We report on our experience with an approach to debriefing that emphasizes disclosing instructors’ judgments and eliciting trainees’ assumptions about the situation and their reasons for acting as they did. To highlight the importance of instructors disclosing their judgment skillfully, we call the approach “debriefing with good judgment.” The approach draws on theory and empirical findings from a 35-year research program in the behavioral sciences on how to improve professional effectiveness through “reflective practice.” This approach specifies a rigorous self-reflection process that helps trainees recognize and resolve pressing clinical and behavioral dilemmas raised by the simulation and the judgment of the instructor. The “debriefing with good judgment” approach is comprised of three elements. The first element is a conceptual model drawn from cognitive science. It stipulates that the trainees’ “frames”— comprised of such things as knowledge, assumptions, and feelings— drive their actions. The actions, in turn, produce clinical results in a scenario. By uncovering the trainee’s internal frame, the instructor can help the learner reframe internal assumptions and feelings and take action to achieve better results in the future. The second element is a stance of genuine curiosity about the trainee’s frames. Presuming that the trainee’s actions are an inevitable result of their frames, the instructor’s job is that of a “cognitive detective” who tries to discover, through inquiry, what those frames are. The instructor establishes a “stance of curiosity” in which the trainees’ mistakes are puzzles to be solved rather than simply erroneous. Finally, the approach includes a conversational technique designed to bring the judgment of the instructor and the frames of the trainee to light. The technique pairs advocacy and inquiry. Advocacy is a type of speech that includes an objective observation about and subjective judgment of the trainees’ actions. Inquiry is a genuinely curious question that attempts to illuminate the trainee’s frame in relation to the action described in the instructor’s advocacy. We find that the approach helps instructors manage the apparent tension between sharing critical, evaluative judgments while maintaining a trusting relationship with trainees.

Sharing critical judgments is an essential part of learning in simulation and debriefing. Instructors often avoid giving voice to critical thoughts and feelings because they do not want to appear confrontational and they worry that criticism might lead to hurt feelings or defensiveness on the part of the trainee. Voicing critical judgment poses a dilemma for many instructors: “How can I deliver a critical message and share my expertise while avoiding negative emotions, preserving social ‘face’ and maintaining my relationship with the trainee?” This paper offers an approach to debriefing that addresses this dilemma.

The existing debriefing literature1–9 provides little guidance on how to create an environment in which trainees feel simultaneously challenged and psychologically safe10 enough to engage in rigorous reflection. By “rigorous reflection,” we mean a process that brings to the surface and helps resolve the clinical and behavioral dilemmas and areas of confusion raised by the simulation experience. Drawing on a 35-year research program on improving professional effectiveness in the business world through “reflective practice,”11–17 this article articulates a model of debriefing for medical simulation exercises. The research program from which we adapted our approach has studied and helped thousands of practicing business executives and managers improve their personal and interpersonal effectiveness through the discipline of reflective practice. “Reflective practice” is a term coined by the late MIT professor Donald Schön to describe the discipline of examining the values, assumptions, and knowledge-base that drives one’s own professional practice [see reference 12]. The debriefing model has three primary components: The first component is a conceptual model, drawn from research in cognitive science and on reflective practice, that guides the instructor on how to illuminate the mental models that were salient in guiding trainees’ actions during the simulation. The second is an underlying debriefing “stance” that unites the apparently contradictory values of curiosity about and respect for the trainee and the value of clear evaluative judgments about trainee performance. The third component is a way of

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REFLECTIVE PRACTICE: METHOD AND THEORY

“Reflective practice” is a method used to scrutinize one’s own taken-for-granted assumptions and professional work practices. It is often accomplished in a collaborative setting: in our case, the relevant setting is the simulation debriefing wherein we help colleagues and trainees develop crisis resource management, clinical, and reflective practice skills. Researchers at Harvard and the Massachusetts Institute of Technology developed the method as part of their investigation on how to support students in their professional schools and also to help experienced professionals to develop self-correcting versus “self-sealing” practice habits. They found that “reflective practitioners,” who learned to scrutinize their taken-for-granted assumptions and mental routines, were able to self-correct and improve their professional skills. On the other hand, those without skill in this self-scrutiny tended to seal out or ignore disconfirming data and maintained ineffective habits of practice.

