When facing our fallibility constitutes "safe practice": Further evidence for the *Medical Error Disclosure Competence* (MEDC) guidelines

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ABSTRACT

Objective: This study pursues further empirical validation of the "Medical Error Disclosure Competence (MEDC)" guidelines. The following research questions are addressed: (1) What communicative skills predict patients' perceived disclosure adequacy? (2) To what extent do patients' adequacy perceptions predict disclosure effectiveness? (3) Are there any significant sex differences in the MEDC constructs?
Methods: A sample of 193 respondents completed an online survey about a medical error they experienced in the past 5 years, and about the subsequent disclosure of that error to them.
Results: One in four patients had experienced a medical error, only a third of them received a disclosure. Only *interpersonal adaptability* influenced disclosure adequacy, with a large effect size. Adequacy, in turn, predicted both patients' relational distancing and approach behaviors. Nonverbally skillful disclosures significantly decreased the likelihood of patient trauma. Expressions of remorse significantly increased patient resilience. Nonverbal skills (-) and a full account (+) predicted patients' tendency to harm themselves. Males were more reactive to disclosures than female patients.
Conclusion: MEDC guidelines-adherent disclosure communication maintains the provider-patient relationship, increase patient resilience, and decreases patient trauma after a medical error.
Practice implications: Given the results of this study, adherence to the MEDC-guidelines must be considered "safe practice."

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1. Introduction

Dr. Hilfiker's groundbreaking article "Facing our mistakes" in 1984 [1] first introduced *medical error disclosure* from a physician's point of view as a complex moral dilemma. Since then, publications on this topic have proliferated, discussing the ethical imperative to disclose, common barriers to disclosure, legal implications, and the need to attend to "second victims" [2–4]. In the meantime, countries all over the world have established "apology laws" to protect disclosures from being used as proof of liability in court [5–7]. In all, disclosing mistakes has become a widely accepted practice standard across disciplines [2,8–11], and many countries have established national guidelines that encourage the disclosure of adverse events to patients [12].

Moving beyond the initial question whether or not to disclose and empirical examinations of optimal disclosure contents, research has increasingly focused on the disclosure *process*. For example, it has shed light onto *under what circumstances* to disclose, *what* to disclose, *how* to disclose, *objective outcomes* of

disclosures for patients, the "second victim," the provider-patient relationship, and healthcare institutions at large [4,13–19]. The conclusions are clear: To err is human. In the context of healthcare, such errors cause (and will continue to cause) patient harm. Disclosure is the process that will either ameliorate or aggravate that inflicted harm [13]. Thus, scientific evidence is needed to define the criteria that constitute "safe" (vs. unsafe) disclosures of medical errors to patients.

This paper reports the results of a study that was conducted as part of a larger grant-funded project that set out to develop such evidence-based "safe disclosure" guidelines, grounded in a theoretically based "Medical Error Disclosure Competence (MEDC)" model (see Exhibit 1). A total of three studies were conducted under this grant: The first study [14] introduced a well-known competence model from the communication sciences to the error disclosure literature. Using a focus group design, it informed the concrete disclosure processes that facilitate optimal versus detrimental outcomes for patients, providers and healthcare institutions. This first investigation [14] summarized its focus group data into a first draft of theoretically based, empirically informed "Medical Error Disclosure Competence (MEDC) Guidelines."

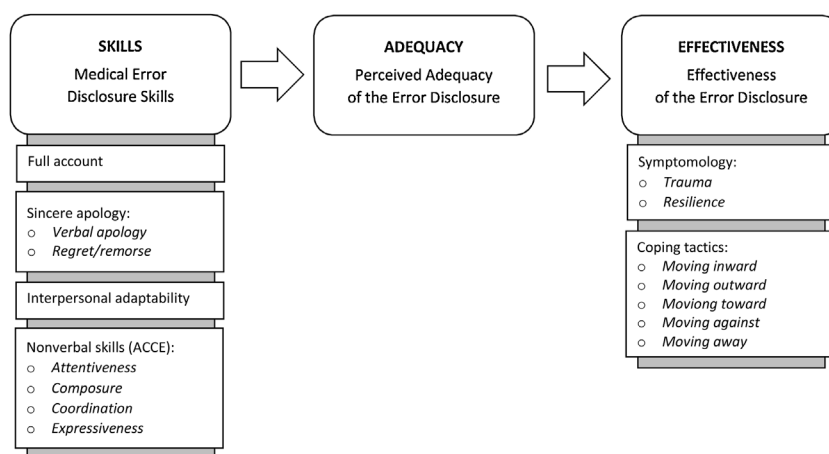*E-mail address:* hannawaa@usi.ch (A.F. Hannawa).

