An Embedded Curriculum to Teach Critical Incident Debriefing to Internal Medicine Residents

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ABSTRACT

Background Internal medicine residents frequently experience distressing clinical events; critical event debriefing is one tool to help mitigate their effects.

Objective To evaluate the effectiveness of a 1-hour workshop teaching residents a novel, efficient approach to leading a team debrief after emotionally charged clinical events.

Methods An internal needs assessment identified time and confidence as debriefing barriers. In response, we created the STREAM (Structured, Timely, Reflection, tEAM-based) framework, a 15-minute structured approach to leading a debrief. Senior residents participated in a 1-hour workshop on the first day of an inpatient medicine rotation to learn the STREAM framework. To evaluate learning outcomes, participants completed the same survey immediately before and after the session, and at the end of their 4-week rotation. Senior residents at another site who did not complete the workshop also evaluated their comfort leading debriefs.

Results Fifty out of 65 senior residents (77%) participated in the workshop. After the workshop, participants felt more prepared to lead debriefs, learned a structured format for debriefing, and felt they had enough time to lead debriefs. Thirty-four of 50 (68%) workshop participants and 20 of 41 (49%) comparison residents completed the end-of-rotation survey. Senior residents who participated in the workshop were more likely than nonparticipants to report feeling prepared to lead debriefs.

Conclusions A brief workshop is an effective method for teaching a framework for leading a team debrief.

Introduction

Physicians routinely experience challenging events during clinical work, including adverse patient outcomes and deaths, and trainees may be particularly vulnerable to developing symptoms of posttraumatic stress disorder and burnout.[1-3] Among US resident physicians, 28% describe in-hospital cardiac arrests as traumatic events that impact their future performance.[4]

Emotion-focused debriefing is one tool to mitigate the impact of critical events on physician well-being.[5] Debriefs vary in scope and format, from attending-led debriefs days after a patient death[6] to a code blue team "pause" after a cardiac arrest.[7] Trainees have reported finding debriefing with senior residents more comfortable and meaningful than debriefing with supervising attendings.[1,8] However, senior residents may not have the skills needed to lead debriefs.

Previous studies have demonstrated that a 1-hour workshop improves residents' confidence in leading peer debriefs.[9,10] To build on this work, we created a novel critical incident debriefing framework, taught the framework to senior residents during a 1-hour workshop, and evaluated the effect of our intervention on senior residents' preparedness to lead debriefs.

DOI: http://dx.doi.org/10.4300/JGME-D-23-00273.1

Editor's Note: The online supplementary data contains the STREAM framework for debriefing and the surveys used in the study.

Methods

Intervention

Workshop Creation: Our workshop was designed as part of the University of Washington Internal Medicine Residency Program curriculum. The residency program has 176 residents who rotate at 3 hospitals: a county hospital, an academic medical center, and an affiliated Veterans Affairs (VA) medical center. We assembled a group of educators with experience designing workshops teaching residents serious illness communication skills to create our debriefing framework and workshop, and we reviewed 2 published debriefing curricula for pediatric residents.[9,10] We then developed a needs assessment that was distributed via email to all residents between December 2020 and February 2021. Three key ideas from the needs assessment informed the structure of our debriefing framework and workshop: (1) residents lack confidence leading debriefs; (2) the inpatient medicine service at our county hospital has a high volume of critical events; and (3) residents perceive time as the largest barrier to debriefing.

We created the STREAM (Structured, Timely, Reflection, tEAM-based) framework, a 6-step debriefing framework that can be completed in 15 minutes (online supplementary data TABLE). The approach focuses on processing emotions after events, unlike more traditional debriefs that focus on evaluation of team performance, quality improvement, or gaps in medical knowledge. The framework begins with the facilitator introducing the concept of debriefing and setting ground rules for the group. Next, participants describe their memories of the event. In the third step, the facilitator asks participants to reflect on the emotions they experienced during and after the event. The facilitator then shares coping strategies and resources for further support. The debrief concludes with participants sharing a meaningful part of the experience they plan to carry into their future practice.