The theory underlying reflective practice draws on cognitive science, social psychology, and anthropology. The central idea is that people make sense of external stimuli through internal cognitive “frames,” internal images of external reality. Terms for these images are myriad: “frames of reference,” “schemata,” and “mental models,” to name a few. People don’t passively perceive an objective reality, but engage in “sense-making” by which they actively filter, create, and apply meaning to their environment. For example, a diagnosis is a frame, as are the assumptions of “It’s not a good idea to discuss mistakes here,” or “I must have a bag-mask apparatus to ventilate this patient.” Figure 1 shows the relationships among frames, actions, and simulation results.

These frames, in turn, shape the actions people take. A trauma physician facing a patient with a ventilation problem will, for example, take one set of actions if she frames the symptoms as a physical obstruction of the airway and another if her diagnosis is reactive airway disease. A nurse who holds the frame that reporting an error will lead to punishment will report errors at a very different rate than one who believes the report will be used to improve work processes. Or, in an example we will use throughout this article, consider an anesthesiologist who is called to manage an unresponsive patient in a setting where a bag-mask apparatus is not readily available. He holds the frame that he can only resuscitate using the device with which he is most familiar, a bag mask, and delays treatment while the patient descends into hypoxemia and arrest. The model suggests that people’s actions, including those of this anesthesiologist, are an inevitable result of how they frame the situation they face.

Importantly, even mistakes are usually the result of “intentionally rational” actions. That is, the actions make perfect sense given how the person was framing the situation at that moment. Continuing the example of the anesthesiologist, the instructor may be surprised that instead of considering passive oxygenation or delivering a mouth-to-mask “rescue breath,” the anesthesiologist trainee searched relentlessly for a bag-mask apparatus while the patient desaturated. These actions make perfect sense, however, when the instructor understands that the trainee held the belief that basic life support cannot be achieved without a bag-mask device, mouth-to-mask was out of the question, and passive oxygenation is something that he has never learned. It is the instructor’s job during a debriefing to help the trainee bring these frames to the surface, analyze their impact on actions, and craft new frames (e.g., “If I don’t find a bag-mask apparatus quickly, I have other options for ventilating”) and actions (giving mouth-to-mask breaths, or apply oxygen and mechanically optimize the airway opening). In practice, the instructor asks questions during the debriefing to elicit these frames.

“Results” in the reflective practice model are seen, in turn, to be prompted by the actions the trainee takes. Results are states; for example, the patient’s cardiac rhythm, whether the trainee ended up knowing the etiology of the clinical problem, or whether there was chaos or order in the clinical environment. The instructor and the trainee usually have an implicit idea of what the desired results were. For example, the patient remains stable and does not go into cardiac arrest, the trainee and others know why the patient arrested in the first place, or the resuscitation ran smoothly. The instructor explores with the trainee what frames and linked actions lead to the actual results and then, as depicted in the feedback...
arrows in Figure 1, collaborates with the trainee in developing alternative frames and actions for the future.16

**DEBRIEFING STANCE: MOVING FROM JUDGMENTAL DEBRIEFING TO DEBRIEFING WITH GOOD JUDGMENT**

Although it may be obvious how discovering trainees’ frames can enhance debriefing in medical simulation, the importance of identifying and revealing the instructor’s frames is less obvious. Instructors’ learning to identify and examine their own frames related to the simulation they observed is crucial to the process of a rigorous debriefing that is both nonthreatening and direct. Without an understanding of their own frames, instructors are handicapped in their ability to help illuminate a trainee’s frames. The reasons for this are twofold. First, the instructors have to pull from experience about the frames and actions they themselves might have employed in a similar situation and be able to disclose these to the participant. Second, instructors have to be willing to test the validity of their own frames about the trainee’s performance with trainees. To explain how this works, we start by describing and contrasting instructors’ underlying frames when they are using judgmental, nonjudgmental and debriefing with good judgment approaches (Table 1).

