: Healthcare Commission; 2008.
- [44] Studdert DM, Mello MM, Gawande AA, Brennan TA, Wang YC. Disclosure of medical injury to patients: an improbable risk management strategy. *Health Aff (Millwood)* 2007;26:215–26.
- [45] Kachalia A, Kaufman SR, Boothman R, Anderson S, Welch K, Saint S, et al. Liability claims and costs before and after implementation of a medical error disclosure program. *Ann Intern Med* 2010;153:213–21.
- [46] Murtagh L, Gallagher TH, Andrew P, Mello MM. Disclosure-and-resolution programs that include generous compensation offers may prompt a complex patient responses. *Health Aff (Millwood)* 2012;31:2681–9.
- [47] Dintzis SM, Stetsenko GY, Sitlani CM, Gronowski AM, Astion ML, Gallagher TH. Communicating pathology and laboratory errors: anatomic pathologists' and laboratory medical directors' attitudes and experiences. *Am J Clin Pathol* 2011;135:760–5.
- [48] Evans SM, Berry JG, Smith BJ, Esterman AJ. Anonymity or transparency in reporting of medical error: a community-based survey in South Australia. *Med J Aust* 2004;180:577–80.
- [49] O'Connor E, Coates HM, Yardley IE, Wu AW. Disclosure of patient safety incidents: a comprehensive review. *Int J Qual Health Care* 2010;22:371–9.
- [50] Burgoon JK, Bacue AE. Nonverbal communication skills. In: Burleson BR, Green JO, editors. Handbook of communication and social interaction skills. Mahwah, NJ: Lawrence Erlbaum Associates; 2003. p. 179–219.
- [51] Mehrabian A, Ferris SR. Inference of attitudes from nonverbal communication in two channels. *J Consult Psychol* 1967;31:248–52.
- [52] Burgoon JK. Nonverbal signals. In: Miller GR, Knapp ML, editors. Handbook of interpersonal communication. 2nd ed., Thousand Oaks, CA: Sage; 1994. p. 229–85.
- [53] McMahan EM. Nonverbal communication as a function of attribution in impression formation. *Commun Monogr* 1976;43:287–94.
- [54] Harrigan JA, Oxman TE, Rosenthal R. Rapport expressed through nonverbal behavior. *J Nonverbal Behav* 1985;9:95–110.

- [59] Lazare A. Apology in medical practice: an emerging clinical skill. *J Amer Med Assoc* 2006;296:1401–4.
- [60] Christmas C, Ziegelstein RC. The seventh competency. *Teach Learn Med* 2008;21:159–62.
- [61] Bonnema RA, Gonzaga AM, Bost JE, Spagnoletti CL. Teaching error disclosure: advanced communication skills training for residents. *J Commun Healthc* 2012;5:51–5.
- [62] Gunderson AJ, Smith KM, Mayer DB, McDonald T, Centomani N. Teaching medical students the art of medical error full disclosure: evaluation of a new curriculum. *Teach Learn Med* 2009;21:229–32.
- [63] White AA, Bell SK, Krauss MJ, Garbutt J, Dunagan W, Claiborne W, et al. How trainees would disclose medical errors: Educational implications for training programmes. *Med Educ* 2011;45:372–80.
- [64] Kronman AC, Paasche-Orlow M, Orlander JD. Factors associated with disclosure of medical errors by housestaff. *Brit Med J Qual Saf* 2012;21:271–8.
- [65] Kaldjian LC, Jones EW, Wu BJ, Forman-Hoffman VL, Levi BH, Rosenthal GE. Disclosing medical errors to patients: attitudes and practices of physicians and trainees. *J Gen Intern Med* 2007;22:988–96.
- [66] Rathert C, Phillips W. Medical error disclosure training: evidence for values-based ethical environments. *J Bus Ethics* 2010;97:491–503.
- [67] McDaniel S, Beckman HB, Morse D, Silberman J, Seaburn D, Epstein RM. Enough about you, let's talk about me: physician self-disclosure in primary care visits. *Arch Intern Med* 2007;167:1321–6.
- [68] West CP, Huschka MM, Novotny PJ, Sloan JA, Kolars JC, Habermann TM, et al. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. *J Amer Med Assoc* 2006;296:1071–8.
- [69] Mazor KM, Roblin DW, Greene SM, Lemay CL, Firreno CL, Calvi J, et al. Towards patient-centered cancer care: Patient perceptions of problematic events, impact, and response. *J Clin Oncol* 2012;30:1784–90.
- [70] Recent developments in the U.K. may however address (or exacerbate) this issue, see Sofia Lind, 'GPs to be given legal 'duty of candour' to highlight bad patient care,' 26th March 2013 available at <http://www.pulsetoday.co.uk/your-practice/practice-topics/regulation/gps-to-be-given-legal-duty-of-candour-to-highlight-bad-patient-care/20002426.article#.UYOzYcrvh-A> [accessed 03.05.13].
- [71] 'Improving the NHS Constitution', The Department of Health, 26th March 2013, at <https://www.gov.uk/government/consultations/improving-the-nhs-constitution>.
- [72] Roger Kline 'Never again – Jeremy Hunt's response to the Francis Report is inadequate', available at <http://www.opendemocracy.net/our-nhs/roger-kline/never-again-jeremy-hunt%E2%80%99s-response-to-francis-report-is-inadequate> [accessed 03.05.13]; see also 'The Report of the Independent Inquiry into Care Provided by Mid Staffordshire NHS Foundation Trust (The Francis Report)', February 2013. Available at <http://www.midstaffsinquiry.com/press-release.html> [accessed 03.05.13].
- [73] 'The Government's Response to the Francis Report'. Available at <https://www.gov.uk/government/speeches/the-government-s-response-to-the-francis-report> [accessed 03.05.13].
- [74] Beauchamp TL, Childress JF. Principles of biomedical ethics. 6th ed. Oxford: Oxford University Press; 2009.
- [75] Brown RF, Bylund CL, Gueguen JA, Diamond C, Eddington J, Kissane D. Developing patient-centered communication skills training for oncologists: describing the content and efficacy of training. *Commun Educ* 2010;59:235–48.
- [76] Harrington NG, Norling GR, Witte FM, Taylor J, Andrews JE. The effects of communication skills training on pediatricians' and parents' communication during "sick child" visits. *Health Commun* 2007;21:105–14.
- [77] Rosenthal R, Hall JA, DiMatteo MR, Rofers PL, Archer D. Sensitivity in nonverbal communication: the PONS test. Baltimore, MD: Johns Hopkins University Press; 1979.