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Opioid Overdose Response Teaching to Staff in a Homeless Shelter

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Opioid Overdose Response Teaching to Staff in a Homeless Shelter: Review of the
Literature

BY

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A paper submitted in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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A Review of the Literature: Intranasal Naloxone Teaching in Homeless Shelter Staff

This Doctor of Nursing Practice (DNP) Project is approved as a credible and independent investigation by a candidate for the DNP degree and is acceptable for meeting the project requirements for this degree. Acceptance of this DNP Project does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Abstract

Introduction: Opioid overdose deaths continue to rise. An education program focused on immediate intervention, coined opioid education and naloxone distribution, trains community members to properly use forms of naloxone. These programs have proven efficacy in improving immediate overdose response.

Methods: A review of opioid education literature contains overarching themes of methods to measure the efficacy of teaching, focusing on specific populations, teaching requirements of the program, and lastly, information specific to homeless shelter staff.

Gaps: Gaps in the literature include the lack of accurate measurement methods, poor generalizability of the studies, inability to ethically randomize, and lack of applicable research in the country of the project. For future projects, education participants argue that witnessing an overdose is a traumatic event that needs to be addressed, but minimal adverse effects occur with the injection of intranasal naloxone. Additionally, participants show increased acceptability of intranasal naloxone in comparison to percutaneous methods. Lastly, to have effective naloxone projects, the accessibility of naloxone needs to be similar to the accessibility of other lifesaving community equipment.

Keywords: opioid education, naloxone distribution, community

A Review of the Literature: Intranasal Naloxone Teaching in Homeless Shelter Staff

Opioid overdose can occur in anyone who uses prescription opioids or illicit drugs such as heroin, morphine, codeine, fentanyl, hydrocodone, methadone, and oxycodone (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020b). An opioid overdose occurs when an individual misunderstands the directions for use, if the opioids are used illicitly or inappropriately, are prescribed for someone else, or are mixed with other medications, alcohol, or over-the-counter drugs.

Opioid overdoses are life-threatening medical emergencies and if untreated, can result in death. There is a correlation between those who endure poverty and homelessness and those who use illicit drugs as a coping method (Clark et al., 2014; McVicar et al., 2015). Between October 2019 and October 2020, a 30% increase in opioid overdose deaths occurred in the United States (US); attributing 76 deaths to opioid (Centers for Disease Control and Prevention [CDC], 2020).

Naloxone was approved by the Food and Drug Administration in 1971 to reverse the toxic effects of opioids and is administered when an individual shows signs of an opioid overdose (Boyer, 2012; SAMHSA, 2020a). Naloxone is an opioid antagonist and works by blocking opioid receptors; it is safe and has very few adverse effects (Boyer, 2012). Naloxone can be given intramuscularly, subcutaneously, intravenously, or intranasally and is a temporary treatment. It is essential to seek medical care post-administration as the medication can wear off quickly (SAMHSA, 2020a). Delaying the administration of naloxone, especially in areas where emergency medical assistance has a longer response time, can be deadly (Boyer, 2012).

To improve immediate overdose response, opioid education and naloxone distribution (OEND) programs have proven efficacy. Initiating and sustaining OEND requires training community members to properly use naloxone (Clark et al., 2014). To measure the efficacy of OEND teaching, pre-intervention and post-intervention surveys are routinely used, including the Opioid Overdose Knowledge Scale (OOKS) and Opioid Overdose Attitude Scale (OOAS). The overarching requirements of OEND teaching in the literature include symptoms, prevention, risk factors, immediate action, and naloxone administration (Clark et al., 2014).

Clinical Question

The project PICOT question guiding this literature review is: For staff at a Midwestern homeless shelter (P) how does an opioid overdose response program (I) compared to current practice (C) affect naloxone use and staff's scores on an OOKS and OOAS (O) in 3 months (T)? The objective of this paper is to discuss the literature findings related to implementation of naloxone teaching to a homeless shelter's staff.

Methods

A review of the literature was conducted by using the terms "opioid overdose" AND "naloxone" AND "community" NOT prescri* on PubMed, PsychINFO, SocIndex, CINAHL, and The Cochrane Library. These search terms and databases yielded 166 results. Articles were then excluded if they primarily addressed prescribing, pharmacotherapeutics, or situations with trained medical personnel. Also excluded were duplicate studies, commentaries, and articles that only provided interview results or were provided primarily in a language other than English. Abstracts were reviewed for the following intervention components: training, community, teaching, take-home naloxone,

and opioid education/naloxone distribution. The articles were further narrowed by their applicability to the project such as sample population and naloxone administration method. A total of 21 articles included in the literature review and summarized an evidence table (see Appendix A).

After creating the evidence table, the 21 articles were scored for level and quality based on the John Hopkins' Nursing Evidence-Based process (seen in Appendix B) as can be seen in Appendix C (Dang & Dearholt, 2018). Then, each result was graded on a quality scale. Level A must have a literature review, consistency and generalizability, satisfactory control, and sample sizes. Level B has reasonably consistent results, a large sample size, some definitive conclusions, reasonably consistent recommendations, and a literature review. Grade C has little evidence, inconsistent results, small sample size, or inability to draw significant conclusions (Dang & Dearholt, 2018). This literature review included two IB, one IIA, two IIB, four IIIA, one IIIB, four VA, four VB, and three VC. Studies that had a B rating were often related to unique populations or geographic groups. Level C studies were most often defined based on their small sample sizes.

Evidence Summary

OEND

Opioid education and naloxone distribution (OEND) programs teach participants proper administration of either intramuscular, intravenous, or intranasal naloxone and distribute naloxone to take home at the end of the teaching (Katzman et al., 2018). The most common alternative is the direct distribution of naloxone from area pharmacies. Measuring naloxone usage often comes from the number of naloxone kits distributed or self-reported usage (Bennett et al., 2018; Kirane et al., 2016). OEND teaching literature

has the following persistent and relevant themes: quantifying efficacy, focusing on population-specific teaching, and naloxone teaching requirements.

There are countless OEND programs in the US and many are created by each state's individual Department of Health. The first OEND program started in Chicago in 2001 and grew to provide naloxone to over 10,000 opioid overdoses (Lewis et al., 2017). In 2019, 247 or 94% of survey responding OEND programs existed in syringe exchange programs; there are also programs in homeless shelters, emergency medical services, social services, libraries, and substance use disorder treatment programs (Lambdin et al., 2020).

Measuring Efficacy

In the literature, post-OEND surveys have shown that after education, a range of opioid reversals occurs throughout time. These surveys range from information satisfaction to opinion or attitude surveys, to knowledge or competency surveys. Bennett et al. (2018) discuss that for every person OEND-trained over a 10-year period showed one opioid reversal. Additionally, many different types of individuals were able to reverse multiple overdoses. Bystander training for the community supports that opioid overdose deaths are decreased by OEND programs (Katzman et al., 2018; Naumann et al., 2019).

In a study of 287 individuals from Bernalillo County with confirmed opioid-use disorder, OEND and a 10-minute interview resulted in 65 overdose reversals in the community (Katzman et al., 2019). Similarly, in a specific Los Angeles neighborhood known for drug use, train-the-trainer naloxone teaching was administered to 66

individuals who use intravenous opioids (Wagner et al., 2010). This training resulted in 26 opioid reversals in 18 months.

OOKS and OOAS

The OOKS assesses the knowledge that healthcare professionals, patients, and family members have regarding overdose management (Williams et al., 2014). Specifically, the survey discusses risk factors, observable signs and symptoms, immediate actions, naloxone method of action and administration, adverse effects, and post-naloxone cares (Williams et al., 2013). The survey takes 10 minutes and includes four multiple-choice, four forced-choice, and six true/false questions. For each correct answer, points are given.

The OOAS focuses on competence, concerns, and readiness to act for healthcare professionals, patients, and families (Williams et al., 2013). This scale takes 15 minutes to finish and has an alpha coefficient of 0.90. To assess content validity, the authors compared the scores of addiction professionals to family members of opioid users; the professionals had significantly higher scores.

Williams et al. (2014) utilized the OOKS and OOAS before, immediately after, and 3 months after a 60-minute session. The training session included an oral and visual presentation, an 8-minute film, hands-on demonstration, and naloxone distribution. An increase in knowledge from baseline (31.91 correct answers) to follow-up (38.38 correct answers) was clinically significant.

Lott and Rhodes (2016) used state Department of Health PowerPoint education to teach about opioid overdose. Initial training showed an average knowledge level of 32.6 and immediately after, a score of 39.1. This study also exhibits that at the 3-month

follow-up, 38.4 of the knowledge questions retained correct answers ($p < 0.0001$). Heavey et al. (2013) had a 90-minute OEND and utilized the OOKS and OOAS before, immediately after, and 3 months later. An average OOKS increase of 9.7 out of 42 points occurred, or a 23.1% improvement of scores.

Population Focus

Katzman et al. (2018) found that family and friends did not willingly attend OEND programs because of the fear of being recognized, but those who did attend showed the most effective increase in knowledge score. While much of the research focuses on individuals who use opioids (Katzman et al., 2018, 2019; Kirane et al., 2016; Leece et al., 2013; Lott & Rhodes, 2016; Madah et al., 2019; Meade et al., 2018; Wagner et al., 2010), naloxone is not often used on the person who is taught, it is used on a third party (Katzman et al., 2018). OEND programs can be done for support persons only (Dahlem et al., 2016; Heavey et al., 2018; Williams et al., 2014) and can be done for a combination of support persons and opioid users (Bagley et al., 2018; Bennett et al., 2018; Naumann et al., 2019; Pearce et al., 2019; Wallace et al., 2018). Large-scale naloxone distribution studies repeatedly show high satisfaction among participants but require tailoring to the different population groups (Meade et al., 2018).

Homeless Shelter Staff

Few published articles discussed homeless shelter staff and OEND programs (Dahlem et al., 2016; Wallace et al., 2018). Homelessness poses unique barriers to harm reduction behaviors, including decreased access to preventative methods and confiscation of harm reduction medication by law enforcement or homeless shelter staff (Reed et al., 2019; Wagner et al., 2010). Reed et al. (2019) discuss that the percentage of individuals

who carry naloxone is higher in persons who use opioids that are homeless than those with stable housing.

Dahlem et al. (2016) utilized PowerPoint slides from the American Heart Association as part of a statewide OEND program to teach the homeless shelter staff of intranasal naloxone. The teaching of 40 cardiopulmonary resuscitation-trained, nonhealthcare employees resulted in four successful opioid reversals in 3 months in Massachusetts. Homeless shelter employees discuss that while resident overdoses are traumatic for them, the resident endures a more traumatizing event (Wallace et al., 2018). Homelessness is correlated with poorer alcohol and substance use outcomes than other populations (Collins, 2016; Linton et al., 2013)

Naloxone Teaching Requirements

In a systematic review of opioid overdose prevention programs, a consensus for naloxone education includes (1) properly identifying overdose symptoms, (2) preventing overdose, (3) overdose risk factors, (4) immediate appropriate response, and (5) naloxone administration (Clark et al., 2014). Other included information is often audiovisual, such as videos (Bennett et al., 2018; Meade et al., 2018; Williams et al., 2014). Nearly all naloxone training literature highlights the significance of education and return demonstration. There is not a nationwide, evidence-based training in the US based on intranasal naloxone.

OEND teaching lasts anywhere from 15 minutes (Katzman et al., 2018) to 90 minutes (Heavey et al., 2018). A variety of sessions took place, some literature shows a single education session, some articles utilized multiple sessions for multiple weeks. All data collection periods lasted less than a year and then were implemented long-term.

Barriers to Layperson Naloxone Use

Access is difficult both to training and to naloxone medication for laypersons. Lawmakers argue that allowing pharmacies to supply individuals with naloxone without a prescription extends an individual's life until the next overdose (Lewis et al., 2017). There is no evidence to support the claim that providing naloxone encourages drug use. Additionally, although some organizations provide grant-funded naloxone medication, the cost is \$100-\$300 for a single-use set (Hirsch et al., 2020). Access to naloxone without a prescription and outside of a grant-funded program only exists in CVS pharmacies in the project state. There are only two CVS pharmacies in the project state, and while the company claims that the medication is provided, there is no proof. (CVS Health, 2020). Another unique, but substantial barrier is that in the US, providers do not routinely prescribe naloxone when prescribing narcotics; nearly 70 times as many narcotics are prescribed than are naloxone scripts (Clark et al., 2014; Lewis et al., 2017).

There is a continued, multifaceted stigma that begins with the public's view of individuals who deal with addiction. Public stigma focuses on stereotypes, perceived dangerousness, and negative outlook towards individuals with opioid use disorders (Tsai et al., 2019). When behaviors begin to occur because of the public's stigma, enacted stigma occurs. This includes discrimination and putting physical distance between someone perceived to have an addiction. A combination of public and enacted stigma leads to poor treatment access and deficient harm reduction as a society and for the individual with addiction, disengaging from care and poor health outcomes occur. After public and enacted stigma, structural stigma forms a major barrier. Structural stigma causes decreased community support for laws and institutional policies. Each layer of

stigmatization builds on the next layer, further enforcing the humiliation and ostracization.

Gaps

Articles that discuss utilizing naloxone refill as a means for measuring overdose reversal are likely inaccurate (Meade et al., 2018). This assumes that a single naloxone injection was required for reversal when multiple injections could be required.

Additionally, measuring in this method does not account for naloxone that was lost, confiscated, sold, or individuals requesting a spare dose of the medication.

