Implementation of Online Opioid Overdose Prevention, Recognition and Response Trainings for Professional First Responders: Year 1 Survey Results

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ABSTRACT

Background: This article reports on the first web-based implementation of an opioid-overdose prevention, recognition and response training for professional first responders. The training was disseminated nationally over one listserv in November, 2014. The same year, following Act 139, which mandated the provision of an online training for police officers in Pennsylvania, the Pennsylvania Department of Health approved the training. It was subsequently adopted as the primary training tool for police and other first responders in Pennsylvania and has been used as a training tool by first responders nationally. **Methods:** Analyses employed descriptive statistics to report characteristics of a sample of 387 professional first responders who completed a survey about their experience with the online training. Z-ratios were used to compare independent proportions related to overdose, naloxone, and satisfaction with the training between key subgroups, and paired t-tests were used to compare participant responses to a range of items pre- and post-participation in the training. **Results:** Between January - October 2015, 4,804 first responders took the training; 1,697 (35.3%) agreed to be contacted; of these, 387 (22.8%) completed a survey about the training and subsequent overdose response experiences. The majority (86.4%) were from Pennsylvania, with police representing over half of the sample. Analysis of the post-training survey indicates high satisfaction with content, format and mode of delivery, and high satisfaction with items related to confidence and overdose reversal preparedness. **Conclusions:** This study demonstrates the feasibility and acceptability of implementing online training for first responders in overdose prevention, recognition and response.

KEYWORDS: opioids; heroin; naloxone; opioid overdose training; online overdose training; professional first responders

1. INTRODUCTION

The U.S. is experiencing an epidemic of overdose deaths. Deaths involving opioid pain relievers and heroin increased 200% between 2000 and 2014 (Rudd, 2015). Training and equipping professional first responders (police officers; firefighters; Emergency Medical Technicians or EMTs), who are often the first to arrive at an overdose emergency, has been advocated widely (Office of the Attorney General, 2014; Davis et al., 2014; 2015; Rando et al., 2015; Childs, 2016). Research has consistently demonstrated that training increases overdose-related knowledge and appropriate use and administration of naloxone (Wagner et al., 2016; Saucer et al., 2016). Many states, including Pennsylvania, have passed standing orders enabling professional first responders to administer naloxone (Davis et al., 2015; Network for Public Health Law, 2015). However, ambivalence among first responders about being equipped with naloxone is still commonplace (Green et al., 2013; Wagner et al., 2016).

Other barriers also prevent first responders from availing themselves of training or obtaining naloxone. A 2015 survey of Pennsylvania Police Chiefs indicated that their officers were not equipped with naloxone because of a reliance on other emergency responders, cost concerns, concerns about officers' safety, and difficulty accessing training (The Center for Rural Pennsylvania). Yet, there is a critical need for rapid scale up of professional first responder training. In Pennsylvania, for example, all 67 counties experienced overdose fatalities in 2014 (Pennsylvania State Coroner's Association, 2014) and police are the first to arrive at the scene at most overdose calls (Ibid, 2014).

This study assessed the feasibility and acceptability of the first web-based opioid-overdose prevention, recognition and response training for professional first responders (police officers, firefighters, and EMTs). Specifically, we assessed the impact of the training on self-reported confidence, knowledge and skills to intervene successfully in an opioid-related overdose emergency among a sub-sample of professional first responders.

2. MATERIALS AND METHODS

2.1 Online Training

The training was modeled after best-practice models used in Massachusetts and New York and was developed in consultation with overdose experts and first responder trainers. It was adapted for the web using computer-assisted instructional models to enhance learning and retention (Marsch, 2011, 2012). Using destigmatizing language and videos (including animated scenarios and narration provided by voice actors), the training teaches and demonstrates how to respond effectively to an opioid overdose (American Heart Association, 2015); describes barriers to calling 911 and the purpose of Good Samaritan Laws; and links first responders to additional online resources. A certificate of completion is provided to those who pass a post-test administered online at the end of the 45-minute training.

2.2 Training Dissemination

The training can be accessed for free at www.GetNaloxoneNow.org. It was disseminated over the Opioid Safety and Naloxone Network listserv on World Overdose Day in August, 2014. In November, 2014, under Act 139, Pennsylvania police officers were required to be trained with an approved online training in order to carry and administer naloxone in an overdose emergency (PA Department of Drug and Alcohol Programs, 2016). Two Pennsylvania state agencies posted links to the training on their websites, and in standing orders for law enforcement. Between January, 2015 and October, 2015, 4,804 professional first responders were trained online; the majority were from Pennsylvania.

