BMJ Open Quality

Adverse events and perceived abandonment: learning from patients' accounts of medical mishaps

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To cite: Schlesinger M, Dhingra I, Fain BA, *et al*. Adverse events and perceived abandonment: learning from patients' accounts of medical mishaps. *BMJ Open Quality* 2024;**13**:e002848. doi:10.1136/bmjoq-2024-002848

Received 11 April 2024
Accepted 10 July 2024

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ABSTRACT

Background Adverse medical events affect 10% of American households annually, inducing a variety of harms and attitudinal changes. The impact of adverse events on perceived abandonment by patients and their care partners has not been methodically assessed.

Objective To identify ways in which providers, patients and families responded to medical mishaps, linking these qualitatively and statistically to reported feelings of abandonment and sequelae induced by perceived abandonment.

Methods Mixed-methods analysis of responses to the Massachusetts Medical Errors Recontact survey with participants reporting a medical error within the past 5 years. The survey consisted of forty closed and open-ended questions examining adverse medical events and their consequences. Respondents were asked whether they felt 'that the doctors abandoned or betrayed you or your family'. Open-ended responses were analysed with a coding schema by two clinician coders.

Results Of the 253 respondents, 34.5% initially and 20% persistently experienced abandonment. Perceived abandonment could be traced to interactions before (18%), during (34%) and after (45%) the medical mishap. Comprehensive post-incident communication reduced abandonment for patients staying with the provider associated with the mishap. However, 68.4% of patients perceiving abandonment left their original provider; for them, post-error communication did not increase the probability of resolution. Abandonment accounted for half the post-event loss of trust in clinicians.

Limitations Survey-based data may under-report the impact of perceived errors on vulnerable populations. Moreover, patients may not be cognizant of all forms of adverse events or all sequelae to those events. Our data were drawn from a single state and time period.

Conclusion Addressing the deleterious impact of persisting abandonment merits attention in programmes responding to patient safety concerns. Enhancing patient engagement in the aftermath of an adverse medical event has the potential to reinforce therapeutic alliances between patients and their subsequent clinicians.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Adverse medical events have been statistically associated with perceived abandonment and loss of trust in healthcare, but the origins of abandonment and its mediating influence on subsequent mistrust have not been methodically assessed.

WHAT THIS STUDY ADDS

⇒ Behavioural responses such as switching providers have a crucial impact on the relationships between adverse medical events, perceived abandonment and loss of trust; patients' narrative accounts of safety events offer key new insights into these complex relationships.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Conventional disclosure and resolution practices miss 70% of the cases of perceived abandonment because these patients have switched providers. We suggest novel approaches to reconnect patients and families to a healthcare system from which they feel alienated.

For a century, American case law has delineated when physicians were deemed to have 'medically abandoned' patients by discontinuing clinical relationships.[1] Rules codifying these norms were extended to emergency care in 1986 under the Emergency Medical Treatment and Labor Act.[2] But most patients who worry about 'abandonment' fear that clinicians treating them might no longer give primacy to patient well-being, especially when patients are at the end of life[3 4] or have stigmatised conditions.[5] Anxieties about abandonment are heightened among patients who mistrust clinical professions.[6]

Given these concerns,[7] it is surprising that the impact of adverse medical events on perceived abandonment and its subsequent sequelae have never been carefully assessed,[8 9] even though adverse events are common,[10] have lasting impact on patient expectations[11–14] and have been linked in qualitative studies to perceived abandonment.[12 15–17] Systematic assessments have been hampered by unrepresentative samples of adverse events and patients' varied lexicon of synonyms for 'abandonment', including 'isolation',[3 16] 'vulnerability',[18] 'feeling dismissed'[12] or 'being ignored'.[19 20]