Exhibit 1. Medical Error Disclosure Competence (MEDC) Model.

The second study [13] implemented an experimental design to contribute causality evidence to these preliminary MEDC guidelines. For this purpose, sixteen succinct disclosure styles were derived from the focus group data. These disclosure styles were operationalized by sixteen experimentally controlled video vignettes, which were randomly assigned to a large sample of patients who rated the disclosures based on MEDC-based Likert-scaled items. The results of this second study [13] partially validated and further refined the preliminary MEDC Guidelines.

This third (current) study empirically tests the MEDC model using a retrospective design in order to overcome the methodological limitations of the preceding investigations. Specifically, it compensates for the lack of generalizability of the focus group data (in study 1) and the hypothetical self-report data (in study 2). It also tests the effects of one of the MEDC's SKILLS (i.e. "interpersonal adaptability", see Exhibit 1) that could not be measured in the second study due to unsuccessful experimental manipulation [13]. Thus, it validates the extent to which physicians' *ability to adapt to patients' expressed needs and expectations during a disclosure* constitutes a "safe practice" skill in the context of medical error disclosure.

In sum, extending the previous data, this study provides further scientific evidence for the following research questions:

RQ 1: What communicative disclosure skills (SKILLS) are predictive of patients' perceived ADEQUACY of a disclosure?

RQ 2: To what extent do patients' ADEQUACY perceptions predict their post-disclosure symptoms and behaviors (EFFECTIVENESS)?

RQ 3: Are there significant differences in any of the MEDC constructs with respect to patients' gender?

2. Methods

2.1. Data collection

A survey company was hired to collect representative data from the German-speaking part of Switzerland. Respondents were eligible to participate in the anonymous online survey if they were at least 18 years of age and if they had experienced an error disclosure in their healthcare during the past five years. To avoid "heavy online user" bias and ensure diversity, participants were contacted via multiple channels (i.e. print, online medial, social media and telephone). After providing informed consent, qualified patients were first asked to describe their medical error. Then, they answered 23 questions about their disclosure experience (e.g. contextual features of their disclosure, such as the physical setting,

participants, etc.; the MEDC constructs; and general demographic items). The data collection was conducted in October 2016.

2.2. Measures

Consistent with the MEDC model (Exhibit 1), disclosure SKILLS were assessed by the following four Likert-scaled variables: *Full account, sincere apology, interpersonal adaptability*, and *non-verbal skills*. Full account was measured by a unidimensional scale (6 items, e.g. "The disclosure was sufficiently informative," "The disclosure was comprehensive in content"; Cronbach's $\alpha = .89$). Sincere apology was measured by *verbal apology* (1 item: "The physician sincerely said s/he's sorry") and *expressions of regret/remorse* (5 items, e.g. "The physician really seemed to regret the incident"; Cronbach's $\alpha = .80$). Interpersonal adaptability was measured by a 5-item scale that assessed the extent to which the physician adapted to the patient's explicitly and/or implicitly expressed needs and expectations during the disclosure (Cronbach's $\alpha = .87$). The abovementioned measures had been developed and validated in the context of the previous study [13]. Nonverbal skills were measured by the *attentiveness, composure, coordination* and *expressiveness* dimensions of the validated *Conversational Skills Rating Scale* (CSRS) 20-item short version [8]. The measure was reliable with Cronbach's $\alpha = .90$.

Patients' perceived ADEQUACY of their physician's disclosure was measured by a contextually adapted version of the validated *appropriateness* subscale of the IMPACCT Impression/Quality Outcomes measure (e.g. "The physician made sure that his/her comments and behaviors were appropriate for the situation) [9]. The 4-item Likert-scale was reliable (Cronbach's $\alpha = .73$).

