

## Emotional Influences in Patient Safety

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**Objective:** The way that health care providers feel, both within themselves and toward their patients, may influence their clinical performance and impact patient safety, yet this aspect of provider behavior has received relatively little attention. How providers feel, their emotional or affective state, may exert a significant, unintended influence on their patients, and may compromise safety.

**Methods:** We examined a broad literature across multiple disciplines to review the interrelationships between emotion, decision making, and behavior, and to assess their potential impact on patient safety.

**Findings:** There is abundant evidence that the emotional state of the health care provider may be influenced by factors including characteristics of the patient, ambient conditions in the health care setting, diurnal, circadian, infradian, and seasonal variables, as well as endogenous disorders of the individual provider. These influences may lead to affective biases in decision making, resulting in errors and adverse events. Clinical reasoning and judgment may be particularly susceptible to emotional influence, especially those processes that rely on intuitive judgments.

**Conclusions:** There are many ways that the emotional state of the health care provider can influence patient care. To reduce emotional errors, the level of awareness of these factors should be raised. Emotional skills training should be incorporated into the education of health care professionals. Specifically, clinical teaching should promote more openness and discussion about the provider's feelings toward patients. Strategies should be developed to help providers identify and de-bias themselves against emotional influences that may impact care, particularly in the emotionally evocative patient. Psychiatric conditions within the provider, which may compromise patient safety, need to be promptly detected, diagnosed, and managed.

**Key Words:** patient safety, emotional influence, affective state, cognitive and affective bias, clinical decision making, human factors

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There have been many advances in the area of patient safety since the publication of the Institute of Medicine report “To Err is Human,”<sup>1</sup> 10 years ago. A major theme of this and subsequent reports<sup>2</sup> was that solutions should be sought within systems rather than blaming individuals, and there has been a palpable shift of emphasis in that direction.<sup>3,4</sup> In the process of finding system level solutions, however, important aspects of individual performance may have been minimized or over-

looked.<sup>5</sup> Surprisingly, few resources have been directed at how health care providers think and feel, particularly in the process of clinical decision making. Yet there is considerable evidence that missed, delayed, or wrong diagnoses make up a significant proportion of all medical errors and often will lead to major injury and suffering.<sup>6,7</sup> Hitherto, the failure to fully appreciate the impact of diagnostic error has been attributed to the obscure nature of the processes that underlie clinical reasoning.<sup>8,9</sup>

Although the assumption is generally made that information used in clinical reasoning is objective, and that thinking is logical, these conditions are not always met.<sup>9</sup> Two phenomena that may undermine objectivity and rational thinking are cognitive and emotional influences. However, the latter has received much less attention. In a review of Groopman's book *How Physicians Think*,<sup>10</sup> Horton draws attention to the historical failure in medicine to appreciate the importance of emotion in decision making: “Most physicians fail to recognize, let alone analyze, their own emotional states in clinical encounters. This repression of feeling misses an important variable in the assessment of a patient's experiences and outcome. The emotional temperature of the doctor plays a substantial part in diagnostic failure and success.”<sup>11</sup>

In another recent book, Quirk<sup>12</sup> states: “The literature is quite clear that affect, specifically mood, can also ‘intuitively’ influence decision making and performance... From research, we can infer that medical students and practitioners alike who are happy, sad, depressed, anxious, or even angry may unwarily alter their clinical decision-making processes.”

Historically, thinking and feeling have been separated. Whereas cognition has been seen as the rational process of thinking, emotion has been viewed as mostly an irrational influence, clouding judgment and distorting reasoning. The more recent and prevailing view is that cognitive and emotional processes are integral to each other and that one does not occur without the other. Damasio's<sup>13</sup> “somatic marker” hypothesis proposes that, rather than being the antithesis of reasoning, emotions are indispensable to decision making. Importantly, physicians' emotional reactions to patients often are their very first reactions, occurring automatically and subsequently influencing information processing, judgment, and decision making.<sup>14</sup> Furthermore, emotional processes are considered indispensable to learning and memory. Emotion is a means of vividly labeling experience, thereby establishing enduring short- and long-term memory, and learning follows by prompting cognitive reflection on these memories.<sup>15</sup> The purpose of this article is to highlight emotional influences in patient management with the hope that these factors will become better represented in both the scientific literature and the clinical setting.