We designed a 1-hour workshop for second- and third-year internal medicine residents to introduce the STREAM framework. We grounded the workshop in the concept of deliberate practice, meaning participants should view leading debriefs as a skill that can be improved upon by practice and reflection.[11] The workshop begins with a reflection on previous debriefing experiences. Next, the facilitator introduces the STREAM framework and then asks residents to practice the stepwise approach with 3 challenging team scenarios: (1) trainee reluctance to engage in debriefing; (2) trainee desire to focus on improvement opportunities and medical facts rather than emotional impact; and (3) trainees with disparate emotional reactions to the case. Finally, workshop facilitators highlight additional resources for support after a critical event. Participants leave with a reference handout containing the debriefing steps, sample language for challenging scenarios, and facilitation tips.

Workshop Implementation: The workshop was embedded on the first day of an inpatient rotation at our county hospital between June 2021 and May 2022. Participants received reminders the week before and the morning of the workshop. Attending physicians were asked to support the interns and medical students to protect senior residents' time for the workshop, and hospital medicine leadership agreed to not assign new patient admissions to participating residents' teams during the workshop.

The 4 facilitators were all academic hospitalists, 3 of whom were trained in palliative care. The facilitators met for one hour to discuss the materials and ask questions, and each facilitator was invited to observe a session prior to leading. The workshop was piloted with 5 residents and modified based on feedback. After 5 workshops, facilitators met to review preliminary survey data and share best practices. The only change to the workshop was uniformly starting with the reflection question: "What has been your previous experience, positive or negative, participating in debriefs after critical events?"

KEY POINTS

What Is Known
Critical event debriefing can be a useful tool in processing stressful events. Residents on a team experiencing a stressful event are uniquely positioned to run a debriefing, but it can be difficult to integrate the needed leadership training into a curriculum.

What Is New
This study reports on the outcomes of a 1-hour training given to senior residents at the beginning of an inpatient medicine month, showing increased confidence in leading debriefings.

Bottom Line
Program leaders looking for innovative ways to increase the number of debriefing leaders and to train residents in a just-in-time manner can look to this article for a fresh approach.

Outcomes and Evaluation

Participating residents were assigned a unique study identifier to link pre- and post-workshop surveys. To establish a comparison group, all senior residents who had completed an inpatient wards rotation at the county hospital or VA hospital during the training period were invited to complete an end-of-rotation survey, regardless of whether they had completed the training. Survey questions are available as part of the online supplementary data.

We hypothesized that at the end of their rotation, workshop participants would demonstrate improvement in all 5 primary outcomes and report higher confidence in and increased frequency of leading debriefs.

Data Analysis

We dichotomized survey responses into "yes" (4-agree and 5-strongly agree) and "no" (1-strongly disagree, 2-disagree, and 3-neutral) to ensure that a statistically significant result correlated with the desired outcome of participants being able to independently facilitate debriefs. We used paired *t* tests for the pre-post analyses of the workshop participants and chi-square tests to compare end-of-rotation skills between residents trained and not trained to lead debriefs.

All workshop materials were reviewed by the University of Washington Institutional Review Board who determined the activity was exempt from research oversight.

TABLE 1
Pre- and Post-Workshop Survey Responses

Question	Participants who Responded "Agree" or "Strongly Agree"		*P* value
	Pre-Workshop, (N=50), n (%)	Post-Workshop, (N=50), n (%)	
I have a structured approach to leading debriefs	8 (16)	49 (98)	<.001
I feel prepared to lead debriefs	17 (34)	46 (92)	<.001
I feel prepared to respond to participants' emotions during debriefs	28 (56)	45 (90)	<.001
I have enough time to lead debriefs	14 (28)	35 (70)	<.001
I plan to lead debriefs	43 (86)	49 (98)	.02

Results

Workshop Implementation and Outcomes

We conducted 13 workshops with 50 of 65 (77%) senior residents in attendance. TABLE 1 reports the workshop outcomes' pre-post assessments, showing significant increases for all 5 measures.