Most articles discussed populations that had a male, Caucasian majority (Bennett et al., 2018; Clark et al., 2014; Reed et al., 2019; Wagner et al., 2010; Williams et al., 2014). Few discussed a female majority (Heavey et al., 2018; Katzman et al., 2018, 2019; Kirane et al., 2016; Lott & Rhodes, 2016; Wallace et al., 2018) and no articles discuss adolescents. The specific demographic population, limited population size, and little room for generalizability put forth further areas of discussion. Further literature is needed to discern the differences in the demographic, gender, and opioid using/non-opioid using populations.

Many articles discuss that naloxone training is lifesaving, and randomization of research has stopped because of the obvious observable benefit (McDonald & Strang, 2016; Meade et al., 2018). Because of the unique nature of OEND programs and the ethical barriers to randomization, there are a climbing number of opioid prevention programs in the US, but all programs focus on descriptive studies rather than research (Clark et al., 2014; McDonald & Strang, 2016). Mitchell and Higgins (2016) discuss that

research is abundant in the United Kingdom, but minimal intranasal naloxone research exists in the US.

Recommendations for Practice

Staff members at homeless shelters argue that trauma, grief, and emotional burdens need to be assessed after the use of naloxone (Wallace et al., 2018). Bagley et al. (2018) discuss the importance of maintaining the anonymity of members to achieve accurate reporting of overdose reversals. Additionally, Meade et al. (2018) discuss the importance of tailoring the education to the audience at hand, either opioid users, support persons, or a group of both.

Administration of intranasal naloxone shows minimal adverse effects (McDonald & Strang, 2016; Wagner et al., 2010). Over 97.8% of suspected overdoses survived after receiving naloxone from individuals trained through OEND programs (Bagley et al., 2018). However, participants report minimal comfort with percutaneous injections of naloxone and increased comfort with intranasal naloxone (Keane et al., 2018).

Katzman et al. (2019) argue that the accessibility of naloxone needs to improve to prevent overdose deaths at a community level. Although take-home naloxone programs have proven efficacy, McDonald and Strang (2016) argue that the administration of naloxone is as time sensitive as using a defibrillator during cardiopulmonary resuscitation and should be as accessible.

Conclusion

OEND literature has the following persistent themes: methods for measuring efficacy, focusing on populations, and naloxone teaching requirements. For this project, literature on homeless shelter staff is also included. Through these recurring themes, gaps

and recommendations in the literature were identified. Major gaps include inaccurate measurement of naloxone use, poor generalizability, inability to randomize, and a lack of US-based naloxone studies. Practice recommendations include the importance of emotional trauma follow-up after an overdose. Alternatively, minimal adverse events occur post-intranasal naloxone injection and participants have increased comfort with intranasal methods. The accessibility of intranasal naloxone needs to be improved to combat the opioid overdose epidemic.

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Appendix A: Literature Review Table

	Evidence Level, Quality, and Study Design	Participants, Sample Size, and Setting	Intervention	Results	Timeframe	Gaps	Comments - Weaknesses	Recommendations For Practice
Clark, A. K., Wilder, C. M., & Winstanley, E. L. (2014). A systematic review of community opioid overdose prevention and naloxone distribution programs. <i>Journal of Addiction Medicine</i> , 8(3), 153-163. https://doi.org/10.1097/ADM.0000000000000034	Systematic review of qualitative studies 2A	19 articles from MEDLINE, PsychINFO, and Pubmed Only included original and peer-reviewed information. Nonrandomized studies. 9165 individuals total from the United States and United Kingdom	Opioid overdose prevention program (OOPP) from 10 minutes to 1 hour	1949 total successful reversals; 83%-96% survival rate; Individuals often use recommended and unrecommended treatment strategies regardless of receiving teaching.	Articles published between 2001-2014.	Randomization of naloxone training and administration is likely impossible, as it creates a major ethical barrier to withhold life-saving treatment. There are 188 OOPPs in the United States, but there are more descriptive studies than research.	Mostly Caucasian men. Focuses on only opioid overdose prevention programs, not other opioid adverse outcome programs.	Consensus for education includes (1) recognizing overdose symptoms, (2) preventing overdose, (3) risk factors for overdose, (4) appropriate response, and (5) naloxone administration. Encourages the retesting of surveys after several months to consider long-term efficacy. A convincing indication that a participant has acquired OOPP knowledge is through the demonstration of that knowledge.
Bennett, A. S., Bell, A., Doe-Simkins, M., Elliott, L., Pouget, E., & Davis, C. (2018). From peers to lay bystanders: Findings from a decade of naloxone distribution in Pittsburgh, PA. <i>Journal of Psychoactive Drugs</i> , 50(3), 240–246. https://doi.org/10.1080/02791072.2018.1430409	Longitudinal Nonrandomized Qualitative 3A	1330 opioid users 619 support persons Total n=1085 Oakland, Pittsburg	20 minute teaching; 11-minute video, hands-on demonstration, printed material on opioid overdose signs and actions, then Naloxone kit distribution. Opioid education and naloxone distribution (OEND).	For every person trained each year over the cumulative first 10 years of the program, there was approximately one overdose reversal reported. Many people reversed multiple overdoses of others. Most reversals occurred by opioid users.	January 1, 2006 to December 31, 2015	Self-reported data. Data was obtained at a syringe exchange program, non-PWUO do not go to these. Most participants used heroin, not other drugs. A change in legislation increased access to naloxone during the study. Nonrandomized, no control.	Mostly Caucasian men.	There is an increased emphasis to educate and distribute naloxone in at-risk, resource-deprived individuals. More important to educate those who do use opioids than those who do not use opioids.

<p>Williams A. V., Marsden, J., & Strang, J. (2014). Training family members to manage heroin overdose and administer naloxone: randomized trial of effects on knowledge and attitudes. <i>Addiction</i>, 109(2), 250–259. https://doi.org/10.1111/add.12360</p>	<p>two-group, parallel-arm, non-blinded, randomized controlled trial 1B</p>	<p>adult family members of heroin users versus an information-only control group, with follow-up assessments conducted immediately post-training n=123 England (London 76%, Kent 14%, Herefordshire 10%)</p>	<p>60-minute session. Twenty-five training sessions Oral presentation, 8-minute film, hands-on, naloxone distribution (OEND). Utilized OOKS and OOAS.</p>	<p>The intervention presented a greater increase in total opioid-related knowledge after the intervention, from 31.91 (SD = 6.1) at baseline to 38.38 (SD = 4.6) at follow-up. There was a substantially greater increase in attitudes among the training group [from 100.63 (SD = 11.9) at baseline to 114.73</p>	<p>2010; intervention and then 3 month follow up</p>	<p>Non-blinded study.</p>	<p>Convenience sample is used, Mostly Caucasian males.</p>	<p>Take-home naloxone training for family members of heroin users increases opioid overdose-related knowledge and competence and these benefits are well retained after 3 months.</p>
<p>Bagley, S. M., Forman, L. S., Ruiz, S., Cranston, K., & Walley, A. Y. (2018). Expanding access to naloxone for family members: The Massachusetts experience. <i>Drug & Alcohol Review</i>, 37(4), 480–486. https://doi.org/excelsior.sdstate.edu/10.1111/dar.12551</p>	<p>retrospective review 3A</p>	<p>Massachusetts, network of support groups for the families of people who use opioid 23 locations 40801 total 10827 family</p>	<p>Opioid education and naloxone distribution; monitored how frequently they took Narcan from meetings. (OEND).</p>	<p>total of 4373 reported rescue attempts. Family members reported 860 rescue attempts or 20% of all rescue attempts. Over 97.8% of rescued persons survived.</p>	<p>2008 and 2015 Weekly session</p>	<p>Self-reported data; convenience sample. High number of mothers. Probable underreporting of rescue attempts r/t poor anonymity in group setting.</p>	<p>Geographic restriction.</p>	<p>The presence of OEND to family members who may or may not use drugs is accessed by diverse settings. Families can take an active position in opioid pandemic. Family-centered activities should be included in expansion of opioid education.</p>

<p>Madah, A. D., Gjersing, L., & Clausen, T. (2019). Naloxone distribution and possession following a large-scale naloxone programme. <i>Addiction, 114</i>(1), 92–100. https://doi.org/10.1111/add.14425</p>	<p>Case report 5B</p>	<p>7 cities in Norway N=497 illegal opioid users</p>	<p>Private 20-minute interview. Staff took 5-10 minutes to train users. OEND with THN. Two cities were first training, the next five followed. stepwise implementation</p>	<p>Calculated the number of naloxone injections given 4631. Naloxone distribution increases over time, as the pilot cities showed more distribution than subsequent cities.</p>	<p>June 2014 - August 2017</p>	<p>Over-representation from low-threshold services. All opioid users.</p>	<p>Convenience sample Self-reported data. Data is on naloxone distribution.</p>	<p>Earlier implementation and longer monitoring of naloxone distribution will show increased possession of naloxone.</p>
<p>Dahlem, C. H., Horstman, M. J., & Williams, B. C. (2016). Development and implementation of intranasal naloxone opioid overdose response protocol at a homeless health clinic. <i>Journal of the American Association of Nurse Practitioners, 28</i>(1), 11–18. https://doi.org/10.1002/2327-6924.12249</p>	<p>Qualitative study 5A</p>	<p>Massachusetts N=40 CPR-trained nonhealthcare homeless shelter staff</p>	<p>PowerPoint slides from the American Heart Association and statewide OEND chart. Done in separate 1-2 hour trainings. Online anonymous survey. Only included intranasal naloxone.</p>	<p>4 successful opioid reversals</p>	<p>April - June 2013</p>	<p>Did not initially include videos or simulations.</p>	<p>Self-reported non-evidence based tools used to evaluate teaching.</p>	<p>Nurse practitioners (NP) should be on the frontline of the opioid pandemic both in educating and improving public policy. Intranasal naloxone is important to have in high-risk organizations.</p>

<p>Wallace, B., Barber, K., & Pauly, B. B. (2018). Sheltering risks: Implementation of harm reduction in homeless shelters during an overdose emergency. <i>The International journal on drug policy</i>, 53, 83–89. https://doi.org/10.1016/j.drugpo.2017.12.011</p>	<p>Qualitative 5C</p>	<p>N=49 Victoria, Canada</p> <p>Low barrier shelter residents (n = 23), shelter staff (n = 13), and harm reduction workers (n = 13).</p>	<p>40-60-minute recorded focus groups led by well-trained researchers. Utilized interpretive description to discuss their views on overdose and the homeless shelters' preparedness.</p>	<p>Although staff faces trauma when experiencing a resident's overdose, the resident experiences trauma that is life threatening. The trauma, grief, and emotional burdens need to be assessed after the need to use naloxone. Homeless shelters are micro-environments that are breeding grounds for opioid overdose. Overdoses often occurred in bathroom because there wasn't a "safe space" to use.</p>	<p>December, 2015 to January, 2016</p>	<p>-Two shelters in a single city. Does not include homeless individuals who choose not to shelter. Subjective experiences.</p>	<p>Financial incentives to staff and residents. A third of shelter residents were indigenous and most were women.</p>	<p>The only study that includes staff at low-barrier shelters that do not require abstinence from drugs/alcohol. Incomplete harm reduction implementation strategies can lead to misconceptions of staff and of residents.</p>
<p>Naumann, R. B., Durrance, C. P., Ranapurwala, S. I., Austin, A. E., Proescholdbell, S., Childs, R., Marshall, S. W., Kansagra, S., & Shanahan, M. E. (2019). Impact of a community-based naloxone distribution program on opioid overdose death rates. <i>Drug and Alcohol Dependence</i>, 204. https://doi.org/10.1016/j.drugalcdep.2019.06.038</p>	<p>Empirical quantitative study 3A</p>	<p>38 different counties in North Carolina</p>	<p>Provided naloxone kits and measured the refill number. Distributed 39,449 naloxone kits across NC. Discusses cost benefit.</p>	<p>352 NC deaths were avoided by naloxone distribution (95% CI: 189, 580). On average, for every dollar spent on the program, there was \$2742 of benefit due to OODs avoided (95% CI: \$1,237, \$4882).</p>	<p>August 2013 to December 2016</p>	<p>Restricted to counties with already high opioid overdose deaths. Financial benefit could be different in different states. Rural counties were not included. It is assumed that one kit's use resulted in one reversal, which is not necessarily true.</p>	<p>Focuses on cost-benefit of take-home naloxone in at-risk communities.</p>	<p>Community-based opioid overdose deaths are decreased by naloxone distribution. Healthcare personnel and community members need to continue to advocate for widespread naloxone distribution.</p>
<p>Kirane, H., Ketteringham, M., Bereket, S., Dima, R., Basta, A., Mendoza, S., Hanssen, H. (2016). Awareness and attitudes toward intranasal naloxone rescue for opioid overdose prevention. <i>Journal of</i></p>	<p>Cross-sectional; quantitative 5A</p>	<p>Single large community hospital on Staten Island</p>	<p>Interview/ self-administrated surveys. Derived from, but not exactly like</p>	<p>50% of providers felt naloxone access would decrease the likelihood of an</p>	<p>Six months; August 2014</p>	<p>small sample size, single geographic location, convenience sampling, the distinct demographics of the patients, and the</p>	<p>Mostly Caucasian males. Includes only patients who have been</p>	<p>Routine follow-up of survey questions is necessary in determining the efficacy of teaching.</p>