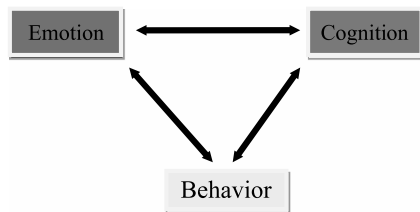
Emotion may enter into the thinking process in a variety of ways. The complexity of this interaction has been reviewed.<sup>15,16</sup> The amygdala mediates innate and acquired emotional responses, conscious and unconscious feelings, and interfaces with the decision-making processes of the frontal cortex.<sup>17</sup> It has been demonstrated that the cognitive activity that underlies clinical decision making may be altered by even moderate changes in emotional state, positively or negatively influencing the choice of strategies in decision making and problem solving.<sup>18</sup> This

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**FIGURE 1.** Interrelationships of emotion, cognition, and behavior.

critical 3-way interplay is illustrated in Figure 1. Thus, emotional state may exert a significant influence on decision making. For safe patient care, providers need competence in procedural, cognitive, and emotional domains.<sup>19</sup> Procedural competence involves the acquisition and maintenance of specific skills that require coordination primarily in visual, motor, and touch modalities<sup>20</sup>; it is manifest prominently in surgical fields. Cognitive competence is described by the ability to apply appropriate thinking to an adequate knowledge base and is characterized in formulating a diagnosis and appropriate management plan.<sup>21</sup> Emotional competence would therefore describe the ability of the clinician to recognize emotions and, if necessary, limit potential influences of their own emotional state on diagnostic and treatment decisions.

It is important to recognize differences in the properties of the errors that may arise in all 3 domains. Procedural errors are distinct, often visible, witnessed, and recorded.<sup>19</sup> This may account for a disproportionately higher representation of these errors in retrospective, chart-based studies of medical error.<sup>22–24</sup> Those who make procedural errors often are immediately aware of doing so. In contrast, cognitive errors are generally less visible. Thinking is a largely covert activity, and such errors are rarely witnessed or recorded. Cognitive errors are usually evident only after the fact, and those who make them often have little awareness of them, even in hindsight. The properties of emotional error make it especially difficult to deal with. As with cognitive error, it is mostly covert, often not witnessed, and almost never recorded. Those who make emotional errors usually seem unaware of them or their impact. Accordingly, it is difficult to investigate them or quantify them, and emotional influences remain a blind spot both in studies of clinical decision making and within the general context of patient safety.

## TERMS AND DEFINITIONS

It is useful to provide a few terms and definitions: *emotional error*, in the present context, is taken to result from an influence of emotion on a provider's decision making that adversely impacts patient management. *Emotional dysregulation* refers to counterproductive intrapsychic and interpersonal behaviors that may result in response to emotional upheaval.<sup>25</sup> *Cognitive (and affective) control* refers to "...the ability to develop and carry out temporally extended plans of action, especially novel ones, to do so in the absence of sensory cues, to resist distraction and interference, and to update goals and sub goals in a flexible manner."<sup>21</sup> Two further important constructs critical to the present discussion require more detailed description: *countertransference* and *attribution*.

