International Journal of Paramedicine

Published by the National EMS Management Association (USA)

RESEARCH REPORTS

AN ASSESSMENT OF PREHOSPITAL CLINICIAN EDUCATION AND EXPERIENCE AROUND THE DELIVERY OF BAD NEWS

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Recommended Citation: Tillet, Z., Martel, J., Crispo, M., & Strout, T. (2025). An assessment of prehospital clinician education and experience around the delivery of bad news. *International Journal of Paramedicine*. (10), 26-36. https://doi.org/10.56068/QJKD9531. Retrieved from https://internationaljournalofparamedicine.com/index.php/ijop/article/view/3220

Keywords: bad news, breaking bad news, prehospital, cardiac arrest, termination of cardiac arrest, burnout, emergency medical services, EMS, paramedicine

Received: August 22, 2024
Revised: January 26, 2025
Accepted: February 7, 2025
Published: April 16, 2025

Funding: External funding was not used to support this work.

Disclosures: None.

ABSTRACT

Objectives: Emergency Medical Services (EMS) clinicians are often tasked with the delivery of bad news including making death notifications and informing loved ones about the termination of resuscitations. Existing trainings for breaking bad news are based around palliative care conversations in dramatically different clinic or hospital settings. We hypothesize that prehospital clinicians are not receiving formal training in the skill of breaking bad news and the delivery of bad news can have harmful mental health repercussions. The goals of this study were to: determine if prehospital clinicians are receiving training on delivering bad news, how frequently they are doing so, and to explore negative consequences potentially arising from these experiences.

Methods: We conducted an electronic, cross-sectional survey of U.S. EMS clinicians. Items assess EMS clinicians' experiences around training related to breaking bad news, frequency of delivering bad news, and experiences of mental health consequences from doing so.

Results: 1113 participants responded, representing all 50 US states. 84% (933/1111) of participants reported having delivered bad news at least several times in the last year with 42% (422/1001) reporting receiving no education around this topic. 96% (953/991) of participants reported that additional training would be helpful. 54% (528/964) of participants reported experiencing some adverse mental health symptoms (intrusive thoughts, lost sleep, emotional difficulty) in the last year related to delivering bad news and 7% (71/964) experienced these effects frequently.

Conclusion: EMS clinicians are frequently responsible for delivering bad news, and more than half report adverse mental health symptoms associated with this task. Despite the frequent occurrence and associated emotional trauma, EMS clinicians report insufficient or no training at all in how to deliver bad news. The development and implementation of educational curriculum and mental health support around the delivery of bad news is necessary.

INTRODUCTION

Background and Importance

In the complex and dynamic world of prehospital medicine, clinicians are faced with innumerable challenges. Among these is the daunting task of the delivery of bad news to patients and their families. This ranges in intensity, from the notification of serious illness or injury, to notification of a death or a decision to

terminate an active resuscitation. This has been part of EMS clinicians' responsibilities for decades, but little research exists around this topic. In 2011, the National Association of EMS Physicians (NAEMSP) took an official position that "Emergency Medical Services (EMS) providers should be able to utilize evidence-guided methodology for the termination of resuscitation in nontraumatic cardiopulmonary arrest" (National Association of EMS Physicians, 2011). Roughly 350,000 prehospital cardiac arrests occur every year in the US alone (Benjamin et al., 2019). As the practice of terminating prehospital cardiac arrest becomes a national standard, delivering the bad news of failed resuscitation efforts and a patient's death is likely falling on the shoulders of our EMS clinicians. While no data exists on how many EMS agencies are currently practicing prehospital termination of cardiac arrest, there are entire statewide agencies such as in Maine where a termination of resuscitation protocol exists. A recent study analyzing data from 1,514 EMS clinicians found that 77% of ALS providers reported at least one adult death notification in the past year (Campos et al., 2021). As hospitals continue to strain under high patient censuses, there may be increased pressure for agencies to adopt EMS field termination policies, further increasing the need for delivery of bad news by EMS clinicians.