<p><i>Substance Abuse Treatment</i>, 69, 44-49. https://doi.org/10.1016/j.jsat.2016.07.005</p>		<p>N=101 18% of participants are homeless inpatient detoxification</p>	<p>opioid Overdose Knowledge Scale (OOKS) and the Opioid Overdose Attitude Scale (OOAS)</p>	<p>overdose occurring, and 58% felt it would not contribute to high-risk behavior. Among providers, completion of naloxone training was correlated with increased awareness of where to access kits for patients (p < 0.001)</p>	<p>to January 2015</p>	<p>distinctive clinical setting of substance abuse detoxification and rehabilitation programs, and an emergency department. Not able to generalize. Did not assess prior naloxone knowledge.</p>	<p>treated for opioid/substance abuse. Although it's based on an evidence-based scale, it's not validated or reliable.</p>	
<p>Lott, D. C., & Rhodes, J. (2016). Opioid overdose and naloxone education in a substance use disorder treatment program. <i>The American Journal on Addictions</i>, 25(3), 221–226. https://doi-org.excelsior.sdstate.edu/10.1111/ajad.12364</p>	<p>Qualitative 2B</p>	<p>N=43 Opioid addicts at community addiction treatment center in New York</p>	<p>Education was adapted from the <i>New York State Department of Health's Opioid Overdose Prevention Guidelines for Training Responders</i> by summarizing it in a 23-slide slideshow. The session follows a group format with lecture, slideshow, and handout and provides recognizing signs of opioid overdose and use of naloxone. Patients were able to ask questions during and after the presentation, and the entire</p>	<p>Utilized the OOKS prior, immediately after, and 3 months after. Significant improvement in scores from the OOKS following the education from 32.6 to 39.1 (p < .0001), which was mostly retained at the follow-up time point (total score of 38.4). The OOKS subdomains Actions and Naloxone Use followed a similar pattern (p < .0001).</p>	<p>3 months of monitoring in 2015, compared to historical control in 2011.</p>	<p>There were no changes between the intervention and control, suggesting that spending time discussing the medication is effective. Not randomized. Relatively low follow-up rate. Historical control.</p>	<p>Mostly Caucasian males. \$5 gift card incentive. Specific geographic region.</p>	<p>Treatment seekers and at risk-individuals are important cohorts to teach OOPP. Education alone is not effective enough to exhibit change, distribution of naloxone is necessary.</p>

			session was 30–45 min					
Pearce, L. A., Mathany, L., Rotheron, D., Kuo, M., & Buxton, J. A. (2019). An evaluation of take home Naloxone program implementation in British Columbian correctional facilities. <i>International Journal of Prisoner Health</i> , 15(1), 46–57. https://doi-org.excelior.sdstate.edu/10.1108/IJP-H-12-2017-0058	Qualitative 5A	United Kingdom correctional facilities N= 1318 Clients=n=35	Train-the-trainer OEND with THN. Focused interviews with drug users, family/friends, and staff/volunteers. One-hour training, 20-minute to 1-hour interview.	836 kits dispensed, 59 kits used. 66 opioid reversals most were by a third party at a private residence who used heroin.	Nov 2012- June 2013	Opioid users did not often call 911. No systematic follow-up. Subjective experiences. Kits were confiscated by police. Convenience sample. Ungeneralizable.	Very specific population.	The importance of tailoring education to unique population groups.
Meade, A. M., Bird, S. M., Strang, J., Pepple, T., Nichols, L. L., Mascarenhas, M., Choo, L., & Parmar, M. K. B. (2018). Methods for delivering the UK’s multi-centre prison-based naloxone-on-release pilot randomised trial (N-ALIVE): Europe’s largest prison-based randomised controlled trial. <i>Drug and Alcohol Review</i> , 37(4), 487–498. https://doi-org.excelior.sdstate.edu/10.1111/dar.12592	Initially randomized control trial; turned qualitative 3B	16 Correctional facilities (adult prisoners) United Kingdom N= 1685 prisoners (842 naloxone; 843 control	N-ALIVE instructional DVD; in person training and take-home naloxone	A third of the emergency naloxone administrations to reverse overdose were to the randomized ex-prisoner, two-thirds were to an individual who was not the study subject.	February 2011- December 2014	Randomization was stopped because the naloxone was often being used on someone other than the ex-prisoner. The naloxone was then given to all participants on release from the correctional facility.	Very specific population.	Large scale naloxone take-home studies show high satisfaction among consumers. Take home naloxone studies are unethical to randomize, as it is life-saving treatment. The importance of tailoring education to unique population groups.
McDonald, R., & Strang, J. (2016). Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. <i>Addiction</i> , 111(7), 1177–1187. https://doi-org.excelior.sdstate.edu/10.1111/add.13326	Systematic review of qualitative studies 2B	22 studies included from MEDLINE, PsycINFO, and PubMed	Assessed articles via the Bradford Hill Criteria for (1) strength of association, (2) consistency, (3) specificity, (4) temporality, (5) dose–response relationship, (6)	in control communities that did not implement THN, opioid overdose mortality was significantly higher. Providers argue that take home naloxone is a gateway for heroin users, and	January 1946 and June 2015	Data is based off of naloxone refill, which might not be the most accurate measure of naloxone administration. Positive naloxone outcomes are likely to create biased, positive satisfaction scores in naloxone users.	No articles were randomized. There is no true experimental data, as it is considered unethical.	Time delivery of naloxone is crucial and is compared to public placement of defibrillators and teaching of cardiopulmonary resuscitation for lay people likely to witness a cardiac arrest.

			plausibility, (7) coherence, (8) experimental evidence and (9) analogy.	encourages use but this is not supported in the evidence. Improved survival rates and reduced mortality rates. Low number of adverse effects.				Take home naloxone has proven efficacy in heroin overdose but needs further research in opioid and methodone overdose.
Wagner, K. D., Valente, T. W., Casanova, M., Partovi, S. M., Mendenhall, B. M., Hundley, J. H., Gonzalez, M., & Unger, J. B. (2010). Evaluation of an overdose prevention and response training programme for injection drug users in the Skid Row area of Los Angeles, CA. <i>International Journal of Drug Policy</i> , 21(3), 186–193. https://doi-org.excelior.sdstate.edu/10.1016/j.drugpo.2009.01.003	Observational 5A	Specific neighborhood in Los Angeles, CA Only IV drug users N=66	Training sessions were conducted individually or in small groups (two to six people) by two trainers. Both were educated in overdose prevention and response training through local overdose prevention efforts and a “Train the Trainer” seminar. Discussion and slides and hands-on. Provided intramuscular naloxone kits OEND.	Thorough incident reporting with naloxone refill. The proportion of victims who died at the scene was similar before (9%) and after (11%) the training. However, important changes in knowledge, attitudes, and response behaviour were observed. 53% of participants reported decreased drug use at follow-up which contradicts the belief that naloxone training encourages drug use. 26 successful opioid reversals.	September 2006-January 2008	Financial incentives for completing initial and follow-up. Several reports of loss, theft, or confiscation of naloxone compared to other studies. No control group, no randomization. Relies on self-reports.	Very specific geographic location. Mostly male, homeless population. Mixed racial groups.	This training in intravenous drug users shows change behavior and self-efficacy. There are few negative consequences.
Reed, M., Wagner, K. D., Tran, N. K., Brady, K. A., Shinefeld, J., & Roth, A. (2019). Prevalence and correlates of carrying naloxone among a community-based sample of opioid-using people who inject drugs. <i>International Journal of Drug Policy</i> , 73, 32–35. https://doi-org.excelior.sdstate.edu/10.1016/j.drugpo.2019.07.010	Qualitative case study 5A	Philadelphia, PA Used drugs in the last 12 months. n = 571	Government funded survey based off of a single question and demographic questions.	Odds of carrying naloxone were higher among PWID who were: homeless in the past year.	2015	Financial incentives/recruitment. Cross sectional study of one city. Miscommunicated question.	Mostly Caucasian males.	Homelessness and law enforcement encounters are known barriers to harm reducing behaviors.

<p>Katzman, J. G., Greenberg, N. H., Takeda, M. Y., & Moya Balasch, M. (2019). Characteristics of patients with opioid use disorder associated with performing overdose reversals in the community: An opioid treatment program Analysis. <i>Journal of Addiction Medicine, 13</i>(2), 131–138. https://doi-org.excelior.sdstate.edu/10.1097/ADM.0000000000000461</p>	<p>Qualitative cohort. 5B</p>	<p>N=287 Confirmed opioid use disorder. Bernalillo County, New Mexico</p>	<p>Education for OD recognition and response. Instructed on "Evzio," and demonstrated proper kit use to the study coordinator. At the end of the enrollment visit, 1 naloxone auto-injector kit was given to each participant and instructed to teach their household. Study participants engaged in a 10- to 15-minute follow-up interview at both 3 and 6 months to assess any new experiences with opioid ODs since study enrollment</p>	<p>65 OD reversals in the community.</p>	<p>6 months April 4 and October 5, 2016</p>	<p>Most individuals were younger than 30 years old. Data is self-reported. 38 naloxone kits were lost or stolen.</p>	<p>Most enrollees at the organization used are women (71%). Hispanic white is dominating race. Does not assess the knowledge, thoughts, or feelings of the individual.</p>	<p>If naloxone is accessible, more patients treated in an OTP setting can perform OD reversals in the community. Success is dependent on social connectivity.</p>
<p>Mitchell, K. D., & Higgins, L. J. (2016). Combating opioid overdose with public access to naloxone. <i>Journal of Addictions Nursing, 27</i>, 160-179. https://doi.org/10.1097/JAN.0000000000000132</p>	<p>Meta-analysis of qualitative research 3A</p>	<p>38 articles from Academic Search Premier, CINAHL Complete, MEDLINE Complete, PubMed, and Psychology and Behavior</p>	<p>Articles focused on global trends, U.S. OEPs with naloxone distribution, barriers to naloxone distribution, political opposition and</p>	<p>Many articles discuss IV heroin users, not many articles discuss oral opioid users. Most populations are high-risk drug users already.</p>	<p>2010-2016</p>	<p>Authors only gathered information about overdose reversals if participants returned for naloxone refills, which could underestimate the results. articles were inconsistent in focus regarding target patient populations</p>	<p>There is a lack of information in the United States, abundance of research in the United Kingdom.</p>	<p>Nursing is underrepresented in nursing literature, but poses a unique vantage point. Nurse practitioners are fundamental in education, management, and evaluation of</p>

		Sciences Collection.	support, and financial impact.					layperson naloxone use.
Keane, C., Egan, J. E., & Hawk, M. (2018). Effects of naloxone distribution to likely bystanders: Results of an agent-based model. <i>International Journal of Drug Policy</i> , 55, 61–69. https://doi-org.excelsior.sdstate.edu/10.1016/j.drugpo.2018.02.008	Qualitative 5C	Providers=n=7 Clients=n=22 Urban Southwestern Pennsylvania	Descriptive interviews that lasted 45-60 minutes and simulations with real-life situations. Community based naloxone distribution.	No comfort with injectable forms of naloxone. Decreased opioid overdose deaths in simulated community.	July through September 2016	Simulated experience, no real data. It was assumed that one naloxone dose would result in one opioid reversal but this is not necessarily true related to high dose fentanyl and other synthetic drugs.	Small sample size. Restricted geographic area. Financial incentives.	Need increase support for naloxone distribution via harm reduction sites, such as syringe exchange programs, since these sites are more likely to engage people at high risk for overdose deaths, that is, people who use opioids. Given that overdoses in which fentanyl is present are on the rise, efforts to ensure adequate availability of naloxone as well as to develop and distribute sustained-release forms of naloxone will be critical.
Katzman, J. G., Takeda, M. Y., Bhatt, S. R., Balasch, M. M., Greenberg, N., & Yonas, H. (2018). An innovative model for Naloxone use within an OTP setting: A prospective cohort study. <i>Journal of Addiction Medicine</i> , 12(2), 113–118. https://doi-org.excelsior.sdstate.edu/10.1097/ADM.0000000000000374	Prospective qualitative study 5B	N=244 New Mexico addiction center	15-20 minutes of teaching and participant demonstration with naloxone distribution (OEND).	38 opioid reversals in three months (13%).	April 4, 2016 and July 4, 2016	Because of the Health Insurance Portability and Accountability Act, direct outcome assessment of the community members who were treated with naloxone for an overdose reversal was not possible. Many people survive overdose from heroin and prescription opioid pain relievers without naloxone or EMS support.	Mostly women (71%) and includes pregnant women. High percentage of methadone users.	Naloxone is not often used on the person who is taught, it is used on a third party. Community and bystander training shows proven ability to use appropriately in the community.

<p>Heavey, S. C., Burstein, G., Moore, C., & Homish, G. G. (2018). Overdose education and naloxone distribution program attendees: Who attends, what do they know, and how do they feel? <i>Journal of Public Health Management & Practice, 24</i>(1), 63–68. https://doi-org.excelior.sdstate.edu/10.1097/PHH.0000000000000538</p>	<p>Qualitative 5C</p>	<p>Erie County, New York N=198</p>	<p>90-minute education session and naloxone distribution (OEND). OOKS and OOAS.</p>	<p>Knowledge scores improved across all training sessions, with an average score increase of 9.7 out of 42 points, a 23.1% increase (P < .001). Average increase of 15.4%.</p>	<p>October-November 2015</p>	<p>Did not track naloxone kit use. Poor distribution of opioid users.</p>	<p>Mostly Caucasian (84%) and females (77%).</p>	<p>Family and friends show decreased OEND attendance related to embarrassment or worry of being recognized. OEND programs effectively reach family/friends but not necessarily opioid users.</p>
<p>Leece, P. N., Hopkins, S., Marshall, C., Orkin, A., Gassanov, M. A., & Shahin, R. M. (2013). Development and implementation of an opioid overdose prevention and response program in Toronto, Ontario. <i>Canadian Journal of Public Health, 104</i>(3), e200-4. https://doi.org/10.17269/cjph.104.3788</p>	<p>Qualitative 5B</p>	<p>N=209 Toronto needle exchange program</p>	<p>20-minute individual or small group education. IM naloxone injection called POINT training (OEND).</p>	<p>17 successful opioid reversals. Trainers report that intranasal naloxone would be more user friendly and easier to teach. Successful recruitment.</p>	<p>8 months. August 2011</p>	<p>Technically less reversals than other studies.</p>	<p>Only targets opioid users. Takes place in a different country with possibly different laws. Intranasal naloxone not legal in Canada.</p>	<p>Other public health organizations could benefit from this teaching method.</p>

Appendix B: Evidence Level and Quality Guide

<p>Level 1: experimental study, randomized controlled trial, systematic review of randomized controlled trials (RCTs)</p>	<p>A= High quality</p> <p>B= Good quality</p> <p>C= Low quality or major flaws</p>
<p>Level II: Quasi-experimental study, systematic review of quasi-experimental and RCTs</p>	
<p>Level III: non-experimental, systematic review with a combination of studies, qualitative study</p>	
<p>Level IV: opinion of respected persons or panels</p>	
<p>Level V: based on experiential, not research</p>	

Appendix C: Level of Evidence and Grade Table

Levels of Evidence		Quality of Evidence	
Level I	2	A	0
		B	2
		C	0
Level II	3	A	1
		B	2
		C	0
Level III	5	A	4
		B	1
		C	0
Level IV	0	A	0
		B	0
		C	0
Level V	11	A	4
		B	4
		C	3

Opioid Overdose Response Teaching to Staff in a Homeless Shelter: Methodology

BY

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OPIOID OVERDOSE RESPONSE TEACHING TO STAFF

Abstract

Background/Purpose: Opioid overdose can occur in anyone who uses illicit drugs, but relationship correlation exists between homelessness and illicit drug use. Between March 2019 and March 2020, 92 deaths were attributed to opioids in the DNP Project state.