Countertransference, first described in the context of psychoanalysis, is now used more broadly to include the provider-patient relationship and has been extended further to social cognition, that is, the ways in which people perceive and think about each other in their day-to-day lives.<sup>26</sup> Any patient may

evoke memories and associations from particular exemplars in the past. Countertransference occurs when the provider's past feelings are mobilized and color the present relationship with the patient. It may be seen as an example of the representativeness heuristic<sup>27</sup> in that a patient's appearance, demeanor, or behavior comes to represent a class of patient(s) previously experienced by the provider that evokes a predictable and often biased response. In 1 study, 4 representative classes of patients were described, each of which evoked a negative emotion in the physician: dependent clingers, entitled demanders, manipulative help-rejecters, and self-destructive demanders.<sup>28</sup> Emotions stirred from the past may be intense and complex and give rise to unconscious anxiety and defense mechanisms.<sup>25</sup> If these feelings are avoided and repressed, the provider may unwittingly relate to the patient as a punitive parent, a victim, an abuser, an idealized other, or in some other 1-dimensional or distorted fashion. A classic example of countertransference-related error is when the negative attitude of caregivers toward psychiatric patients contributes to their successful completion of suicide.<sup>29–31</sup> Countertransference is an important component of emotional error and may be the underlying substrate for many of the errors described below.

A 28-year-old female patient is sent to an emergency department from a nearby addictions treatment facility. Her chief complaints are anxiety and chest pain. She is concerned that she may have a heart problem. An electrocardiogram is routinely done at triage. The emergency physician who signs up to see the patient is well known for his views on "addicts" and others with "self-inflicted" problems who tie up busy emergency departments. When he goes to see the patient, he is informed by the nurse that she has gone for a cigarette. He seems angry and verbally expresses his irritation to the nurse. He reviews her electrocardiogram, which is normal.

When the patient returns, he admonishes her for wasting his time and, after a cursory examination, informs her she has nothing wrong with her heart and discharges her with the advice that she quit smoking.

The patient is returned to the addictions center. Later that evening, she has further chest pain and a cardiac arrest from which she could not be resuscitated. At autopsy, multiple small emboli were evident in both lungs with bilateral massive pulmonary saddle emboli.

*Comment: this is an example of fundamental attribution error (FAE; see text for details), where the physician focuses on the disposition of the patient rather than the circumstances that led her into addiction. She had a long history of physical and sexual abuse. His anger at the patient further distracts him from his usual practice of reviewing medications and noticing on her triage chart that she is on a birth control pill.*

Attribution is an interpretive process by which a judgment or inference is made about what has caused something that has been observed. *Fundamental attribution error* is a misinterpretation in the process.<sup>32</sup> It is the bias that arises when we try to explain another person's behavior in terms of the particular qualities (disposition) of that person, rather than as being due to the situational circumstances or setting in which the behavior has occurred. Thus, those on social security may be perceived as lazy

(dispositional attribute) rather than as being unable to find employment (situational). In medicine, attribution judgments underlie a variety of known biases toward particular conditions, such as obesity, sex, race, age, and psychiatric illness,<sup>33</sup> often leading to suboptimal care. Patients who are liked by health care providers are more likely to be perceived in situational terms, and patients who are disliked are more likely to be perceived in dispositional terms. Interestingly, attribution style interacts with mood-depressed people are more likely to adopt a dispositional style than a situational one.<sup>34</sup>

Essentially, FAE leads to a negative judgment of the behavior of others and may occur toward a wide range of patients. In studies in family practice, the most evocative patients were those with behavioral problems.<sup>35,36</sup> A good example of FAE is the perception of those with antisocial personality disorder, who are characteristically disliked immediately.<sup>37</sup> Typically, the chief complaint will be minimized or overlooked, possibly leading to missed diagnoses or other errors in management. Awareness of the emotion, and resistance toward reflexively acting on it, is required to effectively work with these patients and avoid errors in their management. If instead the emotional reaction is blocked or defended against, anxiety, defensive reactions, depression, and clinical burnout may result. Professions that typically require intense involvement with other people (medicine, nursing, and teaching) are more likely to experience burnout syndrome,<sup>38</sup> a condition characterized by depression, depersonalization, and emotional depletion and exhaustion.<sup>39,40</sup> Not surprisingly, burnout is associated with compromises in patient care and safety, and a dose-response relationship has been described between the extent of burnout and measures of suboptimal patient care.<sup>41</sup> Further quantification of the relationship between emotional state and patient safety is provided in a study that found that medication errors were increased more than 6-fold in depressed pediatric residents compared with their nondepressed colleagues.<sup>42</sup> In a recent study of nurses, emotional stability predicted nurse-sensitive patient safety outcomes (care-related injuries, falls, nosocomial infections, medication errors, delays in patient care, and documentation errors).<sup>43</sup>