The current national EMS education standard does not include education around the subject of breaking bad news. At the level of EMT-basic, clinicians receive teaching on the subject of "Dealing with Death and Dying" including teaching on the stages of grief after loss i.e. denial, bargaining, etc. (National Emergency Medical Services Education Standards, 2022). At the paramedic level, there is no mandated education mandated specific to the delivery bad news (National Emergency Medical Services Education Standards, 2009). US-based research examining whether prehospital clinicians are receiving training on how to deliver bad news is scant. A single 2021 study found that only about half of EMS clinicians reported undergoing death notification training as part of their initial EMS education with fewer receiving additional continuing education on the subject (Campos et al., 2021).

Another burden facing EMS clinicians is the emotional ramifications associated with delivering bad news. This is an inherently stressful task and several small studies have shown that even in simulated environments delivering bad news by physicians can lead to significant stress responses and reports of increased burnout (Brown et al., 2009). There is also a correlation between poor communication and increased burnout among physicians in simulated situations (Brown et al., 2009). It is certainly possible that EMS clinicians may experience ill effects from delivering bad news, but this has yet to be assessed.

Goals of Investigation

The goals of this study were to describe the current educational landscape, frequency of bad news delivery, and potential adverse experiences for prehospital clinicians around the topic of breaking bad news. This study will help to assess how frequently EMS clinicians are breaking bad news, if they have received training on the subject and if they feel this training was adequate. Ultimately, we hope to determine if there are any sequalae related to breaking bad news and establish the need for additional education and best practice guidelines around this topic.

STUDY DESIGN

A cross-sectional study design was utilized to collect self-report data from EMS clinicians including emergency medical responders, emergency medical technicians at the basic, advanced, and paramedic levels, and physicians who identified as EMS clinicians. Data was only collected for participants over the age of 18 who reported living in the US or one of its territories. The survey was distributed electronically using Qualtrics survey software and was self-administered by participants. The primary means of distribution was through posting the survey link on the social media platform Facebook on various EMS related "groups". Several thousand direct emails were also distributed to EMS clinicians located in the state of Maine where addresses were obtained via public record requests. No response rate data was collected as there was no way to see how many people were exposed to the survey via social media groups. The study was determined to be exempt by the Maine Health Institutional Review Board.

SURVEY

We developed a 16-item survey tool with items representing the following domains: demographics (age, gender identity, current state), EMS background, career vs volunteer status, practice environment, experiences breaking bad news, confidence in breaking bad news, training on breaking bad news, and impact of breaking bad news. Items about provider experience with breaking bad news included questions such as "In the last year, have you had to tell a family member that their loved one has died?" Additional questions assessing provider confidence in their ability to break bad news and their assessment of how such incidents went utilized a Likert-type scale. Participants were asked about prior training on breaking bad news, the adequacy of any training received, and if they were interested in receiving additional training. Clinicians were queried about the presence of troublesome symptoms over the last year including repeatedly replaying a conversation in their head afterwards, lost sleep, or emotional struggles after delivering bad news. One open-ended item was included to provide participants with an opportunity to share any additional information.

DATA ANALYSIS

Data was collected using Qualtrics survey software (Qualtrics, Seattle, WA) and were then downloaded into SPSS v. 27 (SPSS, Inc., Chicago, IL) statistical software for analysis. As participants were free to skip any question, surveys with partial data were included; only surveys with no responses were excluded from analysis. Descriptive statistics were used to describe participant characteristics and quantitative responses are summarized using numbers and percentages. Continuous data for groups were compared using one-way analysis of variance and the Sheffé test for post hoc comparisons. Comparisons of proportions were made using chi-square or Fisher's Exact Test, as appropriate for the data and we accepted a threshold of 0.05 as statistically significant. We took a qualitative descriptive approach to analyzing responses to the single open-ended item (Sandelowski, 2000). Responses to this item were first read by the team to establish a general feel for the data. Following the initial reads, the researchers selected related bits of text by re-reading the responses and highlighting all of the text relevant to the topic of the survey question. The research team then evaluated for common themes that cut across responses. This work was completed in a reflexive manner, whereby the research team continually read,

re-read, coded and re-coded bits of text as new insights about the data emerged during the process of constant comparison (Strauss & Corbin, 1998).