EFFECTIVENESS of the disclosures was measured by contextually adapted Likert-type subscales of the validated *Typologies of Symptomology and Coping Tactics* [10]. The symptomology subscales assessed patients' disclosure-induced *trauma* (8 items, Cronbach's $\alpha = .85$) and *resilience* (5 items, Cronbach's $\alpha = .84$). Patients' *coping tactics* were assessed by five subscales: *Moving inward* (1 item indicating self-harm: "I tried to escape the problem destructively, e.g. by consuming drugs and/or alcohol"), *moving outward* (1 item: "I sought social support from others, e.g. emotional or tangible support from my friends and/or family"), *moving toward* (e.g. "I sought further encounters with the physician;" Cronbach's $\alpha = .74$), *moving away* (5 items, e.g. "I limited my future interactions with the physician;" Cronbach's $\alpha = .74$), and *moving against* (4 items, e.g. "I sought revenge", e.g. by evaluating the physician negatively on the internet, informing the media, etc.;" "I pursued a law suit;" Cronbach's $\alpha = .82$).

2.3. Statistical data analysis

The IBM software SPSS (version 25) was used for statistical analysis of the data. Stepwise regression analyses were performed to examine the linear associations between SKILLS and ADEQUACY, and between ADEQUACY and EFFECTIVENESS, as theorized by the MEDC model (see Exhibit 1). Analyses of Variance (ANOVAs) were conducted to test for potential gender effects in the MEDC constructs. Statistical significance was tested based on an a priori $\alpha = .05$.

3. Results

In all, 2.792 individuals accessed the survey link. One in four patients (24.5%, $N = 685$) indicated that they had experienced a medical error at least once in their life. Only a third (32.7%, $N = 224$) of these patients received a disclosure, 86% of them completed the survey. This final sample of patients ($N = 193$) was gender-equivalent (49% males, 51% females), averaging 45 years of age ($M =$ 44.58, $SD = 15.92$). Additional patient demographics are provided in Exhibit 2 .

Most of the reported medical errors had occurred either at public hospitals (36%) or at doctor's offices (39%). Fewer happened at university hospitals (14%), private hospitals (9%) or elsewhere (2%; e.g. dentistry, pharmacy). The reported incidents mostly encompassed *diagnostic errors* ($N = 79$; incl. 53 misdiagnoses, 4 missed and 23 delayed diagnoses), followed by *surgical errors* ($N = 48$, incl. 6 wrong-site, 3 unindicated, 4 incomplete surgeries and 3 surgeries with retained objects), *medication errors* ($N = 35$, incl. 21 cases of misuse, 4 overuse, 4 underuse, and 3 unindicated use), *treatment errors* ($N = 15$, incl. 9 cases of misuse, 4 overuse and 1 unindicated use), and *communication errors* ($N = 4$; e.g. wrong discharge instructions, insufficient discussion of allergies, treatment against patient's expressed will, etc.). Twelve (6%) of the reports did not contain sufficient information for error classification.

Half of the patients (50%) attributed their error to *one* responsible clinician. Almost all of the reported disclosures

Patients (*n* = 193)	Age – mean (*SD*)	44.58 (*15.92*)
	Male – number (%)	49%
	Female – number (%)	51%
	Religion – number (%)	
	Christian	58%
	Agnostic	34%
	Islamic	4%
	Other	4%
	Highest education – number (%)	
	Elementary school	5%
	High school	14%
	Profession-specific education after high school	47%
	College or university degree	34%
	Patients with experience working in a doctor's office of hospital – number (%)	19%
Medical error	Where did the error occur? – number (%)	
	At a university hospital	14%
	At a private hospital	9%
	At a public hospital	36%
	At a doctor's office	39%
	Elsewhere (e.g. pharmacy, dentistry)	2%
Error disclosure	Where did the disclosure take place? – number (%)	
	At the hospital where the error occurred	46%
	At a different hospital	14%
	At the doctor's office where the error occurred	25%
	At a different physician's office	15%
	How many people, besides you, participated in the disclosure? – mean (*SD*)	1.82 (*1.70*)
	Were the people responsible for the error present at the disclosure? – number (%)	
	Yes, all of them	33%
	Most of them	9%
	A few of them	6%
	No, none of them	46%
	I don't remember	2%
	I don't know who made the error	4%
	Who primarily led the disclosure conversation with you?	
	The physician who made the error	40%
	A different physician	51%
	The nurse who made the error	1%
	A different nurse	4%
	The hospital director	1%
	A different person (e.g. parents, physical therapist)	3%
	Patients (number %) who indicated that they pursued a lawsuit after the disclosure.	11%

Exhibit 2. Participants' socio-demographic data and data on the medical error.

