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EXPERIENCE

# The implementation of a naloxone rescue program in university students

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ABSTRACT

*Objective:* Responding to the nationwide opioid overdose epidemic, Washington State University initiated a naloxone safety net project intending to increase awareness of opioid overdose, increase the availability of naloxone, and examine university students' perceptions regarding the usefulness of a novel, large-group audience-training model.
*Setting:* A Washington State University campus.
*Practice description:* In September 2014, university students were recruited to attended a large-group audience training event which included opioid overdose prevention, recognition, and first response. All trained participants received an intranasal naloxone reversal kit.
*Practice innovation:* Student pharmacists, who previously received naloxone rescue training and overdose education from the pharmacist lead researcher, acted as trainers. The training consisted of a large-group audience delivery with small-group practice sessions facilitated by the student pharmacists.
*Evaluation:* Participants who attended the recruitment event completed a pre-training survey to assess knowledge and perceptions about opioid use disorder and overdose. The following week, participants attended the training event. Participants were asked to complete a post-training survey to evaluate the usefulness of the program.
*Results:* Forty-three percent of the participants (65/150) who attended the recruitment event reported knowing someone who used prescription opioids to get "high." Seventy-four participants attended the training, and 92% of them (68/74) completed the post-training survey. The majority of respondents agreed that the training program met their expectations and the skills they learned could be used to intervene in an overdose situation.
*Conclusions:* Before training, survey responses from recruited participates indicated the need to discuss opioid use disorder among university students is important. Use of a training model involving large-group audiences followed by small-group practice sessions offers an acceptable educational solution regarding opioid overdose and prevention. Our experience suggests using this training model to educate university students to recognize and provide first response is a feasible and acceptable approach.
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## Objective

Death from opioid overdose has risen dramatically in the United States in the last 2 decades. More than 16,000 people die annually because of prescription opioid overdose, inappropriate use of prescribed opioids, or diversion of prescription opioids. An additional 8000 people die annually from illicit use of heroin, representing a 5-fold increase since 2001.[1]

The widespread availability of opioids, both licit and illicit, continues to expand in the United States and abroad. A threat assessment summary published by the U.S. Drug Enforcement Administration (DEA) suggested that prescription drug abuse continues to be the nation's fastest growing problem and pain relievers are the most common type of controlled prescription

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**Key Points**

**Background:**

- Opioid use disorder and overdose continues to be one of the nation's fastest growing public health concerns.
- Pharmacists can play an important role in addressing opioid use disorder and the overdose epidemic through education and community outreach by increasing awareness about the problem and naloxone rescue kit availability.

**Findings:**

- Many university-age students report personal knowledge of others who have used opioids recreationally.
- By using student pharmacists as trainers, a training model using large-group presentation followed by small-group practice sessions is a viable option to facilitate education of university students to recognize and provide first response to an overdose situation.

drug (CPD) taken illicitly and are the CPDs most commonly involved in overdose incidents.[2] The number of prescriptions of hydrocodone and oxycodone, 2 of the most commonly abused opioids, increased by 14% and 27%, respectively, from 2007 to 2011. The trends of increasing availability of opioids, both licit and illicit, and the associated increase in morbidity and mortality likely will continue. The solution to this public health problem is complex and multifaceted, and it will undoubtedly take years to evolve. One approach to decreasing access to opioid prescription medications has been the adoption of prescribing limits for quantities on hand for acute pain.[3,4] Another decisive measure that can be developed and implemented in a relatively short time frame is an improvement in opioid overdose antidote delivery and availability.

Naloxone is a potent opioid receptor antagonist approved for intravenous (IV), intranasal (IN), and intramuscular (IM) administration. It is available as a sterile solution for injection and can be modified with an atomizer for IN administration. Other available dose forms include Evzio (kaleo, Inc., Richmond, VA), an IM or subcutaneous autoinjector and NARCAN Nasal Spray (Adapt Pharma, Radnor, PA), a ready-to-use IN device.[5,6] Although effective, parenteral (IV or IM not by an autoinjector) administration of naloxone is plagued with problems, the most salient of which is the time lag between recognition of overdose and treatment by a health care provider. Additional problems include difficulty cannulating the patient's vein and potential spread of infectious diseases (e.g., hepatitis B, hepatitis C, human immunodeficiency virus) because of accidental needlestick and, in the case of illicit drug use, reticence of bystanders to call 9-1-1.[7,8] Antidote administration problems could be addressed with an easy-to-use, widely available formulation administered intranasally in the field by non–medically trained personnel. Intranasal naloxone represents an attractive alternative that both bypasses presystemic metabolism and distributes rapidly to the sites of action: opioid receptors in the brain.

Many deaths related to opioid overdose have been and could be prevented by reversal with the opioid antagonist naloxone. Opioid overdose reversal kits intended for IN administration are composed of 2 doses of a 1-mg/mL vial of naloxone for injection and a nasal atomizer that can be assembled easily for use by a trained rescuer, with or without a health care background. Intranasal administration is a popular method for reversal because it poses no risk of accidental needlestick injury or bloodborne pathogen exposure.[9] Naloxone is considered safe because of its pharmacology and few adverse effects. When naloxone is administered, an overt physiologic effect will not occur if an opioid is not present in the bloodstream.[10] If an individual is not breathing because of an opioid overdose, naloxone works quickly in the body and can reverse respiratory depression within approximately 5 minutes. Recently reported survey results administered by the Harm Reduction Coalition indicate 136 organizations representing 644 sites provided naloxone kits to 152,283 laypersons, leading to 26,463 overdose reversals. The Harm Reduction Coalition has concluded that opioid overdose mortality can be reduced through implementation of opioid overdose training and the provision of naloxone kits to laypersons who are positioned to act if an overdose occurs.[11]

Overdoses can occur in all age groups. Martins et al.[12] recently reported, using National Survey on Drug Use and Health data from 2008 to 2010, that 11.3% of university students had used prescription opioids for a nonmedical use in the past year.[12] Media reports indicate that university-aged students are being affected by opioid overdose.[13,14] Knowing that university students are a population at risk for opioid overdose, Washington State University (WSU) College of Pharmacy obtained funding from the university president to initiate a naloxone safety net project on campus.

## Setting

The WSU campus located in Pullman, Washington, was selected for this project. This campus is the main university campus offering the widest range of undergraduate and graduate studies with a large, diverse student population. Funding available from the university allowed for the recruitment of 150 participants, of the approximate 20,000 students enrolled in the fall of 2014.[15] The WSU investigational review board approved this training model.

## Practice description

To begin the project and create awareness, advertisements for an overdose education and prevention training were placed in the campus newspaper during the start of fall semester. One week later, a drug overdose simulation was staged while classes were in session in an area known for high foot traffic to facilitate interest and recruit participants for the naloxone training session. A crime scene, which captured the attention of nearby WSU students, was created with a mannequin inside a body bag, with crime tape protecting the scene and a Campus Police squad car with caution lights on responding to the overdose (Figure 1). WSU student