RESULTS

A total of 1118 participants provided at least partial data for analysis. Participant demographic characteristics are summarized in Table 1. Respondents represented all fifty states of the United States and Puerto Rico.

Participants were asked to consider their experiences over the course of the last year when responding to survey items regarding the frequency with which they are charged with breaking bad news. The majority of participants [84% (933/1111)] endorsed having delivered bad news at least several times during the year. Furthermore, 35% (393/1116) reported breaking bad news 6 or more times in the last year. Eighty-six percent (896/1046) of participants reported sharing that a loved one had died during the year and 24% (256/1046) reported doing so 6 or more times.

Many participants reported receiving no education on the subject of breaking bad news (42%, 422/1001). Of those who did report receiving training, 44% (256/582) shared that their training occurred while in EMT or paramedic school. Only 9% (52/582) of respondents endorsing receipt of training reported that it occurred at an employer or volunteer service. About one quarter of participants [24% (142/582)] reported receiving training both as part of their EMS education and at their job or volunteer service. Of clinicians with less than 5 years of experience, 48% (66/138) reported receiving some training while in school, while EMS clinicians with greater than 10 years of self-reported prehospital experience reported receiving education on the subject as part of their EMS education 37% (260/688) of the time, a statistically significant difference (x^2=4.85, df=1, p=0.028). Little variation was noted when comparing exposure to education on breaking bad news by geographic location with 40% (146/336) of rural clinicians, 43% (159/369) of suburban clinicians, and 43% (114/265) of those practicing in urban locations reporting no education in this area (x^2=0.01, df = 2, p=0.995). Of respondents who had received education, only 26% (226/869) reported their training and education was sufficient. The great majority [96% (964/1002)] report-

Characteristic	N (%)
Gender	
Male	685 (61%)
Female	413 (37%)
Nonbinary, transgender, agender or another gender identity	11 (1%)
Unknown	9 (1%)
Age (Mean 41 years, range 17-81 years)	
17-30	259 (24%)
31-40	293 (27%)
41-50	263 (24%)
51-60	183 (17%)
61-70	84 (8%)
71-80	11 (1%)
>80	1 (0.1%)
Professional Role	
First Responder	10 (0.9%)
EMT	341 (31%)
EMT – Advanced	64 (6%)
Paramedic	636 (57%)
Physician	9 (0.8%)
Nurse	23 (2%)
Other	34 (3%)
Employment Model	
Volunteer	99 (9%)
Employed	843 (75%)
Both	176 (16%)
Primary Setting Type	
Urban	287 (26%)
Suburban	424 (38%)
Rural	399 (36%)
Years of Experience	
Less than 2 years	35 (3%)
2-5 years	165 (15%)
6-10 years	160 (15%)
More than 10 years	747 (68%)
Notes: Not all categories sum to 1118 due to missing data. EMT = emergency medical technician.	

Table 1. Demographic characteristics of study participants.

ed that additional training would be helpful, with 51% (519/1002) reporting this training would be "very helpful."

Clinicians generally reported high levels of confidence around breaking bad news on a scale of 0 (not confident at all) through 10 (completely confident). The mean confidence score for all clinicians was 7.15 points (SD 2.03), 95% CI: 1.02-7.27. Mean confidence scores increased with participants' years of practice experience as shown in Table 2, with the lowest confidence scores being reported by participants with less than 2 years of experience (mean 5.11, SD 2.50, 95% CI: 4.10-6.13) and the highest scores reported by those with more than 10 years of practice (mean 7.54, SD 1.88, 95% CI: 7.40-7.68). In one-way analysis of variance, these differences were statistically significant (F=34.712, p<0.001), with post-hoc analysis demonstrating significant differences when comparing each experience level group (p<0.05 for each comparison) except when comparing the 2-5 year vs. 6-10 year groups (p=0.819).

