

## Examining Patient Acceptability of Naloxone Pre and Post Participating in the Evaluation of Opioid Safety Posters

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### Abstract

**Background:** In the United States (US) annual deaths from drug overdose have risen to epidemic proportions and are currently the leading cause of death in Americans under age 50.<sup>(17)</sup> This was largely driven by opioid use, which was implicated in 63% of confirmed overdose deaths in 2015.<sup>(16)</sup> To combat opioid overdose (OOD), naloxone, a competitive mu receptor antagonist, can be safely administered by trained community bystanders to reverse an OOD. Unfortunately, patient and provider barriers can interfere with patients' accessing and accepting a prescription for this lifesaving medication.<sup>(11)(19)(20)</sup> AB1535 is a law allowing California's pharmacists to furnish naloxone to any persons at risk of witnessing or experiencing an OOD. Community pharmacies represent a setting in which large numbers of patients could gain access to naloxone. Medically engaged patients receiving opioid agonist treatment (OAT) for substance use disorder represent a population that regularly interfaces with pharmacy staff and are at elevated risk for OOD. We developed a quality improvement project (QI) aimed at increasing acceptance of naloxone in the outpatient pharmacy setting. The project took place in an outpatient behavioral health pharmacy that services the Medicaid and uninsured population.

### Methods

Pharmacy patients receiving OAT were invited to participate in survey(s) assessing educational opioid safety posters. The posters, created by pharmacy staff, recommended naloxone and referenced statistics related to OOD obtained from the Centers for Disease Control and Population (CDC) website. Naloxone acceptability was defined as number of naloxone prescriptions dispensed per OAT patient. Acceptability data was collected for four months prior to the intervention period for comparison.

### Results

Naloxone acceptability in the pre-intervention period was 11.6%; acceptability rose to 25.4% in the post-intervention period. This represents a statistically significant increase in acceptability of naloxone.

### Conclusion

This project realized a significant increase in acceptance of naloxone by patients exposed to an educational poster intervention. This observation may suggest that education with patient participation can increase the acceptance of medical recommendations. It may further suggest that pharmacists can become more effective in their approach to recommending naloxone through participation in the development of opioid safety materials.

### Background and Significance

Drug overdose is currently the leading cause of unintentional death in the US. To date, opioids have been involved in more overdose deaths than any other drug and were implicated in 165,000 fatalities from 1999 to 2014.<sup>(1)</sup> The year 2014 marked the largest number of opioid deaths ever recorded. In the presence of an epidemic, clinical practice guidelines have been updated and now recommend naloxone as part of routine opioid safety.<sup>(1)(2)(3)(4)</sup> Pharmacists must be prepared to recommend this lifesaving medication.

Naloxone is a potent competitive mu receptor antagonist that acts rapidly to reverse centrally mediated respiratory depression in the presence of an OOD.<sup>(5)</sup> It is currently available for take-home use by laypeople at needle exchanges and pharmacies. Nonmedical bystanders have successfully used naloxone since its introduction in community-based programs in 1996. In 2010, the Harm Reduction Coalition was the first to collect data on its use by trained drug users and received reports of 10,171 successful reversals.<sup>(6)</sup> Studies have shown that naloxone can be safely and effectively used by multiple populations, including intravenous drug users, people using prescribed opioids, and people using opioids for OAT.<sup>(7)(8)</sup> To date, the majority of community naloxone reversals have been reported for heroin overdoses.<sup>(1)(9)</sup> More targeted approaches are needed to ease access to naloxone by medically engaged OAT patients no longer visiting needle exchanges as well as the non-intravenous drug use population. One step to improve access to all patients was expanding the right of pharmacists to prescribe under protocol or furnish it directly to patients without a prescription.<sup>(10)</sup>

Despite its critical role in community overdose reversals, provider and patient barriers exist. While naloxone acceptability among health care practitioners is on the rise, some providers may still feel uncomfortable offering it.<sup>(11)(19)(20)</sup> A 2015 Kaiser Permanente focus group revealed that prescribers felt uncomfortable offering naloxone for reasons including fear of offending the patient and concerns about increasing risky behavior.<sup>(19)</sup> In addition to this potential barrier, a patient's perceived risk for unintentional OOD may be low. A 2016 Veterans Affairs (VA) study showed that patients receiving OAT for substance use disorder tended to significantly underestimate their risk of overdose.<sup>(12)</sup> Beyond having a substance use disorder, additional risk factors that may pertain to this population include a history of prior overdose, intravenous drug use, alcohol use, sedative hypnotic/benzodiazepine use, cocaine use, history of incarceration, or a general psychiatric diagnosis.<sup>(18)</sup>

There is minimal data about methods to increase acceptability of naloxone. Experts have advised using nonjudgmental language (such as "opioid safety" as opposed to more pejorative terms such as "overdose") to facilitate conversations.<sup>(13)</sup> A VA study reviewing patient perception of naloxone kits evaluated patient sug-

gestions to improve acceptability. Some suggestions included a more active learning approach, enhanced training materials, and more relatable advertising. Educational posters are one avenue that has been used to spread public health awareness and as a method to help patients identify with risk.<sup>(14)</sup> Community pharmacists regularly interface with patients receiving OAT who are at elevated risk for experiencing or witnessing an OOD. Educational posters could be used as a tool to enhance acceptance of naloxone in this setting.