### TABLE 1. Contrasting Judgmental, “Nonjudgmental,” and Good Judgment Approaches to Debriefing

<table>
<thead>
<tr>
<th>Judgmental</th>
<th>Nonjudgmental</th>
<th>Debriefing with Good Judgment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gets the trainee to change</td>
<td>Gets the trainee to change</td>
<td>Creates a context for learning (and change)</td>
</tr>
<tr>
<td>External: The actions or inactions of the other person</td>
<td>External: The actions or inactions of the other person</td>
<td>Internal: The meanings and assumptions of both instructor and trainee</td>
</tr>
<tr>
<td>A mistake maker; a doer of actions</td>
<td>A mistake maker; a doer of actions</td>
<td>A meaning maker whose actions are the consequence of specific assumptions and knowledge</td>
</tr>
<tr>
<td>The instructor</td>
<td>The instructor</td>
<td>Possibly neither, either, or both</td>
</tr>
<tr>
<td>The trainee; “I (the instructor) will set you straight”</td>
<td>The trainee; “I (the instructor) will find the kindest way of filling you in on how to do this right.”</td>
<td>The instructor: “I see what you are doing or not doing, and given my view, I don’t get it;” Or “Given my view, it seems problematic; what am I missing here?” Genuine report of puzzlement and inquiry into how the trainee’s actions can make sense.</td>
</tr>
<tr>
<td>“I’m right” or “You’re wrong.”</td>
<td>“I’m right” or “You’re wrong.”</td>
<td>Respect for self (I have a take on what happened in this simulation that does lead me to think there were some problems but…) Respect for trainee (you are also a smart, well-trained practitioner, trying to do the right thing and have your own view on the simulation) so… I’m going to approach this as a genuine puzzle; not paralysis or indecision, but holding my own view tentatively. I seek clarity via honest inquiry (we both may learn something or change our minds); “Help me understand why you…”</td>
</tr>
<tr>
<td>“I’m setting you straight”</td>
<td>“I’m setting you straight”</td>
<td></td>
</tr>
<tr>
<td>“I’m teaching you”</td>
<td>“I’m teaching you”</td>
<td></td>
</tr>
</tbody>
</table>

a critical message while avoiding negative emotions and defensiveness, preserving social “face,” and maintaining trust and psychological safety. Psychological safety is a person’s sense that the immediate environment is safe for interpersonal risk taking; that trying out new ways of talking or acting will not be ridiculed; that mistakes will be worked on together as a source of learning instead of being treated as a crime to be punished or covered up. Instructors using a “nonjudgmental approach” often resolve the dilemma by employing protective social strategies such as sugar-coating errors; the “sandwich” approach in which a compliment is followed by a criticism, which is, in turn, followed by another compliment; filtering out too-critical insights; or by avoiding the problem topic altogether.

Many instructors (ourselves included) have used a Socratic approach in which we ask leading questions and use a kind tone-of-voice to lead the trainee to the critical insight we hold but are reluctant to state explicitly, a process Argyris has termed “easing in.” To our surprise and dismay, we have found that when the instructor holds a critical judgment, open-ended or Socratic questions that camouflage the judgment may backfire when the trainee becomes confused about the nature of the question or suspicious about the instructor’s unexplained motives.

Although the nonjudgmental approach has the advantage of being nonblaming, and therefore avoids some of the hurt and humiliation generated by the judgmental approach, it has serious weaknesses. In spite of a desire to appear nonjudgmental, hints of one’s views often “leak” via subtle cues such as facial expression, tenor, cadence, and body language. Furthermore and most importantly, it is not nonjudgmental. Although the surface tone of nonjudgmental debriefing may be softer than the judgmental approach, as we illustrate in Table 1, the underlying assumptions are the same: I’m right; I have the complete picture; my job is to hand-off the correct knowledge or behavior to you, the trainee. Whereas the judgmental approach often humiliates directly, the nonjudgmental approach undermines the very values—mistakes are puzzles to be learned from rather than crimes to be covered up— instructors aim to endorse with the nonjudgmental approach.