Methods: Naloxone education was given to a single population of homeless shelter staff. An Opioid Overdose Attitude Scale (OOAS) and Opioid Overdose Knowledge Scale (OOKS) were administered to the sample prior to education, immediately after education, and 3 months after education.

Results: OOAS and OOKS changes between surveys as a whole were not statistically significant ($p=0.14$; $p=0.25$). Individual components of the surveys did show statistical significance. OOKS pre-education and immediate post education risk and naloxone questions were statistically significant ($p=0.03$, $p=0.02$). OOAS competency for pre-education to immediate post-education ($p=0.00075$) and pre-education to 3-month post ($p=0.017$) was statistically significant.

Discussion: This specific statewide naloxone program showed an increase in baseline knowledge and a sustained increase in survey scores over time. This indicates that the teaching method is effective in certain areas but requires tailoring to the specific audience to improve efficacy of the education.

Implications for Practice: This DNP Project has the potential to equip high-risk environments with lifesaving treatment.

Keywords: homeless shelter staff, opioid education, naloxone distribution

OPIOID OVERDOSE RESPONSE TEACHING TO STAFF

Opioid Overdose Response Teaching to Staff in a Homeless Shelter

Background/Purpose

Opioid overdose can occur in anyone who uses illicit drugs, but there is a relationship between being homeless and using illicit substances as a coping mechanism (Clark et al., 2014; McVicar et al., 2015). Naloxone is administered when an individual shows signs of an opioid overdose such as pallor, clamminess, unresponsiveness, pinpoint pupils, cyanosis, vomiting, shallow breathing, or absent pulse (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020). The World Health Organization (2018) suggests availability of naloxone to people that are likely to witness an overdose, including individuals who use opioids, their friends, and families.

Significance of the Problem

In the Midwestern state that the DNP Project occurred, between March 2019 and March 2020, 92 deaths were considered opioid overdoses (Centers for Disease Control and Prevention [CDC], 2020a). In 2018, the opioid overdose death rate was 6.9 per 100,000 (CDC, 2020b). Although many naloxone distribution programs exist in syringe exchange programs, the project state does not have any publicly acknowledged syringe exchange programs (North American Syringe Exchange Network, 2020). Out of the 66 counties in the project state, 22 (33%) report a history of or current naloxone distribution program.

Opioid overdose survivors have experienced a traumatic event that is not only physically taxing, but also requires adjustment to emotional consequences of overdosing such as embarrassment, guilt, rage, and appreciation (SAMHSA, 2018). The individual who had the overdose is not the only individual affected by the event as family members,

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friends, and support persons often feel scrutinized or helpless because they believe they could have prevented the overdose. The impact of an overdose expands to communities, as opioid overdoses are not always private, in-home events.

PICOT Question

The PICOT question that guided this DNP Project was: For staff at a Midwestern homeless shelter (P) how does an opioid overdose response program (I) compare to current practice (C) affect the number of naloxone kits used and staff's scores on an OOKS and OOAS (O) in 3 months (T)?

Evidence Findings

Opioid education and naloxone distribution. Opioid education and naloxone distribution (OEND) programs teach participants proper naloxone administration and distribute naloxone to take home (Katzman et al., 2018). There are many OEND programs in the United States (US) that are created by each state's individual Department of Health. There are OEND programs in homeless shelters, emergency medical services (EMS), social services, libraries, syringe exchange, and substance use disorder treatment programs (Lambdin et al., 2020).

Through a systematic review of opioid overdose prevention programs, a consensus for naloxone education includes (1) properly identifying overdose symptoms, (2) preventing overdose, (3) reducing overdose risk factors, (4) activating immediate appropriate response, and (5) naloxone administration (Clark et al., 2014). Nearly all naloxone training literature emphasizes the importance of instruction and return demonstration. A nation-wide, evidence-based intranasal naloxone training program does not exist in the US. At a community level, opioid overdose deaths are decreased by

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OEND programs and bystander training shows proven efficacy in naloxone use (Katzman et al., 2018; Naumann et al., 2019).

Population focus and homelessness. Large-scale naloxone distribution studies repeatedly report high satisfaction among participants but require population tailoring (Meade et al., 2018). Homelessness poses unique barriers to harm reduction behaviors (Reed et al., 2019; Wagner et al., 2010). Homeless shelters are micro-environments that frequently experience overdoses. Homeless shelter staff spend time and many live within the same facility as the residents; this increases their presence as support persons. Additionally, homeless individuals have worse alcohol and substance use outcomes than other populations (Collins, 2016; Linton et al., 2013)

Barriers to Layperson Naloxone Use

Access is difficult for both training and obtaining naloxone for laypersons. Although some grants allow for access to free naloxone, the lifesaving treatment costs \$100-\$300 for a single-use kit (Hirsch et al., 2020). There is a continued, multifaceted stigma that begins with the public's view of individuals who deal with addiction. Public stigma focuses on stereotypes, perceived dangerousness, and negative outlook towards individuals with opioid use disorders (Tsai et al., 2019).

Gaps

Further literature is needed to discern the differences in the demographic, gender, and opioid-using/non-opioid using populations. Many articles discuss naloxone training as lifesaving, and research studies have stopped randomization because of the obvious perceived benefit of the training (McDonald & Strang, 2016; Meade et al., 2018). Because of the unique nature of OEND programs and the ethical barriers to

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randomization, there are climbing numbers of opioid prevention programs in the US, but all programs focus on descriptive studies rather than research (Clark et al., 2014; McDonald & Strang, 2016). Mitchell and Higgins (2016) discuss that research is abundant in the United Kingdom, but minimal intranasal naloxone research is available in the US.

Recommendations for Practice

Staff members at homeless shelters argue that trauma, grief, and emotional burdens need to be assessed after the use of naloxone (Wallace et al., 2018). Additionally, Meade et al. (2018) discuss the importance of tailoring the education to the audience at hand, either opioid users, support persons, or a group of both. Administration of intranasal naloxone shows minimal adverse effects (McDonald & Strang, 2016; Wagner et al., 2010). Over 97.8% of suspected overdoses survived after receiving naloxone from individuals trained through OEND programs (Bagley et al., 2018). Participants report minimal comfort with percutaneous injections of naloxone and increased comfort with intranasal naloxone (Keane et al., 2018).

Methods

A change theory guides and structures the DNP Project process. This was accomplished through using Barrett's Theory of Power as Knowing Participation in Change as a guide (Barrett, 2015). This theory focuses on an individuals' awareness, choice, freedom to act purposefully, and involvement in change as a positive change determination. A depiction of Barrett's theory can be seen in Appendix C.

The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model was used as a guide for this DNP Project. A depiction and permission to use this model can be seen

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in Appendix D. JHNEBP is an evidence-based method of identifying the need for and implementation of change (Dearholt, 2012). First, the clinical practice question is created, and a literature review is completed, appraised, and synthesized. Lastly, evidence-based change translation is outlined and put into practice.

Hildegard Peplau's (1952) nurse-client relationship was used as a guide to foster a relationship between the student and homeless shelter staff. The orientation phase is initiated by the nurse and focuses on evolving trust. Next, identification of workplace problems is recognized, and the client-patient pair begin working independently, with the nurse as the resource. Lastly, once goals have been met, information is summarized, and the relationship is typically terminated.

Sample

Staff in the homeless shelter are of many employment statuses, training, varying ages, education, genders, and experience with homeless populations. Participant demographic information was obtained through a survey (see Appendix E). Specific data from the demographics survey can be seen in Appendix F. A total of 14 individuals participated in the project. The number of staff members employed full-time was 11 (78.6%) and part time was 3 (21.4%). The majority of participants had less than a year of experience working with the homeless population. Although 20 individuals participated in the teaching, the sample size was 14 as two employees rotated in and out of the teaching session to check on residents and four individuals participated via Zoom. These participants were excluded because they did not have access to the surveys and were not

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able to be checked off on return demonstration; however, they received the same naloxone education.

Setting

The DNP Project setting was a non-profit, low-barrier homeless shelter in the Midwestern US. Low-barrier shelters do not allow guests to ingest drugs or alcohol on the premises, but guests are not turned away if they appear under the influence (US Interagency Council on Homelessness, 2018). Since 2015, the homeless shelter has had 80 male beds, 20 female beds, and seven family rooms. The homeless shelter provides emergency nighttime shelter. Additionally, this homeless shelter has clinical hours for mental health and addiction counseling. The homeless shelter houses on average 100 guests and seven families per night, and an additional 20-40 people, including children (M. Shields, personal communication, October 8, 2020).

Current practice for a suspected opioid overdose included notifying EMS by calling 911. A naloxone policy did not exist, staff were not trained on identification and administration of naloxone. Additionally, staff were not regularly educated on signs of opioid overdose in the proposed DNP Project setting.

Evidence Based Interventions

The education and in-person educator were state-selected and state-funded. Education was created by the State's Department of Health as a component of a statewide Naloxone Project (see Appendix G). The PowerPoint included statistics of opioid overdoses, a discussion on how opioids work, signs and symptoms of overdose, and appropriate opioid overdose treatment response, as is encouraged through the literature (Clark et al., 2014). First, state-specific statistics and naloxone legislation were discussed

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including immunity from civil liability for the staff member and the organization. This exists when the staff is acting in good faith and with compliance to the naloxone administration protocol. The PowerPoint discussed that opioids work by acting on receptors in the brain that relieve pain, but also slow down breathing and could lead to death if used inappropriately.

The education detailed steps for staff that witness an opioid overdose.

Additionally, staff were educated that there is a difference between a shelter resident that is under the influence of drugs and in a state of emergency. When a shelter resident is unresponsive to sternal rub, breathing less than 10 breaths per minute, and/or gasping or choking, staff is to follow the protocol (see Appendix H). This protocol does not occur if the shelter resident does not meet any of the previously listed criteria. This list of actions in the protocol all need to occur, but can occur simultaneously, and not necessarily in any specific order. The steps include: move bystanders from the area to provide privacy with screens or blankets; notify EMS; assess resident's qualification for intranasal naloxone; put on gown, gloves, and mask with face shield; administer intranasal naloxone; and begin cardiopulmonary resuscitation if needed or place client in the recovery position.

Surveys for Comprehension

The Opioid Overdose Attitudes Scale (OOAS) focuses on competence, concerns, and readiness to act for healthcare professionals, patients, and family members (Williams et al., 2013). This scale took 15 minutes to complete and has an alpha coefficient of 0.90 (Williams et al., 2013). To assess content validity, the scores of addiction professionals were compared to family members of opioid users. The professionals had significantly higher scores. The OOAS was compared to the General Self-efficacy Scale but was not

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found to be correlated (Williams et al., 2013). The OOAS scale and scoring can be found in Appendix I.

The Opioid Overdose Knowledge Scale (OOKS) discusses risk factors, signs and symptoms, immediate actions, naloxone effect and administration, adverse effects, and post-naloxone cares (Williams et al., 2013). The questionnaire took 10 minutes and for each correct answer, set point values were rewarded. The OOKS has an alpha coefficient of 0.83 and was compared to the evidence-based and statistically significant Brief Overdose Recognition and Response Assessment (BORRA) (Williams et al., 2013). The OOKS and the BORRA were positively correlated as a whole and on each sub-topic. The OOKS scale and scoring can be found in Appendix J. See Appendix K for permission to use OOAS and OOKS scales.

Project Procedure

The DNP Project Coordinator was solely responsible for organization, design, and implementation of this DNP Project through coordination of multiple agencies and establishing evidence-based processes to assess competency and efficacy. First, the DNP Project Coordinator gained approval from the DNP Project site and the university. Next, before receiving naloxone education, homeless shelter staff completed the OOAS, OOKS, and demographics survey with their assigned anonymous number. PowerPoint education using the tool above was provided with an in-person educator from the Statewide Naloxone Project committee.

After the PowerPoint and in-person demonstration by the State Naloxone Educator, competency check-offs occurred individually. The facility was given two naloxone kits that were to remain in the facility. Staff members were required to

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demonstrate appropriate assessment of an opioid overdosing individual, proper administration of intranasal naloxone, and appropriate positioning or cardiopulmonary resuscitation of the individual who overdosed. This demonstration was done for the State Naloxone Educator and the DNP Project Coordinator. The staff completed a post-education OOKS and OOAS that corresponded with their anonymous number.