Table 1 Sample characteristics and analytical variables

Variables	Full sample	By perceived abandonment		
		None	Initial only	Persisting
Sociodemographics				
Age of the patient at time of error (% 65+)	34.2%	31.8%	51.4%	30.0%
Gender of respondent (% female)	52.5%	52.7%	50.0%	54.0%
Race/ethnicity (% white non-Hispanic)	85.8%	86.2%	81.6%	87.5%
Education (% high school grad or less)	11.3%	11.3%	15.7%	8.2%
Perceived error reported by:				
Patient affected by the incident	41.2%	38.9%	29.0%	58.0%
Family: responsible for patient's medical care	15.7%	13.2%	26.3%	16.0%
Family: not responsible for patient's care	43.4%	47.9%	44.7%	26.0%
Assessment of provider behaviour prior to the perceived error				
Initial treatment: inattentive to details (% reported)	24.0%	26.5%	15.8%	22.0%
Initial treatment: didn't listen to patient (% reported)	13.0%	5.5%	28.6%	27.9%
Initial emotional response to the error				
Anger (% reported)	64.0%	51.2%	92.1%	86.0%
Anxiety (% reported)	56.6%	45.3%	84.2%	74.0%
Depression (% reported)	34.1%	19.4%	63.2%	62.0%
Other initial consequences of medical error				
Physical health got much worse (% reported)	41.4%	34.8%	51.4%	56.0%
Medical expenses increased (% reported)	50.2%	43.1%	67.6%	61.2%
Lost earnings from work (% reported)	28.1%	25.6%	26.3%	38.0%
Loss of trust following perceived error (% reported)	60.1%	51.2%	71.1%	82.0%
Patient/family responses following perceived error				
Reported the error outside own family (per cent)	57.8%	52.4%	65.8%	70.0%
Subsequently svoided clinician associated with error (per cent)	54.3%	32.9%	68.4%	72.0%
Provider responses following perceived error				
High quality post-error communication (% with 5+ forms)	20.2%	27.1%	10.5%	4.0%
Medium quality post-error communication (% with 3–4 forms)	16.7%	19.4%	15.8%	8.0%
Counselling available post-error (% offered any)	15.9%	16.3%	11.1%	18.4%
Follow-on medical care provided after mishap (% receiving)	15.3%	18.6%	3.6%	11.6%
Provider described preventive response (% hearing this)	8.0%	9.8%	8.1%	2.0%
Provider seen as evading responsibility (% reported)	11.6%	6.9%	7.1%	30.2%
Provider seen to dismiss post-error symptoms (% reported)	3.7%	1.4%	0.0%	14.0%
General perceptions of the medical profession				
Physicians thorough in practices (% always or often)	61.3%	70.5%	51.4%	38.0%
Physicians identify best treatments (% always or often)	45.7%	53.3%	40.5%	24.0%
Physicians present all treatment options (% always or often)	50.0%	56.0%	44.7%	34.0%
Physicians attentive to patients (% always or often)	47.5%	58.7%	36.9%	18.0%
Number of observations	N=255	N=167	N=38	N=50
Per cent of sample who reported a perceived error		65.7%	14.9%	19.6%

This study documents the prevalence of perceived abandonment following medical mishaps, examining its origins, identifying practices that affect its emergence and assessing how much feelings of abandonment account for declines in patients' trust following adverse events. Our analysis draws on perceived medical errors reported by a representative sample of patients and family members. We integrate quantitative and qualitative responses to better understand how feelings of abandonment emerge and to distinguish abandonment from

other emotional reactions to adversity.[21 22] We identify ways in which providers, patients and families responded to medical mishaps, linking these statistically to reported feelings of abandonment. By examining the interaction of patient and provider responses, we also shed new insight on the potential for disclosure and resolution (D&R) programmes to succour patients following adverse events.[11 15 19 23 24]

METHODS

Study population

We analyse responses from the Massachusetts Medical Error Recontact Survey (MERS), a 2018 telephone follow-on to the Massachusetts Health Insurance Survey (MHIS), a randomised phone-based survey of Massachusetts residents fielded in 2017.[11] Respondents on the MHIS who reported that they or a family member had experienced a medical error within the previous 5 years were asked if they would answer further questions about these experiences. Those who agreed were comparable in sociodemographic and error characteristics to those reporting errors on the MHIS.[11] 253 respondents completed the MERS, composed of 40 closed-ended and open-ended questions (online supplemental appendix 1). An additional 371 respondents to the MHIS who had not reported an error were asked about how well their current clinicians guard against medical errors, matching those questions on the MERS and serving as our control group for later analyses.