Years of Experience	Confidence Mean (95% CI)	Comparison Group	Mean Difference	SE	95% CI	*p*-value
< 2 years	5.11 (4.10 – 6.13)	2-5 years	-1.17	0.411	-2.32 - -0.020	0.044
		6-10 years	-1.39	0.413	-2.54 - -0.233	0.010
		>10 years	-2.43	0.387	-3.51 - -1.34	<0.001
2-5 years	6.29 (5.97 – 6.61)	6-10 years	-0.22	0.224	-0.843 – 0.411	0.819
		>10 years	-1.56	0.173	-1.74 - -0.771	<0.001
6-10 years	6.50 (6.17 - 6.84)	>10 years	-1.04	0.176	-1.53 - -0.548	<0.001
> 10 years	7.54 (7.40 – 7.68)					

Notes: SE = standard error; CI = confidence interval. One-way analysis of variance: F = 34.712; p < 0.001. Post-hoc analysis with Scheffé's test.

Table 2. Participant self-report confidence in delivering bad news.

When queried about experiencing negative sequelae (intrusive thoughts, lost sleep, emotional difficulty) after delivering bad news, 54% (523/964) of clinicians reported these effects and 7% (71/964) experienced these effects frequently. Clinicians with less experience seemed to experience these effects more frequently, with clinicians who had less than 5 years' experience reporting some negative sequalae 70% (115/164) of the time with 11% (18/164) experiencing those effects frequently. Clinicians with ≥ 10 years' in practice reported suffering negative sequelae 50% (333/664) of the time and reported being affected frequently by negative sequelae at almost half the rate of their less experienced colleagues at 6.6% (44/664).

A single open-ended item prompted, "If you feel comfortable doing so, please use this space to share an experience you have had with breaking bad news to a patient or family and the emotional impact it had on you. This experience could be good or bad." This elicited a total of 302 written responses. Qualitative findings supported and clarified quantitative responses through emergence of several themes. Major themes included the high emotional impact around calls involving the death of a child. Frequently deaths from suicide or deaths where there was an extreme grief reaction from family were mentioned for their emotional impact as well. Other themes included difficulty in breaking bad news after a death in the first responder's own life as well as knowing the person who died or their family. Two more common themes of note were that clinicians fre-

quently expressed what they felt worked well when breaking bad news to families and general concerns over lack of education and feeling unprepared to approach these situations. Exemplary quotes are noted in Table 3.

DISCUSSION

Our study showed a diverse sample, representing EMS clinicians from across the United States of various ages, experiences, practice style (volunteer vs career), geographic location and practice settings. The results of this study demonstrate that EMS clinicians are frequently responsible for delivering bad news. The vast majority of clinicians (86%) reported preforming at least one death notification in the last year with almost a quarter