The DNP Project Coordinator assured inclusion of the homeless shelter in grant funding for naloxone. Naloxone was provided after a Hold Harmless Agreement was signed by the facility director through the Federal Grant Funds that were received by the state's Naloxone Project. A Hold Harmless Agreement is a legal contract that releases both parties of any legal liability for injuries or damages endured by the organization signing the contract (E. Taylor, personal communication, July 30, 2020; Department of Health, 2020). The purpose of utilizing this approach was to secure grant-funded, long-term naloxone supplies for the shelter.

If staff members witnessed a possible overdose, according to protocol established by the DNP Project Coordinator, the staff would first contact EMS via telephone and the shelter manager on duty in person. The shelter manager was in charge of carrying naloxone on his or her person during his or her shift. Staff was reminded to survey the scene, not touch any drug paraphernalia, and not leave the individual alone thus working as a team. If naloxone was administered and the shelter resident woke, the resident could be agitated and the safety of both the staff and the shelter resident was of utmost importance. The arrival of law enforcement or EMS, as first responders, required the staff to quickly and accurately report event circumstances. Staff were required to remove

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personal protective equipment and dispose of it in a tied garbage bag, prior to performing hand hygiene.

Three months after the education and training session, the DNP Project Coordinator utilized an anonymous survey to assess naloxone usage. After the 3-month tracking period, a repeat OOAS and OOKS were sent out to staff to assess their retention of information. The DNP Project Coordinator then compared pre-, immediate-post, and 3-month post-education data for the sample as a whole.

Ethical Considerations

Maintaining an ethical environment was of utmost importance for the DNP Project. Before the mandatory site-wide education, participants utilized an anonymous number as their identifier. This identifier consisted of two letters; the first letter was the first letter of the individual's father's first name, the second letter was the individual's middle initial, followed by a four-digit code that coincided with the individual's birth year.

Paper copies of surveys were stored in the site manager's office in a locked filing cabinet. This office was also locked at all times. Names and personal information were not collected. Information will be maintained with the DNP Project Coordinator for 5 years via an encrypted USB drive. After six years, the staff member surveys will be shredded. The DNP Project site does not have a time or location requirement for saving or storing employee education information.

Individuals who could endure intranasal naloxone treatment have their ethical rights maintained as the treatment they receive is routine, emergency medical, and evidence-based standards of care. The DNP Project was evaluated against the DNP

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Project Coordinator's university institution review board after the proposal and according to an algorithm put forth by the Human Subjects Committee, the DNP Project does not meet federal and university definition of human subjects research as seen in Appendix A.

Results

Two data sets were collected for this DNP Project. The first included the number of naloxone refills requested by the facility in 3 months. No refills were requested during the intervention period. Additionally, through an anonymous survey, staff members reported not using naloxone in the 3-month intervention period.

The DNP Project Coordinator and a statistician performed a statistical analysis of the data using a paired-*t* test. The significance level was set for $\alpha=0.05$. For the OOAS, the average pre-education was 84.71 (SD +/- 7.42), the average immediate post-education came to 90.79 (SD +/- 10.82), and the average 3-month post was 91.86 (SD +/- 11.39). Pre-education, post-education, and 3-month post-education average scores can be found in Appendix L for individual components of the OOAS. There was no statistical significance for the difference between the average pre-education and immediate post-education ($p= 0.051$); between immediate post-education and 3-month post-education ($p=0.439$); and between pre-education and 3-month education ($p=0.062$). Individual components of the OOAS that were statistically significant included competency for both pre-education to immediate post-education ($p=0.00075$) and pre-education to 3-month post-education ($p=0.017$).

The average group scores for the OOKS are as follows: pre-education of 28.5 (SD +/- 6.56), immediate post-education of 32.86 (SD +/- 4.72), and 3-month OOKS education was 31.43 (SD +/- 0.98). Average pre-education to immediate post-education

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scores showed statistical significance ($p= 0.046$). Average immediate post-education to 3-month post-education scores did not show statistical significance ($p=0.12$). Average pre-education to 3-month post-education did not show statistical significance ($p=0.26$). The risk and naloxone questions showed statistical significance ($p= 0.03$; $p=0.02$) between pre-education and immediate-post education. All other individual components did not show statistical significance. The average score for the individual OOKS components can be seen in Appendix M.

The DNP Project Coordinator and a statistician performed a statistical analysis of the data as a whole using a repeated measures analysis with linear mixed models. Through this method, the OOAS changes were not statistically significant ($p=0.14$). Additionally, OOKS changes were not statistically significant ($p=0.25$).

Discussion

Implications for Practice

Clinical Significance

The surveys as a whole did not have a statistically significant change in scores. An expected outcome was the increase in survey scores, thus an increase in knowledge. The scores showed an increase in knowledge from baseline and sustained scores, greater than pre-testing, at the 3-month mark. Additionally, this DNP Project's purpose was equipping staff with valuable opioid overdose and treatment knowledge. Having a standardized naloxone protocol for this facility bolstered staff confidence in helping those suffering from opioid overdose and provided a safeguard for the residents that they serve

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Impact on the Organization, Policy, and Quality of Healthcare

This DNP Project had the potential to equip high-risk environments with lifesaving treatment. There is the potential to improve the teaching methods based on feedback from surveys. Because naloxone was not readily available to the public, this intervention helped the organization approach the care of an underserved and vulnerable population. Additionally, this policy influenced other high-risk organizations in the community to adopt this program, or similar naloxone teaching programs. If more community organizations adopt similar programs, the rate of fatal opioid overdoses in the community; could drastically decrease in this at-risk population.

Finances and Sustainability

Financial costs for the organization included reimbursement of staff's paid education time. Facility staff were reimbursed for their participation based on their usual hourly wage; staff were reimbursed for all educational training as this was facility protocol (M. Shields, personal conversation, October 8, 2020). Financial costs for the community and the individual are difficult to quantify, as individual lives were being saved. The DNP Project was eligible for grant funding because part of the intervention utilized a program associated with the Department of Health. Funding for printing and paper materials was by the DNP Project Coordinator.

Scheirer and Dearing (2011) discuss that in public health, sustainability is a major barrier. Structural measures support sustainability; there were many medical personnel infiltrated in the organization (Agency for Healthcare Research, 2015). One DNP Project member, the Safety Coordinator, focused solely on the safety of staff and residents. Outcome measures that attributed to sustainability were the utilization of naloxone and 3-

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month follow-up surveys (Agency for Healthcare Research, 2015). After the pilot program, the organization was included in grant funding for naloxone, as part of the Statewide Naloxone Project. Naloxone was provided by the State Naloxone Educator.

Limitations

The statistical power and results do not allow for generalizability of the DNP Project due to small sample size. The method of collection for the OOKS and OOAS may be less statistically powerful than other forms of measurement and may not prevent bias. However, other measurement techniques were not utilized for the data sample. This DNP Project was completed in a location that voluntarily agreed to have the education and process implemented. Another barrier includes the underreporting of reversals. Initially, the sample size was 30 participants, including administration and volunteers, however, due to limited room capacity, the sample size was adjusted to include only frontline persons with likelihood for opioid overdose encounters.

Recommendations for Further Practice

A longer collection period of data may offer greater significance for monitoring naloxone refills. Future DNP Projects and studies could delve into specifics, feelings, and successes of opioid reversals by staff. It would be beneficial from a community-perspective, to institute a public network of take-home naloxone organizations. This would allow better access to naloxone and increase the public's awareness of available resources. Allowing for survey completion via electronic survey or paper copy would improve sample size.

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Conclusion

Utilizing Barrett's Theory of Power as Knowing Participation, the Johns Hopkins Evidence-Based Practice model, and Peplau's theory of nurse-client relationship was essential to the success of this DNP Project. The primary outcome of the DNP Project was to quantify the number of opioid reversals by keeping track of refills requested by the facility. Secondary outcomes included improved OOAS and OOKS scores by homeless shelter staff members.

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Appendix A
University IRB Approval



SOUTH DAKOTA STATE UNIVERSITY

Institutional Review Board

Investigator: Hayley Rasmussen
Project Title: Opioid Overdose Response Teaching to Staff in a Homeless Shelter
Determination: Not Human Subjects Research
Approval #: NA
Date: July 27, 2021

It is the determination of the Institutional Review Board (IRB) of South Dakota State University that the program evaluation referenced above does not meet the Federal definition of Human Subjects Research. Thus, the study is not subject to the Common Rule or the purview of the IRB.


Note: If the project is changed, it should be re-submitted to the IRB for review.

A handwritten signature in black ink that reads "Dianne Nagy".

Dianne Nagy
Research Integrity and Compliance Officer

Appendix B

Facility Approval

 **Madeline Shields** mshields@hdbb.org
Fri 7/31/2020 13:38


To: [Hayley Skelton](#) [SSU Student](#)
Cc: [Madeline Shields](#) [mshields@hdbb.org](#) [Madeline Shields](#) [mshields@hdbb.org](#)

Thanks Hayley!
We are very excited to finally get this training scheduled and completed. Please let me know when Eugene had time.
Take care,

Madeline
...

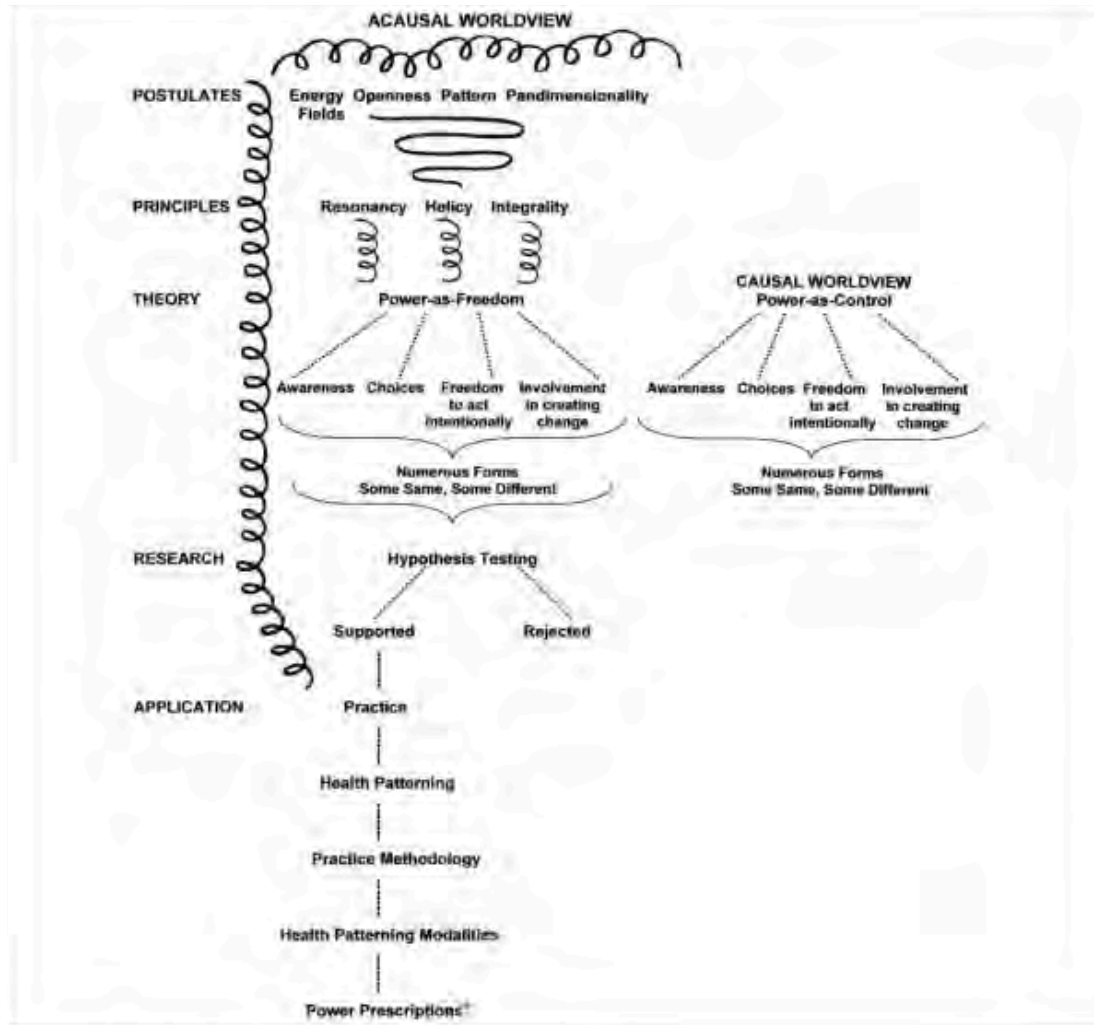
"Give your hands to SERVE and your hearts to LOVE" ~ Mother Teresa