Patient and public involvement

This study was also funded by the Betsy Lehman Center for Patient Safety (affiliated authors 3 and 4) who spearheaded the survey design along with the first author. The Research Task Force for the Collaborative for Accountability and Improvement, a national advisory group of researchers, clinicians, safety experts, risk managers and patients and families, provided survey design input, with patient representatives actively participating in question wording. Eight respondents self-reporting a medical error provided cognitive testing for the survey instrument but were not included in the study sample.[11]

Study variables

The MERS was designed with guidance from several expert committees, stakeholders and clinicians.[11] Close-ended questions were modelled on previous research.[25–27] Open-ended questions were derived from qualitative studies of patient and family experiences with adverse medical events.[10 13 16 18 25 28 29]

Close-ended questions

Identifying perceived abandonment

Respondents were queried about feelings and reactions following a perceived medical error, both immediately after the mishap and when completing the survey (up to 6 years after the incident). Most germane to this study, respondents were asked whether they felt 'that the doctors abandoned or betrayed you or your family' (previous research and our own cognitive testing revealed that 'abandonment' and 'betrayal' were seen as synonyms).[12 14]

Patient/family responses

The MERS asked about other consequences, including financial and health impact of the mishap, as well as whether respondents lost trust in medicine and their emotional reactions—anger, anxiety and depression—both immediately after the incident and at the time they were surveyed ('persisting' impact). Respondents were also asked about behavioural responses, including whether they had voiced their concerns to providers associated with the mishap or switched providers after the incident.[25 30]

Patient reflections on provider responses

Another set of questions explored how providers associated with the mishap had interacted with the respondent. Our own past research identified six relevant aspects of post-error communication.[11] We distinguish here 'high-quality' (involving 5+ elements) and 'medium-quality' communication (3–4 elements). Respondents were also asked whether patients were afforded access to post-incident counselling (psychological, spiritual or social services) and whether subsequent medical interventions attempted to remediate health harms. These practices, documented to help patients find closure following adverse events, could reduce perceptions of abandonment.[11 15 19 20 23]

Expectations about physicians

Respondents described their current expectations regarding physicians: how often (a 5-point scale from 'never' to 'always') they expected that (a) 'doctors are extremely thorough and careful', (b) 'you can completely trust doctor's decisions about which medical treatments are best', (c) 'doctors are totally honest in telling their patients about all of the different treatment options available for their conditions' and (d) 'doctors pay full attention to what patients are trying to tell them'.

Open-ended questions

The MERS incorporated seven open-ended questions about the medical mishap and subsequent events. These opened with a broad query ('In your own words, could you tell me more about the medical error that happened?') followed by directed inquiries about particular aspects of the experience. The follow-on questions explored potential causes of the mishap, both actions that occurred ('Please give us your best sense of what might have led up to the medical error you've been describing?') or were absent ('What if anything, could have been done differently to prevent this medical error from happening?'). These questions were designed to elicit respondents' perceptions of cause without demanding difficult attributions of responsibility.[29]

As we were designing the survey our patient/family advisors suggested that we explore whether antecedents to abandonment might actually be evident in experiences that emerged during the mishap itself or even prior to the mishap. We, therefore, coded open-ended responses to identify earlier experiences that could serve as precursors for subsequent perceived abandonment. Respondents were also asked to identify provider actions following a mishap that were helpful and actions that made matters worse. The open-ended sequence concluded by asking about changes in their healthcare-seeking attitudes and behaviour ('How, if at all, did the experience of this medical error affect the ways in which you use the healthcare system?').

Data analysis

Qualitative analysis

A four-tiered hierarchical coding scheme was inductively derived for the open-ended questions, cumulating to 375 codes (see online supplemental appendix 2). A two-person team (both trained clinicians) reviewed and coded content, with moderate overall reliability (kappa=0.63), ranging from 0.58 for the nature of the incident to 0.79 for identifying provider actions after the incident. Inconsistent initial coding was resolved in meetings with the Principal Investigator (PI).