DEBRIEFING WITH GOOD JUDGMENT APPROACH

We offer a brief rationale of why we arrived at this framework. When our center started 12 years ago we relied on a nonjudgmental approach. To maintain a positive relationship with trainees, we thought it necessary to withhold judgment and use open-ended and leading questions in the hopes that the participants would arrive at the conclusions we were reluctant to say. We began to become uncomfortable with the approach when we realized that we weren’t “walking our talk.” That is, we were saying that mistakes were discussable and a source of learning, yet we found that we tended to cover them up or shy away from discussing them. This conflicted with our commitment and stated mission to make errors discussable and enhance patient safety. We thought to ourselves, “If we can’t discuss errors here in a simulation center, how can we expect others in the medical world to do it?” We felt that if we were going to advocate for patient safety, then we had to find a way to openly discuss errors—and by the same token, we had to find a way to respectfully insert our clinical and behavioral expertise into our debriefings. We migrated to a position of “debriefing with good judgment,” which allowed us, it seemed, the best of all worlds: it fit with educational theory; it allowed our participants to make mistakes and feel that they were still worthwhile and intelligent; it allowed us to use our clinical and behavioral expertise; and it fostered deep learning among both our participants and instructors.

The “debriefing with good judgment” approach shifts the focus of debriefing in several ways. First, it focuses on creating a context for adult learners (including the instructor) to learn important lessons that will help them move toward key objectives, determined either unilaterally by the instructor or collaboratively with the trainee. Second, the focus widens to include not only the trainees’ actions, but also the meaning-making systems of the trainees such as their frames, assumptions, and knowledge. Third, the instructor’s sense-making system about the simulation also becomes part of the debriefing terrain (Table 1). The instructor has one view of the situation—and it may be an expert view—that is shared as a way to initiate dialogue with the trainee. Instructors’ stating their main concerns in a debriefing is especially important in the domain of healthcare simulation where being indirect about crucial errors can perpetuate medical mistakes and undermine patient safety when the trainee returns to the real clinical environment. In this approach, in contrast to the nonjudgmental approach, the instructor shares critical or appreciative insights about the simulation explicitly. Then these insights are tested and explored with trainees step-by-step as illustrated in the next section and in Table 2.

This “good judgment” approach is one that values the expert opinion of the instructors, while at the same time valuing the unique perspective of the trainees. The idea is to learn what participant frames drive their behaviors so that both their “failures” and successes can be understood as an ingenious, inevitable and logical solution to the problem as perceived within their frames.

Cases where the instructor has significant concerns about the trainee’s clinical judgment or motives—concerns that might merit remedial training, counseling, or discipline—are best treated in a follow up. That is, if the instructor needs to convey that certain clinical approaches or social behaviors will not be tolerated in the program, that important message is a good topic for a postdebriefing conversation.