2.3 Data Collection

2.3.1 Registration and Survey Data: Registration data included zip code, profession, and history of witnessing or intervening in an overdose. All participants who registered between January – October, 2015, completed the survey, and agreed to be contacted (1,697 or 35.3% of registered

first responders) were invited to take a survey in October, 2015. Three follow-up emails were sent to those who did not respond to previous requests. Participation was voluntary with no incentive provided. The NDRI, Inc. IRB deemed the study to be exempt from human subject regulations.

2.3.2 Survey Development: A total of 47 questions (5 point Likert, multiple choice) were developed to assess perceived knowledge and skills to intervene in an overdose emergency, confidence to intervene (pre- and post-training), experience using naloxone, and satisfaction with the training. Trainees were also asked whether they believed first responders should carry naloxone and were able to obtain it, about barriers to obtaining naloxone, and how many times they had intervened in overdose emergencies since training completion. The survey did not assess knowledge gained. However, passing a series of quizzes and a post-test which assessed knowledge gained was a requisite to successful completion of the online training. Items for the quizzes and post-test were adapted from the Opioid Overdose Knowledge (OOKS) and Opioid Overdose Attitude (OOAS) scales (Williams et al., 2013) to match the language in the training.

2.4 Data Analysis

All quantitative data were analyzed in SPSS (version 23.0). Descriptive statistics were used to report characteristics of each sample, compare the prevalence of experiences with overdose and/or naloxone between subgroups, and describe the participants' satisfaction with the training. Z-ratios were used to compare independent proportions and paired *t*-tests were used to compare participant responses to a range of pre- and post-participation items.

3. RESULTS

3.1 Registration Data

During the study period, 4,804 first responders accessed the trainings (Table 1) and 1,697 agreed to be contacted. Comparisons between registrants who elected to be contacted but did not take the survey ($n = 1,310$) and those who did take the survey ($n = 387$) are provided in Table 1.

3.2 Survey Data Characteristics

A total of 387 first responders (22.8% of those contacted) completed the surveys. The majority (86.0%) were from PA. Specific occupations of respondents and their experience with overdose training and with naloxone are also reported in Table 1.

3.3 Training Satisfaction

Table 2 shows responses to questions assessing satisfaction with the training. The majority of participants (72.4%) agreed that a booster training at 6-12 months would help first responders retain the requisite knowledge and skills to intervene successfully in an overdose emergency. Similarly, 70.0% of first responders reported that they would welcome additional training on how to encourage the revived overdose victim to go to the ER and enroll in drug treatment (64.1% of participants reported that their departments have these protocols.)

3.4 Training Impact

Before participating in the training, the majority (70.6%) of the sample “wanted to have the knowledge and skills to intervene effectively in an overdose emergency,” indicating a high level of motivation for engaging in this training. After completing the training, the majority (88.1%) felt that they had such knowledge and skills. Pre-training, only 38.8% of the participants reported feeling confident they could intervene successfully. However, after participating in the training, 93.8% felt confident they could successfully intervene ($z = 6.04$, $p < .001$).

Since taking the training, 22.7% of the sample reported arriving at the scene of an overdose and providing assistance at least once. Only 25% reported they would feel confident or very confident responding to an overdose without naloxone, but an overwhelming majority (91.2%) reported feeling confident they could respond (reverse an overdose) with naloxone.

Pre-training, 74.9% of the sample agreed that police officers should be trained and equipped to serve as first responders in overdose emergencies as part of their professional role; this increased to 80.1% after the training.

Since taking the training, 53.5% of the first responders reported being supplied with naloxone (of those who specified type, 48.6% received intranasal naloxone; 11.4% received the auto-injector; and 6.5% received syringes). Those who were not supplied with naloxone post-training, cited the following reasons: cost (9.3%), lack of familiarity with how to obtain it (5.7%), bureaucratic (5.4%), and political (3.9%) issues, and naloxone scarcity (1.8%).

3.5 Differences in Key Outcomes Between First Responder Groups

The sample of police officers (54.7%) was compared to the sample of firefighters, EMTs, and trainers (23.0%). No significant differences in overall training satisfaction were observed ($p = .111$).