Madeline Shields
Executive Director



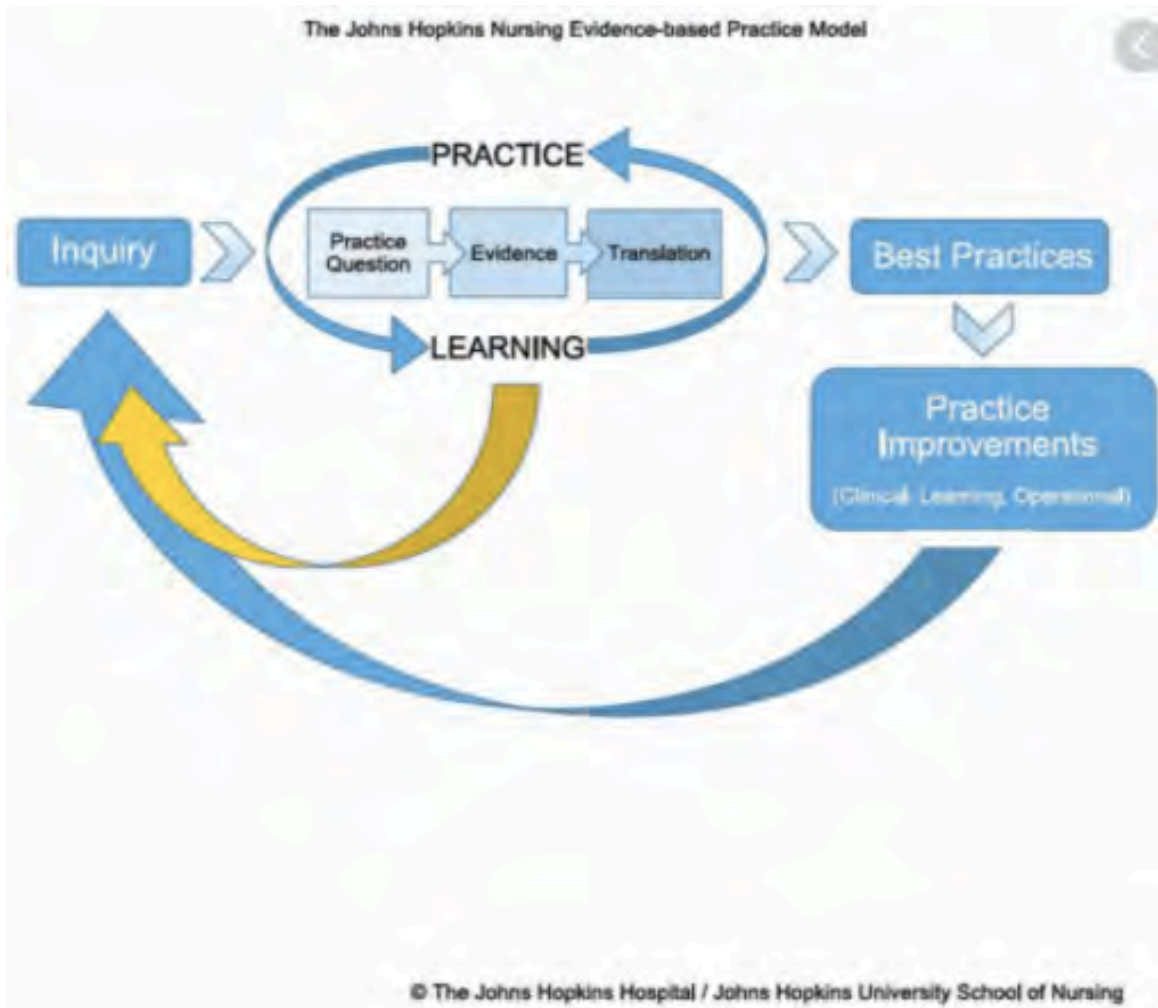
Appendix C

Barrett's Theory of Power as Knowing Participation in Change



Appendix D

The Johns Hopkins Nursing Evidence-Based Practice model and Permission to Use



Thank you for your submission. We are happy to give you permission to use the JHNEBP model and tools in adherence of our legal terms noted below:

- You may not modify the model or the tools without written approval from Johns Hopkins.
- All reference to source forms should include "©The Johns Hopkins Hospital/The Johns Hopkins University."
- The tools may not be used for commercial purposes without special permission.

If interested in commercial use or discussing changes to the tool, please email ijhn@jhmi.edu.

Downloads:

[JHNEBP Tools-Printable Version](#)

[JHNEBP Tools-Electronic Version](#)

Do you prefer hands-on learning?

We are offering a 5-day intensive Boot Camp where you will learn and master the entire EBP process from beginning to end. Take advantage of our retreat-type setting to focus on your project, collaborate with peers, and get the expertise and assistance from our faculty. Click [HERE](#) to learn more about EBP Boot Camp. Group rates available, email ijhn@jhmi.edu to inquire.

[Go back to the form](#)

Appendix E

Demographic Survey

Demographic Survey

The following information will remain anonymous. Please circle your answer, your honesty is appreciated.

- What gender do you identify with:
 - Male
 - Female
 - Prefer not to answer
- Select the group that your age falls into:
 - 0-18
 - 19-30
 - 31-45
 - 46-65
 - 65+
 - Prefer not to answer
- Please select the category that closely resembles your experience with the homeless population
 - Less than 1 year
 - 1-4 years
 - 5-10 years
 - 10-15 years
 - 15+ years
- Please select the category that exhibits your level of medical training:
 - I have previously or currently have a license in healthcare
 - I have been trained in basic life support (cardiopulmonary resuscitation)
 - I have no prior medical training
 - Prefer not to answer
- Please select the category that indicates the highest level of education you have received:
 - Some high school
 - High school diploma/GED
 - Trade school
 - Associate degree
 - Bachelor Degree
 - Master Degree
 - Doctorate Degree
 - Prefer not to answer
- With the Bishop Dudley Hospitality House, do you:
 - Volunteer
 - Work to live at the shelter
 - Part-time employee
 - Full-time employee
 - Prefer not to answer

Appendix F

Demographic Breakdown

Figure 1 shows that more staff members were full-time. This survey determined that six were trained in basic life support and eight have no prior medical or life support training. Medical training experience can be seen in Figure 2. Of individuals who filled out the pre-survey, one individual was between 0-18 years old, seven were between 19-30 years old, one was between 31-45 years old, four were between 46-65 years old, and one was older than 65 years. Age breakdown can be seen in Figure 3, with the majority of participants between 19-30 years old. Figure 4 depicts the breakdown of genders for the pre-survey. Nine females and five males participated in the survey.

Figure 1

Employment Status

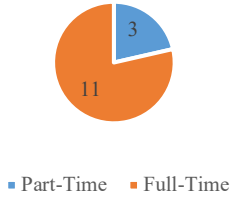


Figure 2

Medical Training

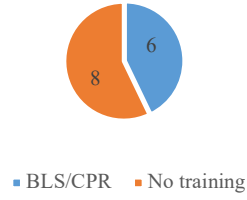


Figure 3

Age

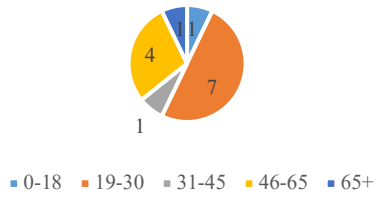


Figure 4

Gender

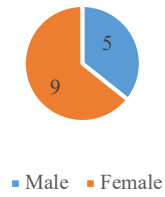
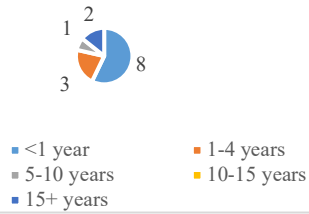


Figure 5

Experience



Appendix G

State Department of Health PowerPoint Teaching

THE NALOXONE PROJECT

SOUTH DAKOTA STATE TARGETED RESPONSE TO THE OPIOID CRISIS



WHAT BRINGS US TOGETHER?

Nationwide opioid epidemic
The Impact Realized in South Dakota

NALOXONE PROJECT STAFF AND TRAINERS

- Tom Martinec, Deputy Secretary Department of Health
- Amy Iversen-Pollreisz, Deputy Secretary Department of Social Services
- Tiffany Wolfgang, Director, Division of Behavioral Health
- Marty Link
 - Assistant Administrator, Office of Rural Health
 - Director of EMS and Trauma
- Eugene Taylor
 - DOH Consultant—Eastern SD Lead Educator
 - Critical Care Paramedic
- Shawn Fischer
 - DOH Consultant—Western SD Lead Educator
 - Critical Care Paramedic

OPIOID GRANTS

Department of Health
Department of Social Services



THE DEPARTMENT OF HEALTH CDC FUNDED OPIOID ABUSE GRANT

Prescription Drug Overdose: Data-Driven Prevention Initiative planning grant

- Grant Purpose
- To support and build efforts to track and understand the full impact of opioid use and abuse in SD
 - conduct a needs assessment;
 - complete a strategy plan to identify needs and strengthen South Dakota's capacity to prevent misuse/abuse of opioids; and
 - develop a data strategy to enhance and integrate current surveillance efforts for more accurate, timely data.

THE DEPARTMENT OF SOCIAL SERVICES CDC FUNDED OPIOID ABUSE GRANT

State Targeted Response to the Opioid Crisis Grant (Opioid STR)

- The purpose of the grant program is to:
- (a) Increase access to treatment;
 - (b) Supplement current opioid activities; and
 - (c) Support a comprehensive response to the opioid epidemic.

NALOXONE TRAINING AND DISTRIBUTION

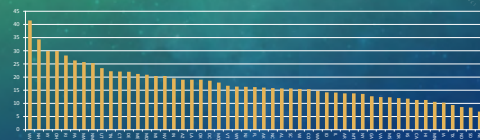
- Office of Rural Health—Lead Agency
 - Purpose:
 - Train and Equip First Responders on Naloxone Use
 - Hospital
 - EMS
 - Law Enforcement
 - Training through Eight Regional Sessions
 - Initial goal of training 500 responders between October and December of 2017

NALOXONE TEAM MEMBERS

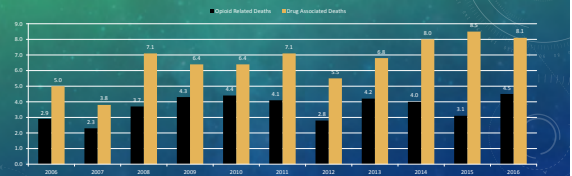
Department of Social Services
 Department of Health
 Office of Rural Health, EMS Program
 Project Super-Trainers
 Evaluation Team
 Data Collection
 Project Medical Director

CDC DEATH DATA BY STATE

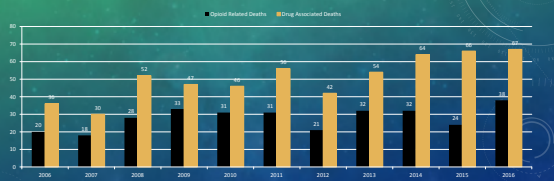
2015 Age-Adjusted Drug Overdose Death Rates per 100,000 by State



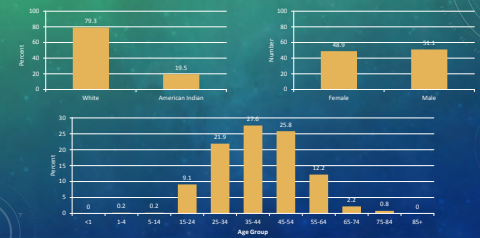
SD DOH VITAL STATISTICS: AGE ADJUSTED RATES OF DRUG OVERDOSES



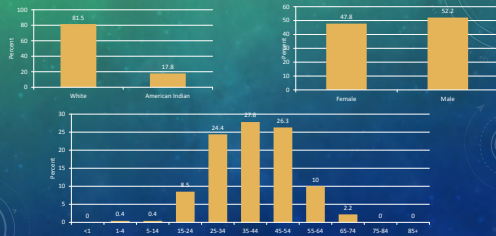
SD DOH VITAL STATISTICS: 2006-2015 DRUG ASSOCIATED DEATHS



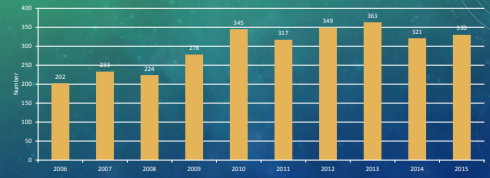
SD DOH VITAL STATISTICS: 2006-2015 DRUG ASSOCIATED DEATHS BY RACE, GENDER, AGE



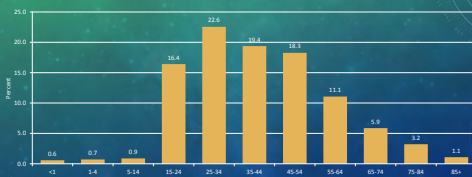
SD DOH VITAL STATISTICS: 2006-2015 OPIOID ASSOCIATED DEATHS BY RACE, GENDER, AGE



SD ASSOCIATION OF HEALTHCARE ORGANIZATIONS: HOSPITALIZATIONS ATTRIBUTABLE TO OR ASSOCIATE WITH DRUGS BY YEAR



SD ASSOCIATION OF HEALTHCARE ORGANIZATIONS: PERCENT OF HOSPITALIZATIONS OR ASSOCIATED WITH DRUGS BY AGE GROUP



DRUG-RELATED OVERDOSE DEFINED

- 34-20A-109. Definitions related to reporting person in need of emergency assistance for drug-related overdose. Terms used in §§ 34-20A-110 to 34-20A-113, inclusive, mean:
 - "Drug-related overdose," an acute condition, including mania, hysteria, extreme physical illness, coma, or death resulting from the consumption or use of a controlled substance, or another substance with which a controlled substance was combined, and that a person would reasonably believe to be a drug overdose that requires medical assistance.

Source: SL 2017, ch 154, § 1.


SOUTH DAKOTA STATUTES

- 34-20A-98. Possession and administration of opioid antagonists by first responders. Any first responder trained in compliance with § 34-20A-101 and acting under a standing order issued by a physician licensed pursuant to chapter 36-4 may possess and administer opioid antagonists to a person exhibiting symptoms of an opiate overdose.
- Source: SL 2015, ch 179, § 1.
- 34-20A-99. Opioid antagonist defined. For the purposes of §§ 34-20A-98 to 34-20A-103, inclusive, the term, opioid antagonist, means naloxone hydrochloride or any other similarly acting and equally safe drug approved by the federal Food and Drug Administration for the treatment of drug overdoses.
- Source: SL 2015, ch 179, § 2.
- 34-20A-100. First responder defined. For the purposes of §§ 34-20A-98 to 34-20A-103, inclusive, the term, first responder, includes:
 - A law enforcement officer as defined by subdivision 22-1-3(2)(2);
 - A driver and attendant responding to an emergency call as part of an ambulance service licensed pursuant to chapter 34-11; and
 - A firefighter.
- Source: SL 2015, ch 179, § 3.

