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
• In Maryland, naloxone has been available without a prescription for students working in pairs to practice naloxone counseling and administration.
• 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

<table>
<thead>
<tr>
<th>Component score</th>
<th>Average Score ± Standard Deviation (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and Skills Items (15 points)</td>
<td>12.1 ± 2.99 points (80.7%)</td>
</tr>
<tr>
<td>OSCE Overall Assessment (15 points)</td>
<td>12.5 ± 1.82 points (83.3%)</td>
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<tr>
<td>Total Score (30 points)</td>
<td>24.6 ± 4.3 points (82%)</td>
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</tbody>
</table>

Performance on Individual OSCE Knowledge/Skills Checklist Items

<table>
<thead>
<tr>
<th>Knowledge and Skills Items</th>
<th>Students receiving credit (n=158 students)</th>
<th>Average Score ± Standard Deviation (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asks patients questions to elicit previous knowledge about addiction before counseling</td>
<td>125 (79.1%)</td>
<td></td>
</tr>
<tr>
<td>Educates patient on at least two signs of opioid overdose (e.g., decreased breathing, pale skin, blue or grey extremities, constricted pupils, and unresponsiveness)</td>
<td>145 (91.8%)</td>
<td></td>
</tr>
<tr>
<td>Mentions that second dose should be given if 2-5 minutes elapse without any patient response.</td>
<td>149 (94.3%)</td>
<td></td>
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OSCE Global Impression Scale (GIS) – Overall Assessment Component

<table>
<thead>
<tr>
<th>Overall assessment</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would never return to this pharmacist and would not recommend them.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I am indifferent about utilizing this pharmacist in the future.</td>
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<tr>
<td>I would definitely return to this pharmacist and would highly recommend them.</td>
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</table>

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.

References

4. HB 813. 45th Leg, 1st Sess (NM 2001).