Toward the end of a busy day in his office, a family physician sees a patient with a known bipolar disorder. The patient's behavior is extremely demanding, and he repeats his questions several times. The physician attempts to be as patient as possible but eventually is aware of becoming increasingly irritated and distracted. Finally, he closes the encounter by hurriedly writing a prescription for lithium and discharges the patient from the office.

When the patient presents the script at a pharmacy the following day, the pharmacist notes that the dose level written is 3000 mg b.i.d. rather than 300 mg b.i.d. He telephones the physician's office to notify him of the error.

*Comment: at the end of a busy day, the physician's fatigue is compounded by irritation and distraction. This results in a failure in concentration that leads to a medication error.*

These various reactions in the clinician are major drivers of underdoing and overdoing behaviors. Those at the underdoing end of the spectrum are unduly fearful of doing harm and of imposing their will. They see themselves as flexible, safe, cost-effective, and empowering and are disposed toward errors of

omission. In contrast, those at the overdoing extreme are anxious not to be seen as neglectful or uncaring but instead as beneficent. Their errors are likely to be ones of commission, subjecting patients to unnecessary tests and procedures and increasing the risk of associated adverse outcomes. Both underdoing and overdoing behaviors may lead to splitting of health care team members, disrupting collaboration and cohesion.<sup>44</sup>

### SOURCES OF VARIATION IN EMOTIONAL STATE

There seem to be 3 major sources of emotional state variation that may disrupt cognitive control and compromise clinical decision making<sup>45</sup> (Table 1). They are ambient-induced (arising from workplace conditions, fatigue, and temporary mood alteration), task-induced (arising directly from interaction with the patient and the clinical decision task itself), and endogenous conditions (due to either clinically significant mood or anxiety disorders, or emotional dysregulatory states in the provider).

- Ambient, chronobiological, and other influences:** The human emotional state is variable and subject to a wide range of influences. Changing work conditions, interpersonal conflict, or other variables within the workplace may precipitate transient changes in emotional state. Stress and fatigue are well known to produce irritability, intolerance, and other mood changes that may exert an influence on judgment. Temperament, activity level, motivation, and other variables that affect clinical performance are influenced by the diurnal phase in some individuals more than others.<sup>46</sup> Premenopausal women may have the additional burden of infradian variations.<sup>47</sup>

Seasonal influences, notably the absence of sunlight, have a negative influence on emotional state.<sup>48</sup> The circadian dysynchronicity that results from shift work, common among health care providers, is the substrate for a variety of negative effects,<sup>49</sup> and "shift work intolerance syndrome" is associated with depressive symptoms.<sup>50</sup> Shift work, fatigue, and workplace stressors are prevalent in those who develop burnout syndrome and the associated impairment in work performance. The burnout rate for surgeons is estimated at more than 30% and has been associated with medical error and adverse effects on quality and safety of care.<sup>41</sup> Another link to patient safety comes from a study of internal medicine residents. Approximately three-quarters met the criteria for burnout and were significantly more likely to self-report,