Four codes identified behaviours shown in previous studies to exacerbate or ameliorate the impact of adverse medical events.[8 12 13 19 23] These included perceived provider behaviour during initial treatment—whether providers seemed (a) disengaged when patients sought to communicate or (b) inattentive to details about treatment. Two additional variables captured perceived provider responses after the incident; whether providers seemed to be (a) dismissive of harms caused by the mishap and (b) evading responsibility for the event or its rectification.

Quantitative analysis

By comparing persisting impact for those surveyed shortly after the incident to impact of incidents further in the past, one can construct a pseudotime profile from cross-sectional data. This form of inference is sensible only if the initial impact of the errors was equivalent to recent and long-past incidents, documented in earlier analyses of the MERS.[11]

Three sets of statistical analysis are reported below. The first identifies associations between perceived abandonment and emotional responses to medical errors, to identify whether abandonment is distinct from but potentially associated with other negative emotions.[31] In the second, we estimate regressions identifying associations between provider practices following the incident and perceived abandonment, to assess how much abandonment is lessened by remediating actions. Last, we identify how much feelings of abandonment account for the loss of trust in clinicians following a perceived medical error.

RESULTS

Study sample

Table 1 presents the characteristics and experiences reported by all respondents who reported a perceived error and comparable metrics stratified by perceived abandonment. Less educated and non-white respondents were under-represented among those reporting medical errors; respondents were otherwise representative of the Massachusetts population. Perceived medical errors had frequent health, financial and emotional consequences, more frequently evident among those feeling abandoned. Provider follow-up in the aftermath of a perceived error was generally sparse. About half of those who experienced errors responded by switching providers, most often among those feeling abandoned by clinicians.[32]

Prevalence of perceived abandonment

One-third (34.5%) of respondents who experienced a perceived medical error reported feeling abandoned (table 1). For more than half (20% of the full sample), these feelings persisted until the time of the survey, as long as 6 years after the initial incident. Error experiences reported by patients are associated with a more persisting sense of abandonment than those reported by families. Weighting responses to represent Massachusetts residents modestly reduces abandonment frequency (initial abandonment declines to 30.5% of those reporting a medical error) but does not change patterns across types of respondents or over time.

The origins of perceived abandonment

Experiential roots

Respondents' descriptions of their experiences offer insights into the origins of perceived abandonment. Some traced these perceptions to initial experiences with treatment before adverse outcomes emerged. Diagnoses that felt incomplete (respondent A, table 2) or treatment that seemed rushed (respondent B) left respondents uneasy. When these initial concerns were attributed by respondents to factors outside the control of clinicians, they induced anxiety (respondent C). When viewed as avoidable provider negligence or bias, they more frequently fostered anger (respondent D).[29]

For other respondents, perceived abandonment first emerged when they struggled to convey to clinicians that something seemed awry following treatment. Patients often felt abandoned when providers seemingly discounted post-treatment symptoms (respondent E) or dismissed any possible connection between the symptoms and treatment (respondent F). When patients or caregivers judged that clinicians could have avoided these problematic actions, they more frequently induced anger (respondent G).

For others, feelings of abandonment stemmed from how providers responded once it was clear that something had gone amiss. Some perceived providers to be distancing themselves after the apparent error (respondent H). Others felt abandoned due to seemingly inadequate follow-up after

Table 2 Illustrative narrative accounts of experiences associated with perceived abandonment