“TRANSPARENT” TALK IN DEBRIEFING:
ENACTING THE GOOD JUDGMENT APPROACH
WITH ADVOCACY-INQUIRY

The “debriefing with good judgment” frames outlined in Table 1 are enacted via the style of speaking used by the instructor. Like all frames, mental models, or schemata, the values underlying the “good judgment” approach are invisible; the only way to see them is when they are transformed...
If one is committed to manual ventilation, how does one manage What are the risks and benefits of mouth-to-mouth, mouth-to-mask, mouth-to-tube or other rescue methods? Will chest compressions provide adequate ventilation? Will apneic oxygenation be sufficient in the short run? Does one always need a bag-mask apparatus to oxygenate a patient? The instructor can now pursue such questions as: “Well, since breathing comes before circulation, I needed the manual resuscitator before doing anything else,” the instructor is starting to surface the trainee’s frame that he can only help a patient breathe if he has a bag-mask apparatus, and a valuable discussion point, linked specifically to the trainee’s need, emerges. The instructor can now pursue such questions as: Does one always need a bag-mask apparatus to oxygenate a patient? What other options does one have? Will apneic oxygenation be sufficient in the short run? Will chest compressions provide adequate ventilation? What are the risks and benefits of mouth-to-mouth, mouth-to-mask, mouth-to-tube or other rescue methods? If one is committed to manual ventilation, how does one manage personnel to get the proper equipment in the room expeditiously? into actions—and speaking is a powerful action for instructors. One particularly effective style of debriefing speech is to pair advocacy with inquiry. An advocacy is an assertion, observation, or statement, whereas an inquiry is a question. When pairing the two together, the instructor acts as a conversational scientist, stating in the advocacy his or her hypothesis, and then testing the hypothesis with an inquiry. For example, an instructor might say, “So, Damon, I noticed that you stepped away from the patient to find the bag-mask apparatus as the vital signs were deteriorating. I was thinking there possibly were alternative means to oxygenate the patient (advocacy). So I’m curious: how were you seeing the situation at that time? (inquiry)” Here, the instructor is using advocacy plus inquiry to elicit the invisible frames that guided the trainee’s actions. This is the generic approach that instructors can use in any scenario: notice a relevant result, observe what actions led to the result, and then use advocacy-inquiry to discover the frames that produced the results. Compare this utterance with a judgmental version (“Damon, I can’t believe it took you 90 seconds to notice that he was desaturating!”) or a nonjudgmental ("Guess what I’m thinking") version: “So, Damon, what was this patient’s saturation when you went to look for the bag-mask apparatus?” The judgmental version, although getting the instructor’s thoughts, judgments, and feelings front-and-center. The difference is that by treating the instructor’s views as also requiring public testing, the instructor increases mutuality by making himself or herself “vulnerable” to learning and opens their own views to challenge. Additionally, by pairing this advocacy with true inquiry, the instructor increases mutuality by respecting the trainee enough to value the trainee’s perspective, and this, in turn, improves learning. Table 3 provides an example of how to apply the debriefing with good judgment approach. The table shows how the frames-actions-results conceptual model, the instructor’s judgments, and advocacy-inquiry fit together to discover the frames that led to a respiratory arrest and chaos in scenario requiring a cardiac resuscitation.

**CONCLUSION**

The “debriefing with good judgment” approach is designed to increase the chances that the trainee will be able to hear and process what the instructor is saying without being defensive or trying to guess what the instructor’s critical judgment is. The “debriefing with good judgment” appellation is not meant to imply that the judgmental or nonjudgmental approach do not have good judgment as their basis. We believe that all three approaches often start with some important evaluative insight held by the instructor. We chose the salutary name, “debriefing with good judgment,” to highlight the positive attributes of the approach. These are providing trainees with a clear signal about the instructor’s point of view while reducing the potential “noise”—misunderstandings or defensiveness—that too often are associated with the judgmental and nonjudgmental approaches. The judgmental approach poses a substantial risk of embarrassing or humiliating the student and the nonjudgmental approach may send confusing and mixed messages to the learner. Both approaches can obfuscate or reduce the clarity of the instructor’s message and the trainee’s frames. The debriefing with good judgment approach has two constraints of which we are aware. The most important is that the model presumes that the trainee is operating with good will and is trying to do the right thing. In those rare cases where the trainee is willfully negligent or malevolent, the
model is unlikely to work. In those circumstances, other techniques are superior, such as counseling, goal setting, and discipline. Second, instructors may find difficulty with this approach when dealing with trainees who come from cultures in which deferring to authority and elders is of paramount importance and inhibits their disclosing views that may appear to contradict those of the instructor. To support the method in this context, explicit preparation regarding the goals and norms of the simulation environment is required—and sometimes that is not enough.