## Objectives

The purpose of this project was to increase the acceptance of prescription naloxone kits through the use of educational posters. Educational posters were designed to depict a wide variety of settings in which OOD can occur in an effort to decrease stigma and appeal to a broad audience. An interactive task was designed to improve the quality of the posters and enhance the engagement of patients exposed to posters in the pharmacy waiting area.

## Methods

This project took place in an outpatient county behavioral health specialty pharmacy. The pharmacy provides OAT to approximately 90 opioid-dependent clients per month. The patient census continually varies due to dropout, transfer to community pharmacies, and new induction program entries. Some of the specialty services offered include induction consultations for buprenorphine, jail discharge maintenance, observed dosing, urine toxicology screenings, clean syringe services, and routine evaluations of the prescription drug monitoring program. Due to the elevated risk of OOD in this population, the pharmacy staff has routinely recommended naloxone. Naloxone acceptability was compared across two time periods—a four-month pre-intervention period and a four-month intervention period. Naloxone acceptability was defined as the number of naloxone prescriptions dispensed at the pharmacy per OAT patient seen. Naloxone furnishing included a take-home naloxone kit with a pharmacist consultation covering opioid safety, and how to recognize and respond to an overdose. Statistical analysis was performed using a two-tailed student z-test, and significance was set at a p-value of 0.05.

A total of 10 educational opioid safety posters were designed by pharmacy staff and displayed in the pharmacy waiting area. Poster designs portrayed a variety of populations and settings where opioid use and unintentional overdose occur such as pediatric poisonings, illicit drug use, young adult parties, health care practitioner diversion, and older adults confused about medication dosing. All educational posters recommended naloxone and included a statistic related to OOD obtained from the Centers for Disease Control website. In addition to making the posters available for public viewing, all OAT clients were invited to participate in a poster assessment activity, which included voting for their favorite designs and filling out an anonymous survey pertaining to poster quality and suggestions for improvement. Patients were told the survey results would be used to further develop posters to potentially be used for city and county clinic use. The poster assessment activity consisted of two phases. The first phase lasted for three months during which patients voted for their three favorite designs and provided feedback on quality. The four posters with the most votes were then redesigned based on patient feedback. Each of the four posters were redeveloped into three versions for a total of 12 posters. The second phase lasted for one month during which the 12 redesigned posters were displayed in the pharmacy and patients voted and completed the same survey.

All OAT patients were invited to participate in phase 2 regardless of their participation in phase 1. At the conclusion of the study, the top four posters were selected and redesigned one last time based on participant feedback.

Figure 1. Images of phases 1 and 2 and final opioid safety posters made available for public use.