**TABLE 1.** Sources of Emotional Influence on Clinical Performance

A. Ambient-induced	Transitory emotional states
	Environmental
	Stress, fatigue
	Other influences
B. Clinical situation-induced	Counter transference
	Fundamental attribution error
	Specific emotional biases
C. Endogenous	Circadian, infradian, seasonal mood variation
	Mood disorders
	Anxiety disorders
	Emotional dysregulatory states

providing suboptimal care to their patients.<sup>38</sup> Substance abuse is another factor that influences affective state. The lifetime prevalence for physicians is approximately 10% to 15%, comparable to the rate for the general population.<sup>51</sup> Finally, disruptions in social life, such as familial issues, marital discord, divorce, loss of a loved one, financial problems, and ill health, would all be expected to result in temporary or prolonged disturbances of emotional state. Thus, a number of ambient, chronobiological, and other influences may produce temporary or longer lasting changes in emotional state that may compromise cognitive control and performance in health care providers.

An elderly gentleman, retired from a long career in the Navy, is brought to a clinic for assessment by his daughter. She reports that he seems to be increasingly disoriented, forgetful, and lethargic. She is worried that he might be developing dementia. Apart from some mild dyspepsia, he is otherwise well.

The family physician finds the man cheerful, engaging, and affable. He reminds him of his deceased father who also was in the Navy. Physical examination is unremarkable. His neurological examination is normal other than he seems marginally disoriented. He admits to having a “tot of rum” most evenings. The physician reassures the daughter that all is well and tells her to keep an eye on his drinking.

Two days later, the patient seemed to be worsening and experienced hallucinations. He was taken to an emergency department for assessment. Head computed tomography revealed multiple metastases, and primary lesions were found in his lungs.

*Comment: the physician feels positive toward the patient because he reminds him of his father; that is, positive countertransference occurs. His failure to suspect a serious underlying disorder and investigate the patient more thoroughly may be explained by his not wanting to find an ominous source to account for the patient's symptoms—an example of the chagrin factor (see text) and an underdoing behavior.*

**2. Specific emotional biases in clinical decision making:** In addition to the powerful effects of countertransference and fundamental attribution error previously described, there are several specific biases that have an emotional component. They are known to influence physician behavior and clinical decision making and may lead to judgment errors. *Ego bias* results in self-serving distortion of probability estimates. Surgeons, for example, underestimate mortality rate for their own patients compared with that of other surgeons.<sup>52</sup> The *chagrin factor* (anticipated regret) describes how physicians may allow the undesirability of a particular diagnosis or outcome to influence their estimate of the likelihood of its being present.<sup>53</sup> *Outcome bias*<sup>54</sup> is the tendency to judge the decision being made by its likely outcome. It is more likely that a decision maker's quality of thinking and overall competence will receive approval when the outcome of the decision is favorable than when it is not. *Value bias* or *valence effect*<sup>55</sup> refers to the tendency to believe that positively valued events are more likely to happen than negatively valued events; the more objective evidence accumulates, the weaker the bias becomes. *Status quo bias*<sup>56</sup> leads to choosing alternatives that tend to perpetuate the status quo,

thereby avoiding the emotional discomfort of breaking out of a comfort zone. Recently, measures of physician affect were found to have a significant impact on patient outcomes in obstetrics. Obstetricians' scores on tests of affect, self-efficacy, and trait anxiety influenced their choice of mode of delivery and were associated with intrapartum asphyxia.<sup>57</sup>

These specific emotional biases are captured under the overarching *affect heuristic*<sup>58</sup> reflecting the integral role of emotion in judgment and decision making. Emotional reactions are automatic and often the very first reaction in a decision making situation.<sup>14,59</sup> Indeed, emotion is an integral feature of intuitive reasoning, one of the 2 major systems of information processing that have been proposed in decision making<sup>60</sup> and where the majority of reasoning errors are believed to occur.<sup>61</sup> The emotional heuristic may either augment decision making or compromise it, leading to error. As a general rule, “hot” (reflexive, current) affect is associated with incomplete consideration of information and leads to poor decisions, whereas “cold” (anticipated, regulated) affect is more beneficial and associated with better calibrated decisions.<sup>62</sup> The dynamic substrate of at least some of the specific errors described here seems to reside in one or more of the endogenous or emotionally dysregulating features of physician behaviors that are discussed in the following sections. Detailed descriptions, as well as the consequences of a variety of cognitive and emotional biases and strategies for avoiding them, have been provided.<sup>63,64</sup> Error Management Theory has attributed the abundance of these biases to their evolutionary adaptive value.<sup>65</sup>