End-of-Rotation Survey

We received end-of-rotation surveys from 34 of 50 (68%) workshop participants, and from 20 of 41 (49%) comparison group residents. Both groups had similar exposures to critical events; significantly more workshop participants felt prepared to lead debriefs (TABLE 2).

Discussion

A 1-hour workshop improved internal medicine senior residents' self-reported preparedness in leading critical event debriefs. Preparedness persisted one month after the workshop and was superior to peers who did not complete the workshop.

Most participants reported planning to lead debriefs prior to the workshop, though few felt confident

TABLE 2
End-of-Rotation Survey Responses by Respondent Group

Survey Questions/Respondent Group	Trained Residents (N=34), n (%)	Comparison Residents (N=20), n (%)	*P* value
What type of critical event did you find easiest to debrief?			.41
Adverse patient outcomes	2 (6)	2 (10)	
Code blues	7 (21)	1 (5)	
MICU transfers	7 (21)	7 (35)	
Patient deaths	6 (18)	2 (10)	
Not answered	12 (35)	8 (40)	
What type of critical event did you find most challenging to debrief?			.81
Adverse patient outcomes	13 (38)	7 (35)	
Code blues	3 (9)	0 (0)	
MICU transfers	1 (3)	2 (10)	
Patient deaths	5 (15)	4 (20)	
Not answered	12 (35)	7 (35)	
Strongly/agree with:			
I felt prepared to lead critical event debriefs this month	31 (91)	9 (45)	<.001
I felt prepared to respond to my team's emotion after critical events this month	30 (88)	14 (70)	.10
Debriefing critical events helped my team process emotions after critical events	29 (85)	14 (70)	.18
Debriefing critical events helped mitigate feelings of burnout for me	22 (65)	10 (50)	.29

Abbreviation: MICU, medical intensive care unit.

doing so. Residents acquire many skills on the job, without the aid of targeted education. However, despite residents' intentions to lead debriefs regardless of level of skill, the difference between trained and untrained residents' perceived preparedness on the end-of-rotation survey suggests that clinical experience alone is insufficient to improve these skills.

Previous work on teaching residents debriefing skills focused on single workshops, without longitudinal follow-up or practice opportunities.[9,10] These prior workshops also focused primarily on residents debriefing each other as peers, rather than as a team leader.[9,10] Anchoring our workshop in a rotation known to have a high volume of critical events where residents serve as team leaders provided participants ample opportunities to continue developing their skills after the workshop.

Our study is limited by senior residents' self-reported measures of confidence and perceived debriefing skills. Including all 5 outcomes in our pre-post survey also increases the possibility of Type 1 error due to multiple comparisons. Finally, our comparison between workshop participants and nonparticipants may be confounded by differences in patient population and resident experience at the different hospitals, as well as nonresponse bias among workshop nonparticipants.

Critical events are ubiquitous in medicine, from clinics to the emergency department to the operating room. Future work should include expanding training to other specialties and clinical settings so that all physicians in leadership roles have the skills necessary to lead critical event debriefs.

Conclusions

A brief workshop improved senior residents' preparedness to lead debriefs with sustained effect.

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Funding: The authors report no external funding source for this study.

Conflict of interest: The authors declare they have no competing interests.

This work was previously presented as a poster and the American Thoracic Society 2022 Annual Meeting, May 13-18, 2022, San Francisco, California, USA.

The authors would like to thank Kelli Corning, Kenneth Steinberg, Robert Harrington, Kymberly McDonald, Anna Hagan, Lauge Sokol-Hessner, and Randi Morrison for their support of this project.

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Received April 17, 2023; revision received October 23, 2023; accepted November 10, 2023.