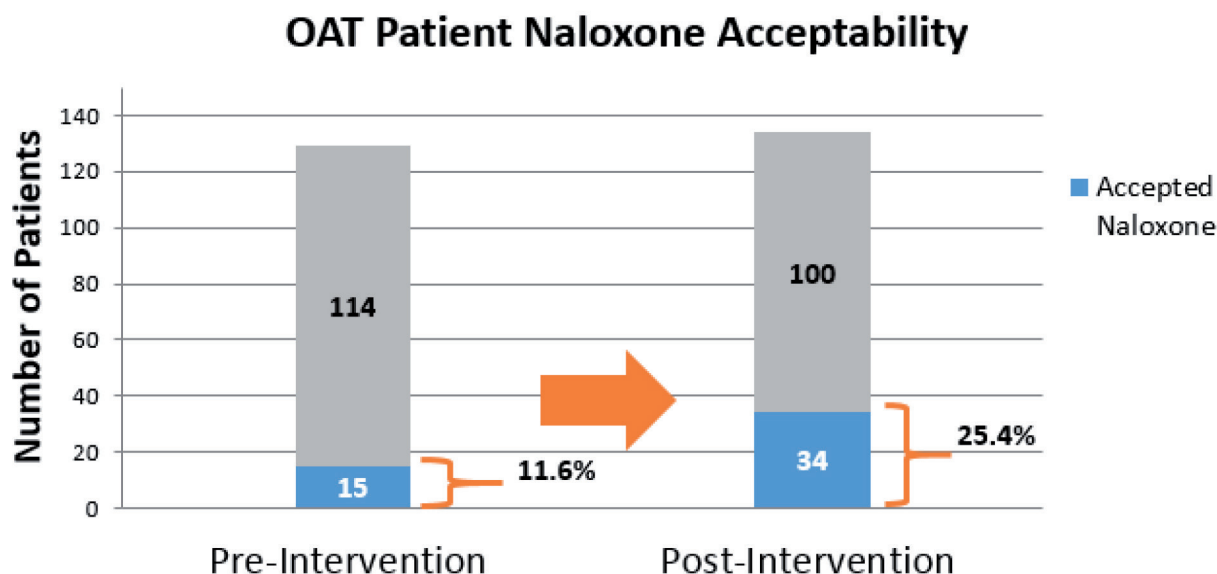
## Results

During the four-month intervention period, all OAT patients were exposed to the educational posters displayed in the pharmacy and invited to participate in the poster assessment activity. A total of 129 and 134 OAT patients were seen in the pre- and post-assessment period respectively. A total of 52 patients completed the poster assessment activity during phase 1, and 30 during phase 2. The total number of naloxone kits furnished increased from 15 in the pre-intervention period to 34 during the intervention period. A two-tailed z-score calculation revealed a statistically significant difference in the proportion of naloxone distributed per OAT patient seen. 11.6% of OAT patients received naloxone during the pre-intervention period versus 25.4% during the intervention period, yielding a z-score of -2.86 (p-value: 0.004). Survey results revealed that many patients found the posters to be important and informative, and appreciated the depiction of various settings of the “non-stereotypical addict.” Posters from the final phase are displayed

in the pharmacy waiting area and are being used in several city and county clinics. The posters are also available online for public use.

Figure 2. Naloxone prescriptions accepted per unique OAT patient.

the examination of why patients decline or accept naloxone, and



## Conclusion/Discussion

In the presence of an opioid epidemic, which is claiming 91 American lives per day, enhancing educational tools that facilitate naloxone access is of the utmost importance<sup>(18)</sup>. Community pharmacists can improve patient safety by increasing access to naloxone by medically engaged patients receiving OAT. This project observed a statistically significant increase in the acceptance of naloxone through an educational poster intervention. This may suggest that patient assessment of opioid safety materials can complement pharmacist recommendations for naloxone. It may also suggest that pharmacists can become more effective in their approach to recommending naloxone after participating in the development of opioid safety materials. A 2013 NCPA study showed that the national average community pharmacy wait time is approximately 45 minutes<sup>(19)</sup>; this is time that could be used for patients to participate in the review of educational materials of this type.

This project had multiple limitations. It was completed in a single population, limiting its generalizability to other settings. There was no data collected to explain why patients accepted or declined take-home naloxone, limiting conclusions that can be made. Due to the short duration of the project it is also unclear if the acceptability and poster assessment activity is sustainable. No data was collected examining if the pharmacists' attitudes/approaches for recommending naloxone changed during exposure to the intervention. There was no control group, and patients may have been duplicated, which would skew the results. It is unknown if exposure to educational posters alone could have effectively increased naloxone acceptability. Owing to the simplicity of this intervention, it is conceivable that it could be repeated in a community pharmacy setting and calls attention to the feasibility of research in this area. Despite limitations, the results of this intervention were statistically significant. Future areas of research in our setting will focus on

surveys will aim at addressing if and how interactive educational materials can increase the acceptance of naloxone.

*"The views expressed herein do not necessarily reflect the official policies of the City and County of San Francisco, nor does mention of the San Francisco Department of Public Health imply its endorsement."*

## About the Authors

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Dr. Michelle Geier graduated from University of Washington School of Pharmacy and completed a pharmacy practice PGY1 at the VA Puget Sound and a psychiatric pharmacy PGY2 at University of California San Francisco (UCSF)/San Francisco Department of Public Health (SFDPH). She is board-certified in psychiatric pharmacotherapy. She serves as the residency program director for the Zuckerberg San Francisco General Hospital PGY2 in psychiatric pharmacy and is assistant clinical professor at the UCSF School of Pharmacy.