Major Theme	Illustrative Quotations
The death of a child and notifying parents is extremely difficult	Always pediatric or infant deaths are troublesome. It's not delivering the news that is emotional, it is the death event itself.
	I've had several cases where I've had to tell a mother that her child or infant died and that is terrible. The scream that mother let out immediately after hearing her child is dead still rings in my ears.
	I had to inform a distraught mother that in spite of our best efforts, her infant could not be resuscitated. By appearance, the mother had rolled over onto the infant during sleep and asphyxiated her. The mother kept shrieking 'It's my fault' and my efforts to calm and comfort her were met with minimal success. I have observed many instances of death and extreme suffering over the course of a 40-year EMS career. The primal sounds produced by this distraught mother were unpleasantly memorable.
	The hardest of these conversations is telling a family member that their child has died. This is because I'm a parent.
	I've been an EMT and paramedic for over 35 years. Telling a parent that their child has died have been the incidents of greatest emotional impact to me over the years.
Breaking the news of death by suicide or when there are extreme grief reactions is a challenge	Young adult suicides by violent means has an impact on the whole team.
	I recently had to confirm to a family that the husband had passed due to suicide. The screams and cries of the wife still stick with me. She couldn't even call her parents. She asked me to do it. She was shaking and sobbing. I still don't know if I made the right choice or not.
	I had to tell a mother that her teenage child hung himself. I couldn't really think of anything to say to the mother other than, 'I'm sorry' which sounded so insufficient. I held her hand and let her cry because what else could I do? The emotions hit pretty hard and I still think about it often, even years later.
	I had a 14-year old who overdosed; her mom was devastated and she just wanted me to know she was a good kid and she was being bullied a lot over the last 2 years. I felt so bad for this family and I still think about them to this day.
	Two days ago, I had to tell a 20-year-old male that his dad had shot himself in an attempt at suicide. I then said that he was successful. I felt afterwards that this was not a great way to break the news.
	I remember every single situation, seemingly random assortments of details while on the scene, and a lot of the sounds of crying/screaming/etc. from families many years after the event(s).
	I cannot get out of my head is the blood curling cry from a woman in when I informed her that her spouse was dead. Every time I have to break the news to another or when people talk about bad calls all I can hear is her voice.
It is hard to deliver bad news to those you know or when you know the person who has died	I personally had to break the news to my mother that my own father had passed away after resuscitation attempts. It still haunts me a bit; it's been almost two years.
	The family happened to be a close family friend that had seen me grow up and I had been friends with her kids for most of my childhood. I will never forget the conversation and can recall every single detail by memory only. I've seen her multiple times in the community and only recently has she been able to talk to me again.
	I led a late night/early morning code on a man in his 30s or 40s. The patient was a friend, fellow firefighter/EMT and former co-worker and had married into a family with whom I am friendly. When we had run through the ACLS algorithm without any positive change, I stepped away to phone a doc to ask for a death pronouncement. When I turned to the wife and her parents, who had been watching everything from the kitchen area, I failed badly. I spoke to them, but they did not understand. In my memory, it was a nightmarishly long time before I could make myself understood. When I recall this incident, several vivid mental pictures pop right up.

Table 3. Major themes and exemplar quotes.

Major Theme	Illustrative Quotations
We lack education or preparation to deliver bad news	I hate relaying bad news to family. I am wholly untrained and unprepared for this. It does the family a disservice and makes me feel terrible.
	Any time I've had to break the news I always end up feeling awkward and I will replay the whole conversation and feel like I said the wrong thing, said something stupid, or could have said something better/had a better response.
	I would have liked to have better crisis intervention training in my initial training. I sought out training later after having to do a death notification and feeling unprepared.
	I feel like training is not accessible or talked about in the EMS realm and should be. I also feel that the majority of EMS providers, myself included prior to continuing education and professional counseling, have profound compartmentalization skills and don't fully process the grief associated with delivering bad news in the adrenaline dump phase.
	I have felt that my peers were not equipped to deliver bad news effectively or empathetically. It is a skill that needs to be taught, honed, and valued.
Having strategies that work is helpful in delivering bad news	Allowing the family to see the attempts to resuscitate the patient (if they want to) is a very important aspect of helping them understand what happened, what was done, and to get closure.
	Each one has taught me something and I refine my approach and language each time I have to in an attempt to develop best practice.
	I always tell the family their loved one is dead. I do so after I've outlined the care that was rendered. I always offer a hug. I can't remember anyone declining this. Very important part of our job.
	I always give bad news the same way. I reintroduce myself, state my position, explain what has happened and the outcome.
	I am usually the one on any call that handles the family. Everything from being with them while the crew is working on the patient, letting them know their loved one is dead, calling the funeral home, trying to make the body presentable for the family while they wait for the funeral home to arrive and I usually help removed the deceased and then remain with the family until I feel it is OK to leave.
	I absolutely use the words 'dead,' 'death,' or 'died.' Empathy is key.
	I have found that in most cases being straightforward with people is the best way to deal with delivering bad news and most people appreciate that you do this.
	I feel like the act of explaining the resuscitation process to the family is so important to the family, but it's not something many people feel comfortable with.
	I was taught and have found that explaining treatment and using definitive statements 'he is dead' is the best course.