- 3. Endogenous disorders within the provider:** These refer to a preexisting, ongoing state in the provider because of a variety of conditions and their associated treatments that may lead to predictable errors and poor outcomes in patient management. Health care providers would be expected to be just as vulnerable to affective disorders as any other segment of the population, if not more so. A recent meta-analysis found aggregate suicide ratios to be 1.4 in male physicians and 2.3 for female physicians compared with the general population.<sup>66</sup> The endogenous disorders include the following: depressive disorders (major depressive disorder, dysthymic disorder, and depression due to medical conditions or substance abuse), anxiety disorders (generalized anxiety disorder, panic disorder, phobic disorder, obsessive compulsive disorder, posttraumatic stress disorder, and anxiety due to a medical condition or substances), and mania and hypomania. These endogenous states would be expected to be associated with varying degrees of compromise in emotional and cognitive control and therefore in patient safety.
- 4. Conscious or unconscious emotional dysregulation:** Interactions with patients may produce expected emotional reactions or countertransference in providers.<sup>25,67</sup> When these emotions are avoided, they may result in a wide variety of symptoms and behaviors that compromise patient safety. Some of these patterns include the following: unconscious defenses that prevent the provider from experiencing his or her own emotions through isolation of affect, repression of affect, and projection; unconscious anxiety in the forms of muscle tension, smooth muscle tension, and cognitive-perceptual disruption<sup>68</sup>; excessive emotional involvement with patients, such as sexualizing behaviors, rescuing behaviors, or acting out anger toward patients; and excessive emotional detachment from patients in the form of neglect and abandonment.<sup>69</sup>

The physical effects of unconscious anxiety are frequently observed in the stressed, burning out, or burned out clinician.<sup>70</sup> Skeletal muscle tension may ensue, leading to stiffness, sore muscles, headaches, and backaches. Smooth muscle tension may result in acute or chronic spasm of the airways, gastrointestinal tract, vascular system, and bladder leading to dyspnea, dyspepsia, irritable bowel symptoms, hypertension, and urinary symptoms. With cognitive-perceptual disruption, the clinician may experience depersonalization, mental confusion, forgetfulness, blurred vision, or even fainting; in this setting, distorted views of patients and other staff are common and medical errors more likely.

In summary, the various sources of emotional variation, described here, may impact on providers' cognitive control and compromise patient safety. How providers feel, and how they feel toward their patients, may influence their interaction with the patient, their cognition, the overall calibration of clinical decision making, and ultimately patient safety. To achieve an acceptable level of cognitive control, providers need insight into how these various emotional processes may lead to error and impact clinical performance. Additionally, the clinician's behavior (e.g., suppressing anger toward a patient) may lead to secondary emotional reactions such as anxiety and physical symptoms. The discovery of error itself may result in significant anxiety, problematic defense mechanisms, and emotional changes in the physician<sup>71-73</sup> that, in turn, impact patient care. We propose several strategies and recommendations to manage emotional error and minimize its impact.