Respondent	Illustrative commentary
Assessing the initial treatment associated with the medical mishap	
Respondent A (family)	I think that people didn't take enough time with him. His doctor did not take enough time with him and did not explore… You know, I think that when a person is depressed, they're not actually very…you know, they're not actually able to express themselves always very well and I think that his doctor did not go far enough to find out what was going on.
Respondent B (patient)	Well, I think it was just carelessness. Because, you know, the substance, it's a very caustic substance, obviously, because it's cauterizing parts of your nose. And when she had this wand and it just dripped on my nose and it made a permanent… It's not a scar, it's just a black spot. So, you know, I think it was just carelessness.
Respondent C (family)	She was 90 at the time. She was a youngster! Well, it just made me think my mother is right, that the hospital really doesn't do the right thing, because they try to save too much money on their costs.
Respondent D (patient)	The hardest part is knowing that I could have a treatable condition where treating it might save my life and I'm not getting either the diagnosis or the treatment because the doctors are blaming everything on being fat. So, it's a little bit similar to the experiences someone might have if they have a disease and they don't have health insurance so they can't treat it. That you believe there's something there and you believe it's treatable, but you can't get the treatment. But in my case, it's not a question of insurance or even directly of money, it's the medical fashion that the doctors just see "fat patient" and nothing else.
Reporting warning signs of medical care seemingly gone wrong	
Respondent E (patient)	They could have respected my opinion of how much pain I was in and that some serious damage had been done. They could listen to a patient
Respondent F (patient)	They insisted that this medication would not be causing my problems, had me get off other medications saying it was something else, and they didn't listen to me. They didn't believe me.
Respondent G (patient)	I was prescribed a medication in error. And when I started having side effects from it and asking if the medication could be causing the problems, I kept getting the response of, "No, no, no. You have to stay on this." When it was over, I realized they were looking at me as a middle-aged woman and judging and deciding I had hot flashes instead of issues from being overmedicated
Responding to perceived medical mishaps	
Respondent H (patient)	It affected my life severely. I have a hard time sleeping, you know, and I get upset all the time and I think of, "Why did this happen?" You know? I'm depressed all the time. I tried to explain to the nurses over there. Everybody walked away from me, they didn't wanna talk to me.
Respondent I (family)	If somebody just would have called her [the patient], you know, a couple of weeks after everything just to see how she was doing, that might have worked… It just, would have been more routine checking-in, I think we would've caught it, and then once symptoms became apparent, you know, if there would've been a little more acknowledgment of, 'Yeah, there are problems,' that, you know, I think it'd be a little bit of a different conversation. Or it would've maybe lessened her lack of trust
Respondent J (patient)	I think just not explaining anything, that's why that happened. That made it worse. Not giving us the reason why it happened.
Respondent K (family)	My son had already battled a significant illness and was recovering when this happened. And so the biggest fear was that his recovery from the other illness was gonna be permanently attacked by a doctor who didn't take him seriously. There was a lot of fear and anxiety and just, you know, getting him to the doctor and back, to the nutritionist and back and trying to find the appropriate food that he could eat… We had to find a new primary care doctor.
Respondent L (family)	Actually yelled at me for calling the ambulance to have(my grandfather, the patient)transported to the nearest facility to have things taken care of, instead of… I just felt like he wanted to cover his ass and didn't care about what went on, that my grandfather was treated to stop the bleeding and whatever. I felt like he is yelling at me because I called the ambulance, because it's out there now that he had a problem. Instead of saying, 'Great job. They stopped the bleeding. Now we're here and we can fix it.' He yelled at me. He yelled at me at the hospital on the phone and then he yelled at me when I got to his office. And then he wanted to call up and tell the ambulance drivers off. That just unsettled me a lot. I just felt like he didn't care. He didn't care about my grandfather. All he cared about was covering himself.

Table 3 Emotional correlates of reported feelings of abandonment

Initial emotional reaction		Association with abandonment			
		Initial abandonment		Persisting abandonment	
Emotional state	n	Per cent reporting	N	Per cent reporting	N
No initial emotions	45	11.1%	5	8.9%	4
Individual emotions only					
Only anger	32	25.0%	8	18.8%	6
Only anxiety	19	10.5%	2	5.3%	1
Only depressed	15	20.0%	3	13.3%	2
Combined emotions					
Anger+depressed	17	17.7%	3	5.9%	1
Anger+anxiety	27	**40.7%**	**11**	11.1%	3
Anxiety+depressed	11	0.0%	0	0.0%	0
Anger+anxiety+depressed	89	**62.9%**	**56**	**37.1%**	**33**
	255		88		50

Bolded values are different at a 0.05% confidence level from people reporting no initial emotional reaction to the perceived medical error.

treatment (respondent I). Still others felt anxious because providers had not adequately explained the origins of the error (respondent J) or failed to remediate harms (respondent K). Providers' responses sometimes left respondents questioning whether clinicians ever had the patient's best interests at heart (respondent L).