SOUTH DAKOTA STATUTES


- 34-20A-101. Training of first responders. Each first responder authorized to administer an opioid antagonist shall be trained in the symptoms of an opiate overdose, the protocols and procedures for administration of an opioid antagonist, the symptoms of adverse responses to an opioid antagonist, and protocols and procedures to stabilize the patient if an adverse response occurs, and the procedures for storage, transport, and security of the opioid antagonist. The training shall comply with the criteria established pursuant to § 34-20A-102, and may be provided by the employer of first responders at the employer's discretion.
- Source: SL 2015, ch 179, § 4.
- 34-20A-102. Promulgation of rules for training, possession, and administration of opioid antagonists. The Board of Medical and Osteopathic Examiners shall promulgate rules, pursuant to chapter 1-26, establishing:
 - The criteria for training a first responder to comply with the provisions of § 34-20A-101; and
 - The requirements for a physician's issuance of a standing order to a first responder authorizing a prescription for the first responder's possession of an opioid antagonist and the protocols and procedures to be followed in administering an opioid antagonist.
- Source: SL 2015, ch 179, § 5.

SOUTH DAKOTA IMMUNITY STATUES



- 34-20A-103. Immunity from civil liability for injuries or death associated with administration of opioid antagonists. A physician who issues a standing order under the rules established pursuant to § 34-20A-102, a first responder acting under a standing order who administers an opioid antagonist in good faith compliance with the protocols for administering an opioid antagonist, and the first responder's employer, are not civilly liable for injuries, and may not be held to pay damages to any person, or the person's parents, siblings, children, estate, heirs, or devisees, for injuries or death associated with the administration of an opioid antagonist.
- Source: SL 2015, ch 179, § 6.
- 34-20A-104. Possession and administration of opioid antagonists by person close to person at risk for overdose. A person who is a family member, friend, or other close third party to a person at risk for an opioid-related drug overdose may be prescribed, possess, distribute, or administer an opioid antagonist that is prescribed, dispensed, or distributed by a licensed health care professional directly or by standing order pursuant to §§ 34-20A-104 to 34-20A-108, inclusive.
- Source: SL 2016, ch 174, § 1.

SOUTH DAKOTA IMMUNITY—CONTINUED




- 34-20A-105. Prescription for opioid antagonist. A licensed health care professional may, directly or by standing order, prescribe an opioid antagonist to a person at risk of experiencing an opioid-related overdose, or prescribe to a family member, friend, or other close third party person the health care practitioner reasonably believes to be in a position to assist a person at risk of experiencing an opioid-related overdose.
- Source: SL 2016, ch 174, § 2.
- 34-20A-106. Health care professional immunity from liability. A health care professional who is authorized to prescribe or dispense an opioid antagonist is not subject to any disciplinary action or civil or criminal liability for the prescribing or dispensing of an opioid antagonist to a person whom the health care professional reasonably believes may be in a position to assist or administer the opioid antagonist to a person at risk for an opioid-related drug overdose.
- Source: SL 2016, ch 174, § 3.

SOUTH DAKOTA IMMUNITY—CONTINUED



- 34-20A-110. Immunity from arrest or prosecution for reporting person in need of emergency medical assistance for drug-related overdose. No person may be arrested or prosecuted for any occurrence or failure of occurrence, including negligence, or otherwise using only the body, any controlled drug, or substance of that person constitutes any law enforcement or emergency medical services and reports to a person in need of emergency medical assistance as the result of a drug-related overdose. A person qualifies for the immunity provided in §§ 34-20A-109 to 34-20A-111, inclusive, only if:
 - (1) The evidence for the charge or prosecution was obtained as a result of the person seeking medical assistance for another person;
 - (2) The person seeks medical assistance for another person who is in need of medical assistance for an immediate health or safety concern; and
 - (3) The person seeking medical assistance for another person remains on the scene and cooperates with medical assistance and law enforcement personnel.
- Source: SL 2017, ch 154, § 2.
- 34-20A-111. Immunity from arrest or prosecution for reporting one's own need for emergency medical assistance for drug-related overdose. A person who experiences a drug-related overdose and is in need of medical assistance may not be arrested, charged, or prosecuted for any misdemeanor or felony offense of possession, distribution, acquisition, or otherwise using only the body any controlled drug or substance if that person contacts law enforcement or emergency medical services and reports that he or she is in need of medical assistance as the result of a drug-related overdose. A person qualifies for the immunities provided in this section only if the evidence for the charge or prosecution was obtained as a result of the drug-related overdose and the need for medical assistance.
- Source: SL 2017, ch 154, § 3.

ONE TIME IMMUNITY—NON FIRST RESPONDERS



- 34-20A-113. One-time immunity. Any person seeking medical assistance or who reports a person is in need of medical assistance shall only qualify once for immunity under §§ 34-20A-109 to 34-20A-112, inclusive.
- Source: SL 2017, ch 154, § 5.

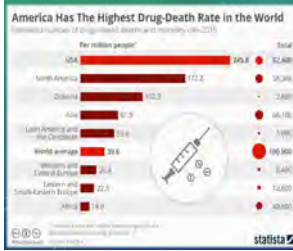


First Responder Overdose Response Training

LEARNING OBJECTIVES

- Understand the overdose crisis
- Know how opioids work and overdose risk factors
- Recognize an opioid overdose
- Respond to opioid overdose

AMERICA LEADS THE WORLD IN DRUG OVERDOSE DEATHS — BY A LOT



- America has about 4 percent of the world's population — but about 27 percent of the world's drug overdose deaths.
- Americans are relatively wealthy, so they can afford to buy drugs.
- In 1999, fewer than 17,000 people died from drug overdoses.
- In 2015, that grew to more than 52,000

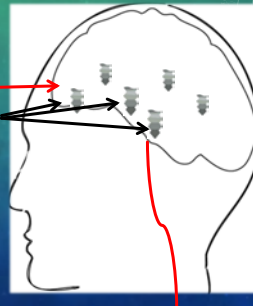
THE OPIOID EPIDEMIC, EXPLAINED

- In 2015, more Americans died of drug overdoses than in any other year on record — more than 52,000 deaths in just one year.
- That's higher than the more than 38,000 who died in car crashes, the more than 36,000 who died from gun violence, and the more than 43,000 who died due to HIV/AIDS during that epidemic's peak in 1995.

HOW DO OPIOIDS AFFECT BREATHING?

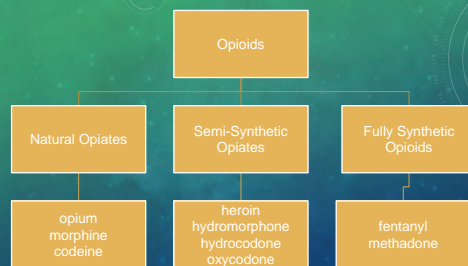
OVERDOSE
Respirations
Slow/Stop

Opioid
Opioid Receptors



HOW OVERDOSE OCCURS

- Breathing Slows
- Breathing Stops
- Lack of oxygen may cause brain damage
- Heart Stops
- **Death**



The term opiate is often used as a synonym for opioid, however the term *opiate* refers to just those opioids derived from the poppy plant either natural or semi-synthetic

WHICH MEDICATIONS ARE CONSIDERED OPIOIDS?

- **Morphine** is often used before and after surgical procedures to alleviate severe pain. It is often used as a palliative drug for end-stage terminal cancer.
- **Codeine** is often prescribed for mild pain, can be used to relieve coughs and severe diarrhea.
- **Oxycodone** products are most commonly prescribed for a variety of painful conditions, including dental and injury-related pain.
- **Hydrocodone** (OxyContin, Percocet)
- **Fentanyl**

WHAT ARE OPIOIDS/OPIATES?



- Medications that relieve pain
- Attach to the opioid receptors in the brain and reduce the intensity of pain signals reaching the brain.

HOW HAS THIS HAPPENED ?



- Back in the 1990s, doctors were persuaded to treat pain as a serious medical issue. There's a good reason for that: About 100 million US adults suffer from chronic pain
- Pharmaceutical companies took advantage of this concern. Through a **big marketing campaign**, they got doctors to prescribe products like OxyContin and Percocet in droves — even though the **evidence** for opioids treating long-term, chronic pain is **very weak**, (despite their effectiveness for short-term, acute pain), while the evidence that opioids cause harm in the long term is **very strong**.
- Painkillers proliferated, landing in the hands of not just patients but also teens rummaging through their parents' medicine cabinets, other family members and friends of patients, and the black market.
- As a result, opioid overdose deaths trended upward — sometimes involving opioids alone, other times involving drugs like **alcohol** and **benzodiazepines** (typically prescribed to relieve anxiety). By 2015, opioid overdose deaths totaled more than 33,000 — close to two-thirds of all drug overdose deaths.

HOW ARE WE TRYING TO CORRECT THIS?

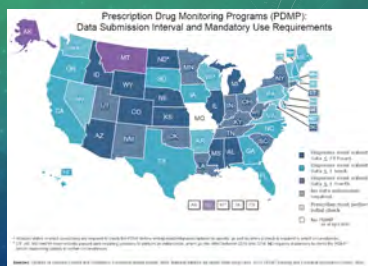


- Seeing the rise in opioid misuse and deaths, officials have cracked down on prescriptions painkillers.
- Physicians are **now being told** to give more thought to their prescriptions.
- Yet many people who lost access to painkillers prescriptions are still addicted.
- So some who could no longer obtain prescribed painkillers turned to cheaper, more potent opioids: heroin and **fentanyl**, a synthetic opioid that's often manufactured illegally for nonmedical uses.

SOUTH DAKOTA

- In 2016, South Dakota medical doctors prescribed supplies of painkillers that totaled more than 3.6 million days of Hydrocodone; more than 3.2 million days of Tramadol; more than 1 million days of Oxycodone; and nearly 700,000 days of Oxycodone with acetaminophen.
- Enough doses of opiates were prescribed to South Dakotans in 2015 to medicate every SD adult around-the-clock for 19 straight days
- Between 2004-2011: 82 Opioid Deaths (approximately 10 per year)
- 2013: 17 Opioid Deaths
- 2014: 16 Opioid Deaths
- Prescription Drug Monitoring Programs (PDMPs)

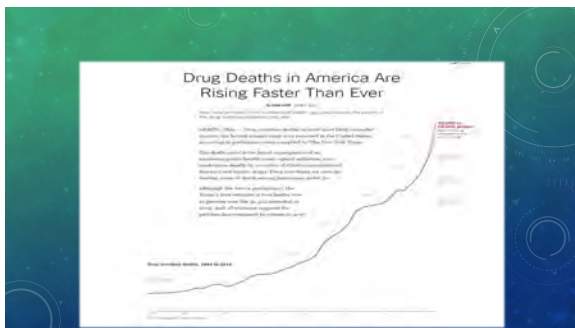
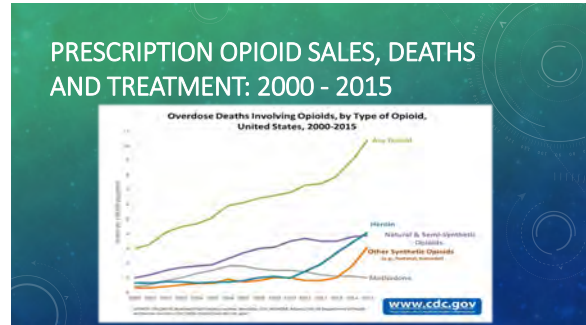
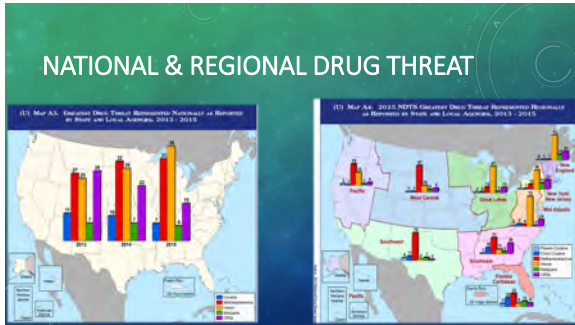
PRESCRIPTION DRUG MONITORING PROGRAM



Prescription Drug Monitoring Programs (PDMPs)

PRESCRIPTION DRUG MONITORING PROGRAM

What is a PDMP?	Who implements PDMPs?	What data do PDMPs collect?	Who can access PDMP data?
Electronic systems that digitally store, monitor & analyze controlled substance dispensing information	State Pharmacies or only Pharmacies	Prescriber Prescriber rate Dispenser info Schedules #/IV #/eqs	Prescribers Pharmacies Law enforcement State medical boards



DEA Official Blames Fentanyl-Heroin Mixture from Mexico for Recent Fatal Overdoses

The fentanyl-laced dope plaguing the northeastern United States is being made south of the border, according to officials.