(96%) took place in direct conversations, 2% were conducted on the phone, and 2% in writing. Most of them transpired at the hospital (46%) or doctor's office (25%) where the error had taken place. Fewer were disclosed at a different hospital (14%) or doctor's office (15%). During almost half of the disclosures (48%), at least one of the responsible clinicians were present. In 46% of the cases, *none* of the responsible staff participated in the disclosure. The remaining patients either did not know who made the error (4%) or did not remember whether the responsible staff was present at the disclosure (2%). Less than half of the disclosure conversations were led by the physician (40%) or nurse (1%) who made the error, about half by a different physician (51%) or nurse (4%), or by someone else (4%). Only in *one* of the 193 reported cases, the error was disclosed by a hospital director (see Exhibit 2).

3.1. Disclosure skills and perceived disclosure adequacy

The MEDC model's four SKILLS variables (i.e. *full account, sincere apology, interpersonal adaptability, nonverbal skills;* see Exhibit 1) were entered into a stepwise regression to identify which were most predictive of patients' ADEQUACY judgments. Only the linear relationship between *interpersonal adaptability* and ADEQUACY was significant, and its effect size was large: Approximately 64% of the variance in ADEQUACY was accounted for by its linear relationship with *interpersonal adaptability* (R^2_{adj} = .64). For every one standard deviation increase in physician's interpersonal adaptability, patients' perceived adequacy of the disclosure increased by .80 standard deviation (t = 13.716, $p <$ .001).

3.2. Perceived disclosure adequacy and post-disclosure behaviors

Among the EFFECTIVENESS scales, ADEQUACY only predicted patients' *moving away* (i.e. relational distancing) and *moving toward* (i.e. relational approach) behaviors after the disclosure. Approximately 7% of the variance in *moving away* was accounted for by its linear relationship with ADEQUACY (t = -3.21, $p <$ .01, R^2_{adj} = .07). For every one standard deviation increase in patients' perceived ADEQUACY of the disclosure, patients' relational distancing behaviors decreased by .28 standard deviation. Similarly, about 6% of the variance in *moving toward* was accounted for by ADEQUACY (t = -2.52, $p =$ .01, R^2_{adj} = .06). For every one standard deviation increase in patients' perceived ADEQUACY of the disclosure, patients' relational approaching behaviors increased by .25 standard deviation.

Additional regression analyses were performed to explore if any of the SKILLS variables had direct effects on the EFFECTIVENESS variables. Three such effects were found. First, disclosures with higher *nonverbal skills* significantly decreased patients' *trauma* with respect to their social relationships (e.g. expressing unjustified anger toward others, overreacting about what others say or do, avoiding social contacts, etc.; t = -2.27, $p =$ .02, R^2_{adj} = .04, β = -.19). Second, disclosures with higher expressions of *remorse* significantly increased patients' *resilience* in their personal lives (e.g. feeling renewed and strong about taking control over their own life again; t = -2.20, $p =$ .03, R^2_{adj} = .02, β = .15) and *openness* (e.g. feeling that they can adapt to any situation and profit from anything that happens in their life; t = 2.28, $p =$ .02, R^2_{adj} = .03, β = .18). Third, approximately 12% of the variance in patients' destructive *moving inward* behaviors (i.e. harming themselves) was accounted for by physicians' *nonverbal skills* (-) and provision of a *full account* (+) during the disclosure (R = .28, SE = 1.13, F (2,7437) = 316.98, $p <$ .01): For every one standard deviation increase in *nonverbal skills*, patients' *moving inward* (i.e. self-harming) behaviors decreased by .53 standard deviation (t = -2.84, $p <$ .01, R^2_{adj} = .05), and for every one standard deviation increase in the physician's provision of a *full account*, patients' *moving*

inward (i.e. self-harming) behaviors *increased* by .41 standard deviation (t = 2.01, $p <$ .05, R^2_{adj} = .08).