Feelings of abandonment thus emerged at several stages of patient–provider interactions, in some cases at multiple stages of a single episode. Our qualitative analysis suggests that for 18% of respondents, feelings of abandonment began when first seeking medical care, for 34% during treatment associated with the perceived error and for 45% by provider actions after the incident. 23% reported experiences from multiple stages that fostered feelings of abandonment. These were often accompanied by powerful emotional responses.

Emotional correlates

Because negative emotional responses to perceived medical errors are so common (as evident from tables 1 and 2), the question arises whether 'abandonment' is simply a relabelling of other affective reactions. As table 3 reveals, abandonment rarely comes unaccompanied by negative emotions. But it is the combination of feelings—anger and anxiety for initial abandonment, anger combined with anxiety and depression for persisting abandonment—that most strongly correlates with feeling abandoned.

Practices that affect perceived abandonment

Institutional practices, such as D&R programmes, can reduce the harms associated with adverse medical events but are rarely available.[11 15 19 23] Moreover, these initiatives are often offset or undermined by provider behaviours that exacerbate harms.[8 12 15 21 24] Complicating the picture is that half of those perceiving errors (70% of those feeling abandoned) switch care settings (table 1). This may limit remediation, in ways not previously studied.

Regression analyses stratified by switching reveal sharp distinctions (table 4). For those who stay with the providers associated with the adverse event, comprehensive post-incident communication significantly reduces feelings of abandonment (65%–80% of means) for both initial and persisting abandonment, statistically controlling for the associations with other institutional practices. The reductions appear to be as strong for communications that are only moderately complete (have 3–4 of the six elements). However, the quality of post-error communication has no apparent benefit for those switching providers.

Only one of our metrics of provider behaviour in table 4 has a statistically significant association with perceived abandonment: but there is one notable exception. Providers seen as dismissing symptoms attributable to the adverse event are associated with much higher levels of perceived abandonment. These pernicious effects are 2–5 times larger than the impact of the most effective post-error communication. Yet these negative associations are also limited to patients who stay with their initial providers.

Perceived abandonment and expectations for the medical profession

Past research establishes that perceived errors jaundice expectations for all medical professionals, not only those associated with the error.[12 14 15 18 33] Our data agree: averaging across four expectation variables, those reporting a medical error had expectations 0.22 points lower (9% reduction compared with means) than the control group who had not reported experiencing a medical error. How much of these more pessimistic expectations can be attributed to feelings of abandonment?

Table 4 Impact of provider practices on perceived abandonment

Provider initiatives	Patients who stay with providers		Patients who switch providers	
	Coefficient	95% CI	Coefficient	95% CI
	(A) Association with Initial Abandonment			
Institutional practices				
High quality post–error communication	**–0.25**	(–0.43 to –0.07)	–0.09	(–0.43 to 0.25)
Medium quality post–error communication	**–0.24**	(–0.44 to –0.14)	0.15	(–0.19 to 0.49)
Counselling available	0.13	(–0.05 to 0.31)	–0.08	(–0.39 to 0.15)
Follow–on medical treatment	–0.08	(–0.28 to 0.12)	–0.18	(–0.53 to 0.17)
Provider behaviours before mishap				
Providers seen as inattentive to detail	–0.13	(–0.29 to 0.03)	–0.12	(–0.38 to 0.14)
Providers seen as not listening to patient	0.11	(–0.27 to 0.49)	**0.25**	(0.01 to 0.49)
Provider behaviours after mishap				
Providers seen to evade responsibility	0.09	(–0.20 to 0.38)	0.20	(–0.10 to 0.50)
Providers dismissed post–error symptoms	**0.64**	(0.14 to 1.14)	0.10	(–0.43 to 0.63)
	(B) Association with Persisting Abandonment			
Institutional practices				
High quality post–error communication	**–0.17**	(–0.33 to –0.04)	–0.11	(–0.45 to 0.23)
Medium quality post–error communication	**–0.16**	(–0.30 to –0.02)	–0.07	(–0.41 to 0.27)
Counseling available	**0.17**	(0.03 to 0.31)	–0.02	(–0.33 to 0.29)
Follow–on medical treatment	0.01	(–0.13 to 0.15)	0.07	(–0.28 to 0.42)
Provider behaviours before mishap				
Providers seen as inattentive to detail	–0.03	(–0.15 to 0.09)	–0.17	(–0.43 to 0.09)
Providers seen as not listening to patient	–0.10	(–0.38 to 0.19)	0.12	(–0.12 to 0.36)
Provider behaviours after mishap				
Providers seen to evade responsibility	0.18	(–0.04 to 0.40)	0.25	(–0.05 to 0.55)
Providers dismissed post–error symptoms	**0.84**	(0.47 to 1.21)	0.26	(–0.26 to 0.82)