## RECOMMENDATIONS AND STRATEGIES

1. **Raising level of awareness:** Perhaps foremost is a need for increased awareness and understanding of the potential impact of the provider's emotional state on clinical behavior. Failure to take account of emotional influences results in an incomplete understanding of individual performance and its role in patient safety. Intuitive reasoning, so often used in clinical encounters with patients, is particularly vulnerable to emotional influence, whereas analytic, rational, rule-based models of decision making is less so.
2. **Clinical teaching:** In bedside teaching, case conferences, and morbidity and mortality rounds, efforts should be made to promote more openness and discussion about provider's feelings toward patients. This will contribute to greater insight into these important issues. This ability to be aware of and manage emotions has been referred to as emotional intelligence,<sup>74</sup> an increasingly accepted construct in a variety of fields, including medicine. Importantly, emotional intelligence has been seen in a broader context, reflecting the intelligent aspect of emotional behavior at a multidisciplinary team level.<sup>75</sup> Specifically, multidisciplinary discussion should be encouraged around the possibility of emotional influence in patient diagnosis and management and about ways to combat potential adverse effects. Specific training should be developed to encourage empathy, emotional awareness, tolerance, and nonjudgmental listening.<sup>76</sup> Deliberate teaching strategies have been proposed that address some of these issues.<sup>77</sup> Although most would agree that emotional competence is a critical feature of a provider's overall clinical performance, there are surprisingly few well-designed studies that have evaluated emotional skills curricula to date. Yet those that have demonstrate positive effects are relatively long-lasting.<sup>71</sup> Greater effort, therefore, is required to formally incorporate such training into medical undergraduate and postgraduate curricula.
3. **Specific training in the recognition and de-biasing of emotional errors:** Focused training should be given to students and practicing providers about how specific emotional biases may influence clinical decision making. They need to understand how countertransference, fundamental attribution error, and other emotional phenomena can influence their behavior. Once these are understood, it would then be possible to introduce specific interventional (de-biasing) strategies to avoid the error. Indeed, controlled trials show that teaching medical residents to identify and change negative biases toward patients results in measurable improvement in interviewing skills, confidence with challenging patients, and patient satisfaction.<sup>78-80</sup>
4. **Early identification of emotional and other psychiatric disorders:** Mental illness that may dispose a health care provider toward error needs to be promptly detected, diagnosed, and managed. Fear, shame, and stigma may create powerful barriers against expedient intervention. They may be countered by appropriate support and readily available confidential services. The role of clinical managers and institutional leaders is critically important in promoting a culture that values and rewards optimal mental health and the workplace conditions that promote it.
5. **Combating unconscious emotional dysregulation:** There are several individual and group interventions that may help providers develop an awareness of the emotional triggers and specific patient types to which they might react.<sup>25</sup> In addition to didactic teaching about emotions, psychodynamics, and countertransference, self-awareness may be improved through video recording of encounters for self-review, supervision, and peer review.<sup>81</sup> Psychiatric residents, for example, often are struck by seeing visible evidence of nuances and subtleties of their behavior (verbal content, verbal format, and body language) in interactions with patients, especially those who are emotionally evocative. Significant insights can be developed through reading in this area<sup>71</sup> as well as engaging in emotion-focused brief psychotherapies. There is a need to open up the discussion on providers' emotions toward developing a culture of self-awareness.<sup>82</sup> Self-examination should be considered an essential skill to be rewarded in all providers. The decision to regulate and control our emotions to improve the safety of patients is itself a rational decision.

## CONCLUSIONS AND IMPLICATIONS

Sound decision making is integral to the process of care and the safety of patients. For the past few decades, an abundance of evidence from the psychology literature has strongly implicated emotions in decision making, yet this issue has not been addressed directly in health care. This article attempts to redress this imbalance and focus on the critical role that all health care providers' emotions play in the process of providing health care.

Providers in clinical practice should receive continuing medical education sessions that address some of the major problems that can arise through the untoward influence of emotion not only on decision making in particular but also on clinical performance generally. Health care educators need to address the issue early in the curriculum so that awareness is raised of the impact that emotions may have on thinking, reasoning, and decision making. More sophisticated interventions can be made

in postgraduate training, in particular in those disciplines in which there is a more complex interface with patients.

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