Table 3 (continued). Major themes and exemplar quotes.

(24%) of clinicians reporting that they told a family that a loved one had died six or more times in the last year. Breaking bad news appears to be a regular part of work for many EMS clinicians and more commonplace than previously noted in the literature (Campos et al, 2021). One thing that should be taken into account is that this study was primarily conducted in January and February of 2022 on the tail end of the Delta variant of COVID 19. This was a year of great strain on the health care system which may have impacted the amount of people dying at home or may have potentially affected the frequency at which EMS clinicians may have been tasked with breaking bad news.

In regards to EMS clinicians education around breaking bad news the vast majority of those who received training around this topic found it to be insufficient. Furthermore 42% of EMS clinicians received no training at all. There are likely many factors that play into this lapse in education. Perhaps a major factor is in part due to current standard methodologies of delivering bad news taught to medical professionals are not designed for the prehospital environment and likely only of limited applicability. Examples include SPIKES and the BREAKS methodologies (Baile et al., 2000; Narayanan et al., 2010). The SPIKES protocol was the earliest to be developed and is a six-step protocol that was developed for the delivery of bad news to patients with cancer (Baile et al., 2000). While some aspects of this protocol may be applicable many of the other components would be

challenging to accomplish in the prehospital environment. For example, the initial "S" stands for "setting up the interview," where an office-based physician might ensure a calm, quiet environment where everyone can sit at eye level to discuss the topic at hand. This is a significant departure from what EMS clinicians experience when called to cardiac arrest where they have little to no control over the environment. There is a protocol known as GREIV_ING that is designed around death notifications specifically in the emergency department which is likely more applicable to what EMS clinicians face in the field, but again is designed around the specific needs of the emergency physician and may not be wholly applicable to the prehospital setting.

It does appear EMS clinicians with less than five years' experience (48%) received training at higher rates than those with greater than 10 years' experience (37%) a difference that was statistically significant. This suggests that there may be a push amongst EMS educators to increase education amongst their younger cadre. Practice environment i.e. urban vs rural seemed to have little effect on who was receiving this education. Across all clinicians (1094) had an average confidence level 7.15 out of 10 with a standard deviation of 2.00 however this confidence reporting was much lower amongst EMS clinicians with less experience. For example, clinicians with less than two years' experience on average reported significantly lower confidence scores (5.11) than clinicians with greater than 10 years' experience (7.54) when it came to breaking bad news. This suggests that as clinicians gain more experience in their career, they may become more comfortable in their ability to have these conversations.

Overall clinicians who have received training around the subject of breaking bad news seem to not feel this was sufficient with only 26% reporting that it was sufficient and 96% reporting additional training would be helpful. Reportedly 51% of clinicians felt this training would be "very helpful". This data strongly suggests that EMS clinicians are interested in learning more around this topic. It is plausible that this stems from some of the issues discussed in the beginning of this study and the lack of a protocol, standardized training or system designed to meet the specific needs of EMS clinicians. This data suggests that that not only are many clinicians not receiving education, those who do, do not find it sufficient and the vast majority are interested in receiving additional training.

There is evidence indicating clinicians can be trained in the delivery of bad news. Both medical students and emergency medicine residents demonstrated significant improvement in their ability to break bad news as well as other factors such as improved communication skills and self-efficacy after only a two to four-hour training (Servotte et al., 2019; Hobgood et al., 2009). An additional study utilizing the earlier mentioned GREIV_ING framework demonstrated that after a single 90-minute course, paramedics demonstrated increased confidence and competency in breaking bad news (Hobgood et al., 2013). While limited other studies exist around breaking bad news in regards to EMS providers it is entirely possible that further trainings could be developed and implemented successfully around this topic.