Bolded values represent regression coefficients that are statistically significant at the 5% confidence level controlling for the other variables in the regression.

We regressed expectations for physicians on initial feelings of abandonment, impact of the error on patients' health and finances, and provider behaviours reported to affect patients' assessments of adverse events.[8 11 15 21 24] Perceived abandonment is the only experience consistently associated with lower expectations (table 5). Controlling for other factors, initial abandonment is associated with a 0.35-unit reduction across the four expectations. Since 34% of those experiencing a perceived medical error reported feeling initially abandoned, this association accounts for a decline in expectations for the full sample of 0.12 units, more than half the total decline reported above.

DISCUSSION

Our findings suggest that perceived abandonment after medical mishaps merits greater attention from researchers and policymakers. One-third of perceived medical errors induce initial abandonment; for one-fifth of all errors, this impact persists for years. Our regression results (table 4) suggest that conventional D&R practices promoting communication are ineffective at reducing perceived abandonment for patients switching providers after a mishap. Thus, 70% of the cases where patients or families feel abandoned go unrectified. When patients retain their providers, clinicians who appear dismissive of post-mishap symptoms substantially exacerbate abandonment. Failing to address these D&R deficiencies induces a substantial erosion of trust in physicians among both patients and families.

A second key insight emerged from both qualitative and quantitative analyses: timing. Although it is easy to assume that abandonment solely reflects patient experiences after a medical mishap, this timing characterises only a portion of narratives depicting abandonment. For 18% of those reporting abandonment, these perceptions can be traced back to their early interactions with clinicians deemed culpable. In 23% of cases, perceptions of abandonment emerged at multiple stages of patient–clinician interaction. How clinicians relate to patients

Table 5 Experience of abandonment and subsequent expectations for medical profession

Experiences and feelings after mishap	Current expectations of physicians generally									
	How often thorough		How often choose best treatment		How often present all treatment options		How often attentive to patients	
	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI
Abandonment								
Initially felt abandoned	**−0.34**	(0.12 to 0.55)	**−0.37**	(−0.66 to −0.08)	−0.30	(−0.61 to 0.01)	−0.39	(−0.69 to −0.09)
Impact of error								
Serious physical harm	−0.05	(−0.03 to 0.13)	−0.04	(−0.13 to 0.05)	0.02	(−0.07 to 0.11)	0.01	(−0.08 to 0.10)
Added medical costs	−0.04	(−0.28 to 0.20)	−0.08	(−0.35 to 0.19)	−0.20	(−0.49 to 0.09)	−0.08	(−0.38 to 0.22)
Lost earnings	−0.20	(−0.48 to 0.08)	**−0.32**	(−0.63 to −0.01)	−0.15	(−0.48 to 0.17)	−0.24	(−0.55 to 0.07)
Provider behaviour before adverse event								
Didn't attend to details	0.13	(−0.12 to 0.38)	0.31	(0.03 to 0.59)	−0.06	(−0.36 to 0.24)	0.17	(−0.11 to 0.45)
Didn't listen carefully	−0.39	(−0.73 to −0.05)	−0.17	(−0.57 to 0.23)	0.21	(−0.21 to 0.63)	−0.27	(−0.67 to 0.13)
Provider behaviour after adverse event								
Evaded responsibility	−0.10	(−0.46 to 0.26)	−0.17	(−0.57 to 0.23)	−0.52	(−0.96 to −0.08)	−0.27	(−0.68 to 0.14)
Dismissed symptoms	−0.06	(−0.30 to 0.24)	−0.22	(−0.55 to 0.44)	0.28	(−0.44 to 0.80)	−0.02	(−0.70 to 0.66)

Bolded values represent regression coefficients that are statistically significant at the 5% confidence level controlling for the other variables in the regression.

prior to a mishap is statistically associated with persistent abandonment years later (table 4). Assembled together, this evidence suggests that strong patient–clinician relationships can buffer subsequent medical traumas, with goodwill from past interactions protecting against emergent anxieties tied to perceived abandonment.