3.3. Gender differences in the MEDC model

Female patients (M = 2.02, SD = .88) were significantly less likely to *move toward* (i.e. approach) their physician after the error disclosure compared to male patients (M = 2.38, SD = 1.02; t = 2.41, p = .02). Female patients (M = 1.44, SD = .67) were significantly less likely to *move against* (i.e. attack) their physician after the disclosure compared to male patients (M = 2.09, SD = 1.11; t = 4.47, $p <$ .01). Female patients (M = 1.23, SD = .96) were also significantly less likely to *move inward* (i.e. harm themselves) after a disclosure compared to male patients (M = 2.11, SD = 1.22; t = 4.63, $p <$ .01). No additional gender effects were found.

4. Discussion and conclusion

4.1. Discussion

The purpose of this study was to identify the disclosure skills that mobilize patients' adequacy perceptions and, in turn, trigger beneficial disclosure outcomes. Several results were found. First, this study evidenced that while errors are common, disclosure still remains rare: While one in four patients had experienced a medical error during the past five years of their medical care, only every third of these patients received a disclosure. Given the diverse sample, this study also encompassed disclosures that took place beyond the hospital setting – such as in private praxes, at a dentistry or pharmacy. Although most of the disclosures took place at the institution where the error had occurred, only half of them were attended by the clinician(s) who committed the error. These troublesome statistics evidence that *safe disclosure practice* remains an urgent challenge in Swiss healthcare, like in other countries as well [20–22].

The findings of this study provide further scientific evidence for the MEDC-based "safe disclosure" guidelines (see Exhibit 3) that had been established and refined by the previous investigations under this grant [13,14]. This current study largely replicated the results of these previous investigations, evidencing that providers' disclosure SKILLS affect patients' perceptions of ADEQUACY and predict beneficial or harmful disclosure outcomes (EFFECTIVENESS). When patients perceive their physician's communication as adequate, they experience disclosures as *enhancing* the relationship. When they perceive it as inadequate, they *distance* themselves from their physician.

A new finding of this study relates to patients' predisposition to harm themselves after a disclosure. This inclination was to some extent influenced by sex (i.e. male patients were generally more likely to harm themselves than female patients), but more so by providers' disclosure SKILLS. When providers conducted the disclosure in a nonverbally skillful way, then patients were *less* likely to harm themselves in response to the disclosure. If providers gave an explanatory account that overwhelmed the patient, patients were *more* likely to harm themselves in response to the disclosure. This finding underlines the importance of a *core* communication skill that has found insufficient discussion in the literature so far: Interpersonal adaptability, i.e. *adapting one's communication spontaneously to patients' ad-hoc expressed needs and/or expectations during a disclosure*, is more important than standardizing message content. In this study, *interpersonal adaptability* predicted a large amount (64%) of the variance in patients' perceived ADEQUACY of the disclosure. Consistent with the tendency to supply personalized care, interpersonal adaptability is a skill that can be standardized to ensure that the *extent* of an account (and the disclosure in general) is appropriate *for each*

patient. In other words, it maximizes the adequacy of a disclosure *for each patient* (which varies by patient [14]) – and thereby facilitates a host of positive disclosure outcomes on a grander scale.

This study further evidences that the explicit statement of a verbal apology (i.e. "I am sorry") is *not* a necessary component of safe disclosures. Ethicists, healthcare professionals and patients perceive the expression of an apology as appropriate and necessary [23,24]. Some studies have shown that apologizing can help resolve conflict and avoid litigation [25–27]. But the empirical evidence on the relationship between apologies and malpractice claims remains inconsistent [28,29]. Like the previous (experimental) study under this grant [13], the current study found no significant effects of stating a verbal apology (i.e. saying "I am sorry") on patients' pursuit of a lawsuit. Given that no research to date has associated *apologies* with objective disclosure outcomes (beyond limited evidence on the potential avoidance of malpractice claims) and given that apologies may backfire if they are accompanied by inadequate nonverbal skills (i.e. if patients perceive them as unauthentic [13,30]), stating an explicit verbal apology does *not* constitute "safe practice" and thus ought to be removed from disclosure guidelines.

This study was the first to evidence that male patients are more likely to harm themselves, attack and approach physicians after a disclosure. Thus, male patients seem to be more reactive than female patients in the context of medical error disclosure. More research is needed to further validate the significance of these gender effects in other samples and, if they persist, examine the necessity of potential gender-specific "safe practice" guidelines for medical error disclosures.