We conclude with the following insights. In debriefing the heat and drama of a high-fidelity clinical simulation, it is easy to focus primarily on trainees’ actions. The debriefing with good judgment approach, however, highlights three additional areas of importance. First, it is vital that instructors ask questions that, like an anthropologist, help bring to the surface and clarify the invisible sense-making process, the cognitive frames and the emotions that governed the trainee’s actions. Second, instructors work to become aware of, and explicitly narrate their own invisible judgments and concerns about crucial elements of the scenario. But instead of treating their own judgments or concerns as the single “truth,” they test their views against the trainees’ view of the same issue. This does not mean that instructors relinquish their expertise, or “sugar-coat” their judgments; rather, they state their view or “sugar-coat” their judgments; rather, they state their view about the resulting confusion. Did you feel that way?

**TABLE 3. Example Debriefing Dialogue Using Advocacy Plus Inquiry to Establish Individual then Group Frames**

<table>
<thead>
<tr>
<th>Debrief</th>
<th>Trainees</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To the group:</strong> It looked to me like it was confusing. Did you feel that way?</td>
<td><strong>Group:</strong> Several members agree.</td>
<td>Establish a common problem.</td>
</tr>
<tr>
<td><strong>To the group:</strong> So, from perspective it seemed that confusion may have prevented you from effectively executing respiratory resuscitation and, then, later the ACLS algorithm. How did you all see it?</td>
<td><strong>Group:</strong> Yes, the confusion was a problem etc. etc.</td>
<td>Establish clinical consequences. Thus the problem of lack of role clarity is established.</td>
</tr>
<tr>
<td><strong>To Diana:</strong> Diana, it looked to me like you might have been the leader. Did you feel that was your job?</td>
<td><strong>Diana:</strong> Yes, I was the leader sort of, but we never said anything about it. And then later, it seemed that Suresh was more in charge.</td>
<td>Explore actions that may have led to the resulting confusion.</td>
</tr>
<tr>
<td><strong>To Diana:</strong> I noticed that too. You looked like you were managing the event, but no one ever said anything.</td>
<td><strong>Diana:</strong> Right.</td>
<td></td>
</tr>
<tr>
<td><strong>To Diana:</strong> I was thinking that it would have helped for either you or someone in the group to explicitly state that you were the leader. I am wondering why that didn’t happen?</td>
<td><strong>Diana:</strong> Well, I wasn’t too sure of myself. I mean the other people are pretty much equal to me and I didn’t want to seem bossy and unlikable. Also, I was unsure about whether I would do a good job and maybe I would look stupid.</td>
<td>Diana’s frame is established.</td>
</tr>
<tr>
<td><strong>To the group:</strong> Anyone else have a thought?</td>
<td><strong>Eliza:</strong> I would have felt much better if I knew Diana was in charge. I certainly didn’t want to do it and we needed someone to be in charge. But, I didn’t want to put Diana on the spot.</td>
<td>Beginning to understand Eliza’s frame.</td>
</tr>
<tr>
<td><strong>To the group:</strong> In my experience, I have occasionally heard someone running an event like this say, “I’ll run this event, but you all have to help me.” I am curious what you all would have thought if Diana has said something like that?</td>
<td><strong>Ricardo:</strong> I would have been relieved and grateful to Diana. Someone has to run it! I guess I could have just confirmed that Diana was the leader.</td>
<td>Group beginning to reframe.</td>
</tr>
<tr>
<td><strong>Turning to Diana:</strong> Diana, do you have a thought on this?</td>
<td><strong>Diana:</strong> Yes, I can see that is probably a good idea. Then I don’t have to look too bossy and I have people on the team who know they have to help me.</td>
<td>Diana moves to a new frame.</td>
</tr>
</tbody>
</table>

The debriefer’s goal is that trainees understand the importance of role clarity and establishing an event manager for resuscitations. The example shows how the debriefer: 1) helps to identify an important problem (establishing an event manager); 2) uncovers one student’s frame; 3) explores other student’s frames; 4) facilitates reframing; and 5) offers a new action to deal more effectively with establishing an event manager in the future.

**ACKNOWLEDGMENTS**

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ber of key points presented in this paper. Two anonymous reviewers provided extremely helpful feedback that improved the paper.

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