Interpreting these findings requires attention to some methodological limitations. These data came from a single state. Since Massachusetts has pioneered state-level initiatives addressing patient safety,[34 35] it is possible that both adverse events and perceived abandonment are more common elsewhere in the U.SA. A number of Americans remain uncomfortable publicly reporting medical mishaps, concerned that this might unfairly tarnish their clinicians' reputations.[11 12 35] So survey-based data may underreport perceived errors, particularly among vulnerable patients.[36] Moreover, though our survey asked respondents about 'medical errors', we recognise that their reports more reliably identify adverse events and not preventable adverse events.[37 38] Nor are patient reports equally reliable for every aspect of adverse events.[27 29 39] Despite all these limitations, patient experience provides a uniquely important perspective for identifying safety events that are otherwise omitted from other reporting systems.[11 20]

These caveats aside, it seems clear that there is more to be done and more to be learnt. Annually, 10% of Americans experience medical mishaps; 42% of these result in lost trust in the medical profession.[11] Our findings suggest that (a) half of this lost trust is associated with perceived abandonment and (b) for those patients (roughly half) who stick with the providers associated with the perceived error, improved post-error communication and ensuring that providers avoid dismissing post-incident symptoms substantially reduce feelings of abandonment (table 4).

Addressing the deleterious impact of persisting abandonment among the half who switch to new providers requires new approaches to 'reconnect' patients and families to a system that, for them, has seemingly neglected their well-being. Such approaches ideally would include proactive outreach to those who are often reluctant to avail themselves of support services after a medical mishap. But outreach is difficult, without greater transparency and more reliable identification of adverse events. In the short term, displaced patients and families might be best served by each state designating a single point of referral—which could be either public or private agency—offering peer support or similar guidance after a medical mishap. In the longer term, more reliable approaches to case identification are essential: these might involve a combination of mandatory reporting of adverse events by healthcare providers, screening for medical trauma as part of medical histories or regular surveys conducted by large payers to screen enrollees for perceived medical errors.

Several aspects of abandonment and its sequelae require additional study. Differences between patient and family experiences are evident in our data, but our sample is too small to fully examine these distinctions. Feelings of abandonment are most common for those with multiple negative emotions about an adverse event. Although consistent with studies of the emotional aftereffects from trauma,[40 41] how these sequelae can be constructively addressed requires additional study. Similarly, identifying remediation strategies that can be effective when patients switch providers in the aftermath of a medical error merits greater attention in policy design and future research.

Our findings also highlight the importance of learning from patients and families about medical mishaps, using qualitative methods that can capture nuanced aspects and origins of their experiences.[9 19 29 42] It is insufficient to wait for complaints to be volunteered—patient experiences must be systematically and thoughtfully elicited lest we continue to overlook shortfalls in patient experience, particularly for the least empowered.[43] To be sure, not all elicited feedback may be immediately or fully actionable.[44 45] But if we fail to even start by asking the right questions, then we guarantee a continued erosion of the legitimacy and trust on which healthcare systems depend.

Contributors MS designed data collection tools, monitored data collection, wrote the statistical analysis plan, cleaned and analysed the data and drafted and revised the paper. JCP and BAF designed data collection tools, monitored data collection, reviewed the data analysis and drafted and revised the paper. VP and ID cleaned and analysed the data, reviewed the data analysis and drafted and revised the paper. The first author is the guarantor.

Funding Gordon and Betty Moore Foundation; grant number: 10781.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval The study was determined to be exempt by the Yale institutional ethics board.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement No data are available.

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