An inevitable limitation of this study is its retrospective design. Research has shown that human recall of communication patterns is quite weak. At the same time, our ability to recall information is positively affected by our emotional state and anxiety: People who are more anxious (like it is the case during error disclosures) recall more information [31]. Consistent with this evidence, the patients in this study provided lengthy case descriptions with precise language, which may constitute evidence for good recall. Whether or not this is true – studying actual error disclosures in vivo would be an

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In preparation for the disclosure, take into account the following *contextual* considerations:

(1) Decide whether the disclosure is beneficial to the patient's health condition; if not, consider disclosing the error to a family member instead, or disclose it later when the patient is stable.
(2) If possible, the patient should bring a care companion to the disclosure.
(3) Invite a neutral (external) third party to the disclosure (as a person of trust for the patient).
(4) Be prepared to send the patient a written account after the disclosure so the patient can revisit and better understand the communicated information (*if* desired by the patient).
(5) Make sure to schedule plenty of time for the disclosure (no time pressure would be ideal).
(6) Recognize the disclosure as a gradual, sequential conversation (there will be more than one meeting with the patient, the patient will need time to process and revisit the information).

DO NOT invite too many care participants to the disclosure – the number of clinicians should *not* outnumber the patients' side.
DO NOT disclose an error over the phone or in writing.

Enter the disclosure with the *motivation* to…

(1) establish a close, trusting relationship with the patient (as a foundation for mutual empathy).
(2) maintain your relationship with the patient (opening the door for the patient to return in the future).
(3) invest into the relationship with the patient ("paying for" the error in "relational" terms).
(4) demonstrate relational sincerity (take the patient seriously, convey genuine respect).
(5) straighten things out for the patient (e.g., in light of the error's impact on the patient's life).
(6) alleviate the implications of the error for the patient's personal and professional life.

DO NOT appear avoidant, distant, or defensive.

Enter the disclosure with informed *knowledge* about the patient's…

(1) informational preferences (i.e., participatory or authoritarian care style preference).
(2) medical history/records.
(3) personal preferences (e.g., what type of person the patient is, what the patient [doesn't] want).

DO NOT enter the disclosure unprepared.

During the disclosure, demonstrate the following *communication skills*:

(1) *Attentiveness* (i.e. sit in front or next to the patient; directly face the patient; occasionally lean toward the patient; make appropriate eye contact with the patient; look at the patient while s/he talks; show the patient that you are listening to him/her; show the patient that you have made it a priority to be here with him/her; seek personal contact with the patient and take his/her comments seriously; demonstrate a certain devotion to the patient's needs; show the patient that you truly care for his/her health and well-being).
(2) *Composure* (i.e. humbly try to calm down the situation; use a calm voice; calmly explain what happened; talk with calm confidence).
(3) *Coordination* (i.e. pause occasionally/appropriately to give the patient an opportunity to react).

Exhibit 3. Final evidence-based *Medical Error Disclosure Competence* (MEDC) Guidelines for Safe Disclosure.

unfeasible approach, both methodologically and also in the context of increasing sensibility with respect to data protection. Thus, the retrospective design used in this study constitutes the best available approach to circumvent *hypothetical* disclosures, which were a core limitations of the preceding experimental investigation [13] under this grant. And it constitutes the best possible methodological design to allow for causality inferences, because patients rated their disclosure (at time 1) and then their subsequent behavior in direct response to that disclosure (at time 2).

4.2. Conclusion

This study, like the previous investigations under this research grant, evidenced that MEDC-adherent disclosure communication maintains the provider-patient relationship, increases patient resilience, and decreases trauma after a medical error. Disclosure communication that does *not* adhere to these guidelines, on the other hand, causes patients to distance themselves from their physician and increases the likelihood of trauma. Thus, *how* this inevitable communication is conducted determines whether disclosure outcomes will be beneficial or detrimental to the patient and the provider-patient relationship. In that light, adherence to the MEDC-guidelines must be considered "safe practice."

4.3. Practice implications

The combined results of the three complementary studies that were conducted under this grant (including [13,14]) provide a validated version of the MEDC guidelines (see Exhibit 3), which can

(4) *Expressiveness* (i.e. display a small smile when you enter the room; use a kind tone of voice; talk to the patient very clearly; try to talk in simple terms; be empathic but do not get too emotional – remain informative and clear).