3.5.1 Emergency Intervention Post-Training. First responders reported assisting in 86 emergencies without naloxone since they took the training, and 69 (80.2%) of the individuals attended to survived. First responders also reported assisting in 88 emergencies with naloxone and were successful in 69 (78.4%) reversals.

4. DISCUSSION

This study presents findings from the first online overdose training for professional first responders. Findings demonstrate that the overwhelming majority of trainees were satisfied or very satisfied with the training's content, format and mode of delivery. While naloxone was not

always available to participants after being trained, the survey demonstrates that participants were prepared and motivated to administer it.

Reasons given for the unavailability of naloxone included: bureaucratic delay, cost considerations or concerns about liability. We did not ask if stigma was also a factor. Stigma was overtly expressed by 3 police/EMTs in the open-ended question, but the majority of participants welcomed their enhanced lifesaving roles, and expressed gratitude for the training.

Nevertheless, in a survey conducted in mid-2015, 82% of police departments were not carrying naloxone (Center for Rural Pennsylvania, 2015). Thus, the number of officers who could have taken the approved training (required of PA police if they intended to carry naloxone) far exceeded the numbers who did take the training.

4.1 Limitations

Generalizability may be limited due to response bias. While we adhered as closely as possible to standard survey methodology, limitations in representativeness may have influenced the results. We did not contact those who had indicated a wish not to be contacted. Differential time lapses between when individuals took the trainings and when they filled out the surveys may also have had an impact. The majority (68.4%) of participants completed the survey 6-11 months post-training while 31.6% completed it 1-5 months post-training. Finally, outcomes were based on self-reported data. We did not measure actual behavior change or overdose outcomes as a result of training completion.

4.2. Conclusions

The GetNaloxoneNow.org training is the first online overdose training for professional first responders and this is the first study to evaluate its use, as well as assess satisfaction and impact. This study suggests that it is acceptable and feasible to implement online trainings in overdose prevention, recognition and response for professional first responders. While the

training has been available nationally, the approval of the training by the PA DOH brought the majority of trainees to the site. We conclude that the trainings are well-suited for rapid expansion of overdose education in similar contexts—where approval at the city or state level is obtained. Dissemination of the training was accomplished with little advertising; more advertising would likely produce a bigger impact. Research on the ways in which stigma may prevent professional first responders from availing themselves of overdose training is warranted, as are studies of actual behavior change and overdose outcomes related to the training.

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Table 1: First Responder Participant Registration Data

	First Responders (Participated in Survey) (N = 387)	First Responders (Did Not Participate in Survey) (N = 1,310)
Witnessed Overdose	74.8%	70.2%
<i>Witnessed an overdose that resulted in a fatality with no Naloxone available at the scene.</i>	39.1%	40.0%
<i>Witnessed an overdose that resulted in a fatality where Naloxone was provided.</i>	8.4%	6.2%
<i>Witnessed an overdose that resulted in a successful rescue with no Naloxone available at the scene.</i>	12.0%	11.8%
<i>Witnessed an overdose that resulted in a successful rescue where Naloxone was available.</i>	15.3%	12.2%
<i>Never witnessed overdose.</i>	26.6%	29.8%
Occupation		
<i>Police</i>	54.7%	59.1%
<i>EMT/EMT Trainer</i>	15.9%	13.9%
<i>Firefighters</i>	7.1%	5.8%
<i>Basic Life Support (BLS)</i>	8.0%	7.7%
<i>Medical Director</i>	1.3%	0%
<i>Paramedics</i>	4.7%	4.4%
<i>Other Non-BLS</i>	8.3%	9.1%
Carrying Naloxone	58.9%	57.2%
<i>Do not carry Naloxone, but wish they did.</i>	21.1%	22.2%
<i>Do not carry Naloxone, and do not wish to.</i>	20.0%	20.6%

Table 2: Summary of Key Satisfaction Data among First Responder Participants

Satisfaction with...	First Responders (N = 387) % of respondents reporting “complete” or “nearly complete” satisfaction
...overall training	83.0%
...training format	84.0%
...animated scenarios	74.6%
...educational content	80.4%
...level of difficulty of the training	78.7%
...interactive quizzes	79.3%
...training length	79.3%