

Implementation and assessment of a naloxone-training program for first-year student pharmacists

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Background

- Over the last decade, the substantial rise in deaths due to opioid and heroin overdoses has reached epidemic levels according to the Department of Health and Human Services.¹
- From July 2016 to June 2017, 44,693 individuals died from opioid overdoses.²
 - 65% were associated with prescription opioids
 - 35% were associated with heroin
- All 50 states and the District of Columbia have passed legislation aimed at increasing access to naloxone, an opioid reversal agent, in the community to combat this epidemic.³⁻⁵
- In Maryland, naloxone has been available without a prescription for individuals trained and certified since 2015, and, in 2017, legislation was passed authorizing pharmacists to dispense naloxone to anyone, regardless of certification.⁶
- Pharmacists now serve as the primary educators on management of opioid overdose and naloxone administration.

Objectives

To develop a naloxone training activity and assess its impact on student-pharmacist knowledge and confidence to counsel about management of opioid overdose and naloxone administration.

Methods

Naloxone-Training Program

- First-year student pharmacists participated in a 50-minute naloxone training activity as part of the Abilities Laboratory course in the spring semester.
- Prior to the workshop, students were required to read an informational guide about naloxone and answer four questions based on the reading.⁷
- During the workshop, a facilitator
 - Confirmed completion of the preparatory questions
 - Reviewed the preparatory materials with the entire class and presented a 10-minute lecture on responding to an opioid overdose
 - Discussed available formulations of naloxone and demonstrated intranasal and intramuscular administration
 - Supervised students working in pairs to practice naloxone counseling and administration

Assessment

- A naloxone counseling case was incorporated into the first-year Objective Structured Clinical Examination (OSCE), which was evaluated by a standardized patient using a knowledge/skills checklist and a global impression scale to assess the effectiveness of their communication.
- Students completed a post-encounter self-assessment as part of the OSCE.
- Students also completed a voluntary, web-based survey at the end of the semester about their confidence in recognizing signs and symptoms of opioid overdose and counseling on intranasal and intramuscular naloxone administration.

Results

Overall Performance on Naloxone OSCE	
Component score	Average Score ± Standard Deviation (Percent)
Knowledge and Skills Items (15 points)	12.1 ± 2.99 points (80.7%)
GIS Overall Assessment (15 points)	12.5 ± 1.82 points (83.3%)
Total Score (30 points)	24.6 ± 4.3 points (82%)

Performance on Individual OSCE Knowledge/Skills Checklist Items	
Knowledge and Skills Items	Students receiving credit (n=158 students)
Asks patient questions to elicit previous knowledge about medication before counseling on it.	80 (50.6%)
Educates patient on at least two signs of opioid overdose (e.g. decreased breathing, pale skin, blue or grey extremities, constricted pupils, and unresponsiveness).	125 (79.1%)
Educates patient to attempt to stimulate patient before calling 911.	145 (91.8%)
Counsels that proper dose is ½ of syringe (or 1ml) is to be administered in each nostril.	140 (88.6%)
Mentions that second dose should be given if 2-5 minutes elapse without any patient response.	149 (94.3%)

OSCE Global Impression Scale (GIS) – Overall Assessment Component ⁸					
Overall assessment	1	2	3	4	5
	I would never return to this pharmacist and would not recommend them.	I am indifferent about utilizing this pharmacist in the future.	I would definitely return to this pharmacist and would highly recommend them.		

Discussion and Conclusions

First-year student pharmacists performed well on the naloxone OSCE, demonstrating an understanding of the important counseling points and an ability to effectively communicate this information to a simulated layperson responder. They also retained this knowledge and continued to feel confident in their skills after course completion. Study limitations include a lack of data on if students' abilities in a simulated environment translate into the practice setting and a limited evaluation of students' knowledge because the assessment occurred after only a single workshop.

Little literature exists about training and assessing student pharmacists on preventing opioid overdose-related deaths. Published literature exists describing the assessment of medical students' knowledge about naloxone following opioid overdose prevention training. However, this literature does not assess students' abilities to apply this knowledge in a simulated real-life environment (i.e. OSCE). As more states adopt regulations aimed at increasing access to naloxone, the pharmacist will play an important role in the education and counseling of the public. As a result, Doctor of Pharmacy programs should consider inclusion of naloxone training and assessment in the curricula to prepare student pharmacists for practice.

Post-Encounter Self-Assessment				
	Completely disagree	Generally disagree	Generally agree	Completely agree
I felt this TOSCE/OSCE case was realistic.	2 (1.3%)	3 (1.9%)	47 (29.7%)	106 (67.1%)
The TOSCE/OSCE improved my confidence in performing this activity.	4 (2.5%)	6 (3.8%)	59 (37.3%)	89 (56.3%)

End-of-course Survey			
	Not at all confident	Somewhat confident	Very confident
How confident are you in your ability to administer intranasal naloxone?	2 (3.4%)	20 (33.9%)	37 (62.7%)
How confident are you in your ability to administer intramuscular (IM) naloxone?	4 (6.8%)	24 (40.7%)	31 (52.5%)
How confident are you in your ability to recognize the symptoms of an opioid overdose?	3 (5.1%)	22 (37.3%)	34 (57.6%)
How confident are you in your ability to counsel patients regarding the use of intranasal naloxone?	4 (6.8%)	16 (27.1%)	39 (66.1%)
How confident are you in your ability to counsel patients regarding the use of intramuscular (IM) naloxone?	7 (11.9%)	19 (32.2%)	33 (55.9%)

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