(5) *Interpersonal adaptability* (i.e. react to any cognitive, linguistic, informational and/or emotional needs/expectations that the patient expresses, verbally *or* nonverbally, during the disclosure conversation; feel out the patient and see how s/he reacts; for example, be sensitive to the patient's needs to decide something on his/her own; adapt to the patient's language, check whether the patient understands what you are saying; try to get inside the patient's head and skin; get a feel of how much information the patient needs so s/he does not get overwhelmed; see whether the patient needs a caring hand on the shoulder).

DO NOT introduce physical barriers to the conversation (e.g. a desk or stacked-up charts in between you and the patient; a ringing phone or beeper).

DO NOT use technical language or medical terms that the patient cannot understand.

During the disclosure, make sure to explicitly state the following *contents*:

(1) Be as open, honest, transparent, and authentic in your communication as possible.

(2) Assume *responsibility* for the error.

(3) Convey that you are truly experiencing *remorse and regret*, instead of merely *saying* that you're sorry. Patients are more attuned to your behaviors than to your words, and they will believe your nonverbal communication more than what you say!

(4) Provide an *explanation* of (a) what happened to this point in time (chronologically), (b) why the patient is there, (c) why and how this could happen, (d) what should have been done, and (e) if applicable, what the patient needs to do now as a consequence of the error (e.g., adjusted behaviors/medication intake etc.). Succinctly and clearly discuss the (f) consequences of the error and (g) corrective steps that will be taken.

(5) Discuss what you will do / suggest do to next to correct the situation and/or repair the consequences of the error for the patient.

(6) Discuss how you intend to repair the patient's *health* (so that the patient feels better).

(7) Offer the patient *psychological* support.

(8) If applicable, offer the patient *financial* reparation (i.e. that any extra costs will be covered).

(9) If applicable, discuss how you intend to repair the patient's *professional life* (e.g., offer to inform the patient's employer).

(10) Ensure *future forbearance* by stating that you will actively engage in an investigation to reflect and draw consequences from this experience to prevent similar errors in the future (conveying that the error didn't happen for nothing, but that it led to improve things).

DO NOT ramble around.

DO NOT ignore or deny the error.

DO NOT downplay the situation / make seem everything half as bad.

DO NOT display any arrogance whatsoever.

Maintain your communication skills! Give the patient opportunities to *ask questions*; keep your calm voice; stay attuned and adapt your informational contents to the patients' needs and expectations; pay close attention to the patient while you explain things; keep your own nonverbal displays in mind and be careful not to overwhelm the patient.

Exhibit 3. (Continued)

be summarized by the following five evidence-based assertions about *safe disclosure*:

1 The explicit statement of a verbal apology is not helpful – and risky, if it is accompanied by inadequate nonverbal skills. All three studies evidenced that *nonverbal communication* that conveys authentic and sincere remorse is more important than saying "I'm sorry."
2 Expressing *sincere remorse* during a disclosure strengthens patients. Patients remember providers' nonverbal expressions of remorse and it makes them resilient.
3 A full explanatory account can harm patients. Instead, the practice of *interpersonal adaptability* as a communicative skill needs to be considered *critical* for safe disclosures (i.e. the ability to spontaneously adapt the extent of the explanatory account to the cognitive, linguistic, emotional and/or informational needs and expectations of each individual patient). These patient needs and/or expectations must not be assumed, but *decoded* from patients' verbal and nonverbal expressions *during* the disclosure. A shared understanding of these expressed needs and expectations must be validated *in conversation* with the patient.
4 *Nonverbal skills* (particularly nonverbal attentiveness) during a disclosure can have either healing or harming effects on patients and on their social relationships, depending on how well they are practiced!
5 *Interpersonal adaptability* must be considered a gold standard for safe error disclosures. It is a skill that patients both *expect and remember* after a disclosure. Thus, providers' ability to personalize their care communication to each patient's needs and expectations impacts patients' perceived adequacy of the disclosure. This association is unaffected by patient gender. Adequacy then triggers patients to *approach rather than distance themselves* from their physician in the aftermath of an error.

Conflict of interest

None.

Acknowledgments

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