This study also demonstrates that breaking bad news may be exhibiting a heavy toll on EMS clinicians emotionally. With 54% of clinicians experiencing negative sequelae we defined as intrusive thoughts, lost sleep and emotional difficulty within the last year. Notably 7% of respondents reported experiencing these effects frequently. This suggests that breaking bad news may be having an effect on many EMS clinicians' mental health

and may even be impacting EMS clinicians' quality of life. This appears to be most prominent amongst clinicians with less than five years' experience where more than 1 in 10 reported these effects frequently, with 70% of this cohort reporting feeling these effects at some point in the last year. While more experienced clinicians had lower rates than their greener counterparts, still 50% reported negative sequelae at some point in the last year. The open-ended responses (Table 3) help to demonstrate the significant impact these experiences have had on some clinicians. Mental health is a hot topic in EMS as clinicians are burning out, leaving the field and tragically taking their lives at unprecedented rates. A 2019 study published in JEMS by Rosenberger found among 1,547 EMS clinicians more than 60% either strongly agreed or agreed to the statement "I feel burned out in my EMS work,". In that same study 36% of EMS clinicians responded reported they agreed to the statement, "I don't want to do EMS work anymore." (Rosenberger et al,. 2019). EMS clinicians' rates of suicidal ideation are reportedly as high at 27% (Lula et al., 2020), with EMS clinicians being 1.39 times more likely to die by suicide then the general public (Vigil et al., 2018). Providing additional education around the subject of breaking bad news may be one avenue in which we can help improve EMS provider mental health by reducing the negative experiences associated with this difficult work.

There are several points that should be noted when considering the findings of this study. First, data collected for this study was completed primarily by posting on our survey link on EMS-based Facebook groups. Given this, it is unclear what our actual response rate for the survey was. Some of these groups have thousands of members but it is unclear how many people saw the survey and then elected to take it or how social media algorithms affected who saw these survey links to begin with. Less than 10% of respondents came from direct emails, which should be noted. Another potential source of bias in our results is that the preamble posted on social media indicated the survey was about "breaking bad news". This may have attracted EMS clinicians who are interested in the topic or who have had recent experiences with breaking bad news, potentially biasing who was most willing to take the survey. Despite these limitations this survey method was able to garner a large response rate representing a wide swathe of EMS clinicians throughout the country in a way no other study has yet to do.

CONCLUSIONS

Our study identified that EMS clinicians are tasked with the delivery of difficult news with great frequency and endorse adverse emotional and mental health impacts associated with this. Despite the frequency of this task, we found that EMS clinicians have insufficient or no training at all and feel that they would benefit from it. Existing education tools for this communication skill are available, but are hospital/office based and do not consider the unique challenges of the prehospital setting. The lack of a standard training a part of licensure requirements, perhaps represents the under recognition of its importance for clinicians. Future effort should be made to highlight the importance of this topic and skill. Research is needed to determine the most effective curriculum to teach EMS clinicians how deliver difficult news.

Our study also casts a light on the adverse mental health effects that are associated with delivery of bad news. With many of our clinicians reporting intrusive thoughts, loss of sleep, and emotional disturbance. Research is needed to identify ways to mitigate these mental health consequences. Specifically, whether formal training on the delivery of

breaking bad news reduce the mental health consequences that are associated with these interactions. Recognizing the emotional trauma that can occur when a clinician has to deliver bad news, such as the death of a loved one is of great importance. Efforts need to be made to provide mental health resources such as access to counseling and professional debriefing to our EMS clinicians.

DATA SET

The data set is maintained in Tufts University Qualtrics. The data that support the findings of this study are available from the corresponding author, ZBT, upon reasonable request and with IRB approval.