## References

- 1) Drug Overdose: Opioid Overdose. Centers for Disease Control and Prevention website. <https://www.cdc.gov/drugoverdose/> Updated August 25, 2016. Accessed September 1, 2016.
- 2) Opioid Overdose Prevention Toolkit. Safety Advice for Patients and Family: Substance Abuse and Mental Health Services Administration (SAMHSA) website. [http://www.integration.samhsa.gov/Toolkit\\_Patient\\_-\\_Family\\_Safety.pdf](http://www.integration.samhsa.gov/Toolkit_Patient_-_Family_Safety.pdf). Accessed August 20, 2016.
- 3) National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use: American Society of Addiction Medicine (ASAM) website. <http://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf>. Accessed August 1, 2016.
- 4) Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. *MMWR Recomm Rep.* 2016;65(No. RR-1):1-49. DOI: <http://dx.doi.org/10.15585/mmwr.rr6501e1>
- 5) Naloxone HCL Injection [package insert]. Lake Forest, IL: Hospira Inc; 2005.
- 6) Wheeler E. Community-based opioid overdose prevention programs providing naloxone—United States 2010. *Morbidity and Mortality Weekly Report* ; 2012; 61(6). Atlanta, GA: Center for Disease Control and Prevention.
- 7) Mueller SR, Walley AY, Calcaterra SL, Glanz JM, Binswanger IA. A Review of Opioid Overdose Prevention and Naloxone Prescribing: Implications for Translating Community Programming Into Clinical Practice. *Substance Abuse* . 2015, DOI: 10.1080/08897077.2015.1010032.
- 8) Coffin PO et al. Nonrandomized intervention study of naloxone coprescription for primary care patients receiving long-term opioid therapy for pain. *Ann Intern Med.* 2016; Jun 28; [e-pub]. (<http://dx.doi.org/10.7326/M15-2771>)
- 9) Clark AK, Wilder CM, Winstanley EL. Prevention and Naloxone Distribution Programs. *J Addict Med.* 2014;8(3):153-163.
- 10) Davis CS, Carr D. Legal changes to increase access to naloxone for opioid reversal in the United States. *Drug Alcohol Depend.* 2015;157:112-120.
- 11) Seal KH, Downing M, Kral AH, et al. Attitudes About Prescribing Take-Home Naloxone to Injection Drug Users for the Management of Heroin Overdose: A Survey of Street-Recruited Injectors in the San Francisco Bay Area. *J Urban Health.* 2003;80(2):291-301.
- 12) Wilder CM, Miller SC, Tiffany E, Winhusen T, Winstanley EL, Stein MD. Risk factors for opioid overdose and awareness of overdose risk among veterans prescribed chronic opioids for addiction or pain. *J Addict Dis.* 2016;35(1):42-51.
- 13) Opioid Safety with Naloxone: A Life-saving Tool for California Physicians: American Society of Addiction Medicine website. [http://www.csam-asam.org/sites/default/files/pdf/naloxone\\_webinar\\_slides\\_2014\\_final\\_ew\\_pc.pdf](http://www.csam-asam.org/sites/default/files/pdf/naloxone_webinar_slides_2014_final_ew_pc.pdf). Accessed August 5, 2016.
- 14) Oliva EM, Nevedal A, Lewis ET, McCaa MD, Cochran MF, Konicki PE, Davis CE, Wilder C. Patient Perspectives on an Opioid Overdose Education and Naloxone Distribution Program in the U.S. Department of Veterans Affairs. *Subst Abus.* 2016;37(1):118-26.
- 15) Pharmacy Satisfaction Pulse: National Community Pharmacists Association website. [http://www.ncpanet.org/pdf/pulse\\_2013.pdf](http://www.ncpanet.org/pdf/pulse_2013.pdf). Accessed August 20, 2016.
- 16) Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths—United States, 2010–2015. *MMWR Morb Mortal Wkly Rep.* 2016;65:1445-1452. DOI: <http://dx.doi.org/10.15585/mmwr.mm655051e1>.
- 17) The New York Times. <https://www.nytimes.com/interactive/2017/06/05/upshot/opioid-epidemic-drug-overdose-deaths-are-rising-faster-than-ever.html>. Accessed July 1, 2017.
- 18) Wilder CM, Miller SC, Tiffany E, Winhusen T, Winstanley EL, Stein MD. Risk factors for opioid overdose and awareness of overdose risk among veterans prescribed chronic opioids for addiction or pain. *Journal of addictive diseases.* 2016;35(1):42-51. DOI:10.1080/10550887.2016.1107264.
- 19) Binswanger IA, Koester S, Mueller SR, Gardner EM, Goddard K, Glanz JM. Overdose education and naloxone for patients prescribed opioids in primary care: a qualitative study of primary care staff. *J Gen Intern Med.* 2015;30(12):1837-1844. DOI: 10.1007/s11606-015-3394-3.
- 20) Behar E, Rowe C, Santos GM, et al. Acceptability of Naloxone Co-Prescription Among Primary Care Providers Treating Patients on Long-Term Opioid Therapy for Pain. *J Gen Intern Med.* 2017;32(291). DOI:10.1007/s11606-016-3911-z.