REFERENCES

Baile, W. F., Buckman, R., Lenzi, R., Glober, G., Beale, E. A., & Kudelka, A. P. (2000). SPIKES—a six-step protocol for delivering bad news: Application to the patient with cancer. *The Oncologist, 5*(4), 302–311. https://doi.org/10.1634/theoncologist.5-4-302

Benjamin, E. J., Muntner, P., Alonso, A., et al. (2019). Heart disease and stroke statistics—2019 update: A report from the American Heart Association. *Circulation, 139*, e56–e528. https://doi.org/10.1161/CIR.0000000000000659

Brown, R., Dunn, S., Byrnes, K., Morris, R., Heinrich, P., & Shaw, J. (2009). Doctors' stress responses and poor communication performance in simulated bad-news consultations. *Academic Medicine, 84*(11), 1595–1602. https://doi.org/10.1097/ACM.0b013e3181baf537

Campos, A., Ernest, E., Cash, R., et al. (2021). The association of death notification and related training with burnout among emergency medical services professionals. *Prehospital Emergency Care, 25*(4), 539–548. https://doi.org/10.1080/10903127.2020.1785599

Hobgood, C., Hayward, R. A., Newton, K., & Davis, W. (2005). The educational intervention "GRIEV_ING" improves the death notification skills of residents. *Academic Emergency Medicine, 12*(4), 296–301. https://doi.org/10.1197/j.aem.2004.12.008

Hobgood, C., Mathew, D., Woodyard, D., Shofer, F. S., & Brice, J. H. (2013). Death in the field: Teaching paramedics to deliver effective death notifications using the educational intervention "GRIEV_ING." *Prehospital Emergency Care, 17*(4), 501–510. https://doi.org/10.3109/10903127.2013.804135

Lulla, A., Tian, L., Moy, H. P., Mueller, K., & Svancarek, B. (2020). The EMS suicide threat: New research finds alarmingly high rates of ideation and risk. *EMS World, 49*(2), 46–48. https://www.hmpgloballearningnetwork.com/site/emsworld/1223779/ce-article-ems-suicide-threat

Narayanan, V., Bista, B., & Koshy, C. (2010). 'BREAKS' protocol for breaking bad news. *Indian Journal of Palliative Care, 16*(2), 61–65. https://doi.org/10.4103/0973-1075.68401

National Association of EMS Physicians. (2011). Termination of resuscitation in nontraumatic cardiopulmonary arrest. *Prehospital Emergency Care, 15*(4), 542. https://doi.org/10.3109/10903127.2011.598621

National Highway Traffic Safety Administration. (2009). *National Emergency Medical Services Education Standards – Paramedic instructional guidelines*. U.S. Department of Transportation. https://www.ems.gov/assets/Paramedic_Instructional_Guidelines.pdf

National Highway Traffic Safety Administration. (2022). *National Emergency Medical Services Education Standards – Emergency Medical Technicians instructional guidelines.* U.S. Department of Transportation. https://www.ems.gov/assets/EMT_Instructional_Guidelines.pdf

Rosenberger, R., Fowler, R., Robinson, M., & Gardner, A. (2019). Burnout among EMS professionals: Incidence, assessment, and management. *Journal of EMS*. https://www.jems.com/exclusives/burnout-among-ems-professionals-incidence-assessment-and-management/

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health, 23*(4), 334–340. https://doi.org/10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g

Servotte, J. C., Bragard, I., Szyld, D., et al. (2019). Efficacy of a short role-play training on breaking bad news in the emergency department. *Western Journal of Emergency Medicine, 20*(6), 893–902. https://doi.org/10.5811/westjem.2019.8.43441

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory procedures and techniques* (2nd ed.). Sage.

Vigil, N. H., Grant, A. R., Perez, O., et al. (2019). Death by suicide—The EMS profession compared to the general public. *Prehospital Emergency Care, 23*(3), 340–345. https://doi.org/10.1080/10903127.2018.1514090