FENTANYL

Fentanyl: a synthetic short-acting opioid; 40-50x more potent than pure heroin

Illicitly manufactured fentanyl is sold in the illicit market often mixed with heroin and/or cocaine as a combination product — with or without the user's knowledge — to increase its euphoric effects

Fentanyl-related overdoses can be reversed with naloxone, however a **higher dose or multiple number of doses** per overdose event may be required due to its high potency

WHY LAW ENFORCEMENT

- First on scene of an overdose
- Frequent interaction with high risk population
- With the right tools, police can make a public health impact
- Build bridges to active users and their social networks
- Overdose is a true crisis and police can help

RECOGNIZE OVERDOSE SIGNS/SYMPTOMS

- If a person is not breathing or is struggling to breathe: call out their name and rub knuckles of a closed fist over the sternum (Sternal Rub)
- Signs of drug use?
 - Pills, drugs, needles, cookers
- Look for overdose
 - Slow or absent breathing
 - Gasping for breath or a snoring sound
 - Pinpoint Pupils
 - Blue/Gray lips and nails
- Ensure EMS is en route/activated



JUST HIGH/OVERMEDICATED VS OVERDOSE

Just High/Overmedicated

- Small Pupils
- Drowsy, but arousable
 - Responds to sternal rub
- Speech is slurred
- Drowsy, but breathing
 - 8 or more times per minute

Stimulate and observe

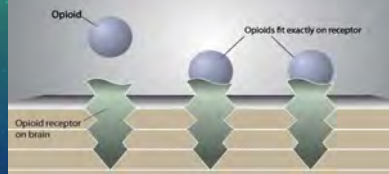
Overdose

- Small Pupils
- Not arousable
 - No response to sternal rub
- Not speaking
- Breathing slow or not at all
 - < 8 times per minute
 - May hear choking sounds or a gurgling/snoring noise
 - Blue/gray lips and fingertips

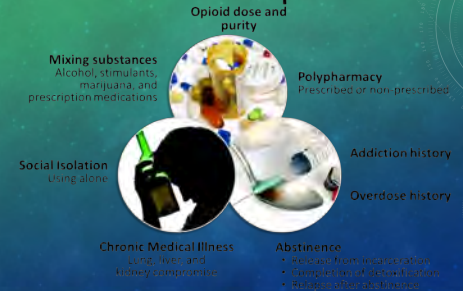
Rescue breathe + administer Naloxone

WHAT IS AN OPIOID OVERDOSE ?

The brain has many, many receptors for opioids. An overdose occurs when too much of any opioid, like heroin or Oxycotin, fits in too many receptors slowing and then stopping the breathing.



Common Risks for Opioid Overdose



REVOLVING DOOR???

- As it is for tobacco and weight loss, it takes multiple attempts before achieving success
 - By definition, addiction is a chronic condition where people make risky choices despite negative consequences
- With time, treatment works - people get better
- With treatment, crime is less common and therefore they interact with police less often
 - Law enforcement because its law enforcement is more likely to see the relapses than recovery

MEDICATIONS FOR OPIOID OVERDOSE AND TREATMENT

- Narcan = Naloxone
 - Reverses opioid overdoses
 - Short and Fast acting opioid blockers
- Vivitrol = Naltrexone
 - Treatment for opioid and alcohol addiction
- No Street Value because they cause withdrawal symptoms



MEDICATIONS FOR OPIOID OVERDOSE AND TREATMENT

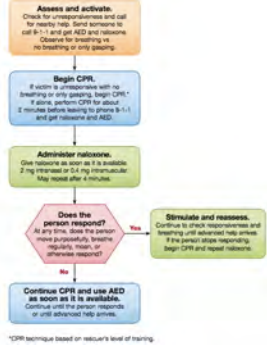
- Subutex = Buprenorphine + Naloxone
 - Treatment of opioid addiction
 - The naloxone is added to discourage injecting or sniffling
- Subutex = Buprenorphine Only
 - Treatment of opioid in pregnant women
- Methadone aka Dolophine and Methadose
 - Treatment of opioid addiction or pain

• These do have Street Value because they can relieve withdrawal symptoms



UPDATED OPIOID-ASSOCIATED LIFE THREATENING ALGORITHM

American Heart Association Guideline
October 2015

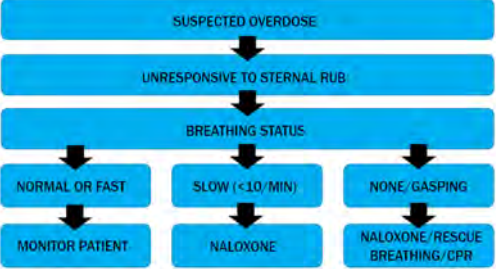


```

    graph TD
      A[Assess and activate. Check for unresponsiveness and call for nearby help. Send someone to call 9-1-1 and get AED and naloxone. Clear for breathing or no breathing or only gasping.] --> B[Begin CPR. If victim is unresponsive with no breathing or only gasping, begin CPR. If a pulse, perform CPR for about 2 minutes before leaving to phone 9-1-1 and get naloxone and AED.]
      B --> C[Administer naloxone. Give naloxone as soon as it is available. 2 mg intranasal or 0.1 mg intramuscular. May repeat after 4 minutes.]
      C --> D{Does the person respond? At any time, does the person move purposefully, breathe regularly, moan, or otherwise respond?}
      D -- No --> E[Continue CPR and use AED as soon as it is available. Continue until the person responds or until advanced help arrives.]
      D -- Yes --> F[Stimulate and reassess. Continue to check responsiveness and breathing until advanced help arrives. If the person stops responding, begin CPR and repeat naloxone.]
  
```

*CPR technique based on rescuer's level of training.

When to use Naloxone




```


    graph TD
      A[SUSPECTED OVERDOSE] --> B[UNRESPONSIVE TO STERNAL RUB]
      B --> C[BREATHING STATUS]
      C --> D1[NORMAL OR FAST]
      C --> D2[SLOW (<10/MIN)]
      C --> D3[NONE/GASPING]
      D1 --> E1[MONITOR PATIENT]
      D2 --> E2[NALOXONE]
      D3 --> E3[NALOXONE/RESCUE BREATHING/CPR]
  
```

AFTER ADMINISTERING NALOXONE

- Continue to provide rescue breathing with 1 ventilation every 5 seconds until EMS arrives
- After 3-5 minutes, if the patient is still unresponsive with slow or no breathing, administer another dose of Naloxone



IF VICTIM IS BREATHING, BUT UNRESPONSIVE PLACE IN *RECOVERY POSITION*



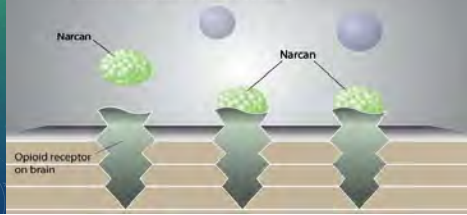
- Roll the victim onto their left side, keeping their head, neck, and spine in a straight line. Support the head with one hand and the back of the neck with the other.
- Place the arm closest to you at right angles to their body with the hand on the ground. Do your utmost to have the arm flat on the ground.
- Bring the arm furthest away from you across the chest and back the back of the hand against the victim's chest.
- With your other hand, grasp the far leg and draw the knee up and up to keep the foot on the ground.
- Keep their hand pressed against the floor and pull on the leg to roll the victim towards you and onto their side.
- Roll gently, supporting the head constantly.
- Adjust the upper leg so that from the top view, the leg is bent at right angles.
- Adjust the lower leg so that it is perpendicular to the upper leg.
- Ensure in the Recovery Position.

WHAT IS NARCAN (NALOXONE) ?

- Narcan knocks the opioids off the opioid receptors, blocking opioids from the opioid
- Temporarily takes away the "high", giving the person the chance to breathe
- Narcan works in 1 to 3 minutes and last 60 minutes
- Narcan can neither be abused nor cause an overdose effect
 - Only contraindication is known sensitivity, which is extremely rare
- Too much Narcan can cause withdrawal symptoms such as:
 - Nausea/Vomiting
 - Diarrhea
 - Chills
 - Muscle Discomfort
 - Disorientation
 - Combativeness

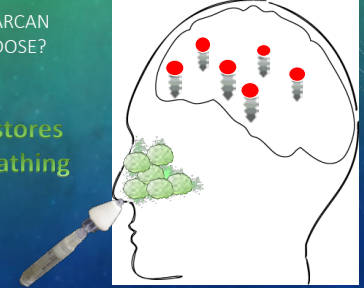
NALOXONE REVERSING OVERDOSE

Narcan has a stronger affinity to the opioid receptors than opioids like heroin or Percocet, so it knocks the opioids off the receptors for a short time. This allows the person to breathe again and reverses the overdose.



HOW DOES NARCAN AFFECT OVERDOSE?

Restores Breathing



CONSIDERATIONS TO ALWAYS REMEMBER

- Always keep the scene safety as your top priority
- Make sure EMS has been dispatched and keep them updated
- If the patient does not have a pulse, immediately begin CPR along with administration of Narcan
- If the patient is gasping or is not breathing, initiate CPR/Rescue breathing as necessary in addition to Naloxone administration
- Naloxone is quick (1-3 minutes) and typically lasts 60 minutes

ADMINISTERING NALOXONE


KEEP CALM AND CARRY NALOXONE



NASAL SPRAY NALOXONE



REMEMBER "FOUR RIGHTS" FOR MEDICATION ADMINISTRATION

- Right Patient (Opioid Overdose)
- Right Medication (Naloxone – Check for Clarity)
- Right Date (Check Expiration)
- Right Dose (Spray entire contents into nostril)

EXPECTED RESPONSE FROM NALOXONE

1. Gradually improves breathing and becomes responsive with 3 – 5 minutes
2. Immediately improves breathing, responsive and is in withdrawal
3. Starts breathing with 3-5 minutes but may remain unconscious
4. Does not respond to first dose and Naloxone must be repeated in 3 – 5 minutes (Continue to provide Rescue Breaths)
5. No response to multiple doses of Naloxone

NALOXONE STORAGE



- 59 – 77 degrees Fahrenheit
- Replace prior to expiration date

QUESTIONS AND ANSWERS

- Will Naloxone work on an alcohol overdose ?
 - No. Naloxone only works on opioids
- What if it is a crack/cocaine or speed/methamphetamine overdose ?
 - No. Naloxone only works on opioids
- What is the risk period for an overdose to reoccur after giving Naloxone ?
 - Depends on how long acting the opioid is and how much they took
- If the person isn't overdosing and I give Naloxone will it hurt the person ?
 - No. If in doubt give Naloxone

WHAT IF A PERSON REFUSES CARE AND TRANSPORT AFTER NALOXONE IS ADMINISTERED?

- Inform the person of the risk of re-overdosing
- Inform the person naloxone is only temporary
- If person still refuses consider the mechanism of injury or illness
 - Do you believe he/she can refuse treatment with a sound mind and clear understanding of the circumstances? **Remember they just overdosed!**
 - If no, the person can not refuse treatment

SPECIAL THANKS

To the Massachusetts Office of EMS
For their assistance and use of the Opioid content.

Appendix H

Naloxone Protocol

1. Dial 911.
2. Alert the shelter manager on duty.
3. Survey the scene for safety.
 - a. Do not touch any paraphernalia.
 - b. Do not leave the individual alone.
4. Put on gloves and a mask with a face shield
5. Move bystanders from the area and provide privacy with blankets.
6. Administer naloxone if the resident has one or more of the following symptoms
 - a. Small, constricted pupils
 - b. Falling asleep or unable to wake up
 - c. Shallow, slow breathing
 - d. Choking or gurgling sounds
 - e. Limp body
 - f. Pale, blue, cold skin
7. Place resident in the recovery position, on their side if they wake up with naloxone.
8. If no improvement in resident's symptoms, begin cardiopulmonary resuscitation.
9. Notify first responders of events.
10. Remove personal protective equipment and dispose in a tied garbage bag.
11. Wash hands and face thoroughly.

Appendix I

Opioid Overdose Attitudes Scale and Scoring

OPIOID OVERDOSE ATTITUDES SCALE

Please, answer the following questions thinking about how you would deal with an opioid overdose (opioids such as: heroin, methadone, morphine, oxycodone, tramadol, fentanyl or codeine).

Before you start answering the questions please read the following definitions:

Opioid Overdose: difficulty breathing, turning blue, lost consciousness unable to be roused, collapsing occurring in conjunction with opioid use (opioids such as: heroin, methadone, morphine, oxycodone, tramadol, fentanyl or codeine).

Naloxone: is a medicine (an kind of 'opioid antidote') commonly used by ambulance services to reverse the effects of an opioid overdose and bring the person back into consciousness.

This scale has been developed and validated by Anna Williams, John Strang and John Marsden from the Addictions Department, Institute of Psychiatry and Psychology and Neuroscience, King's College London. The psychometric properties were tested and published in: Williams AV, Strang J & Marsden J (2013). Development of Opioid Overdose Knowledge (OOKS) and Attitudes (OOAS) Scales for take-home naloxone training evaluation. Drug Alcohol Dependence. 132(1-2):383-6. Author's contact: anna.v.williams@kcl.ac.uk or annaw06@gmail.com

Continue

Please, mark how much you agree with each statement:	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
1. I already have enough information about how to manage an overdose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I am already able to inject naloxone into someone who had overdosed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I would be able to check that someone who had an overdose was breathing properly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I would be afraid of giving naloxone in case the person becomes aggressive afterwards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. If someone overdoses, I want to be able to help them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I would be afraid of doing something wrong in an overdose situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I would be reluctant to use naloxone for fear of precipitating withdrawal symptoms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Everyone at risk of witnessing an overdose should be given a naloxone supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I couldn't just watch someone overdose, I would have to do something to help	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. If someone overdoses, I would call an ambulance but I wouldn't be willing to do anything else	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I am going to need more training before I would feel confident to help someone who had overdosed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I would be able to perform mouth to mouth resuscitation to someone who had overdosed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Family and friends of drug users should be prepared to deal with an overdose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I would be able to perform chest compressions to someone who had overdosed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I would be concerned about calling emergency services in case the police come around	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, mark how much you agree with each statement:	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
16. If I tried to help someone who had overdosed, I might accidentally hurt them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. If I witnessed an overdose, I would call an ambulance straight a way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I would be afraid of suffering a needle stick injury if I had to give someone a naloxone injection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. If I saw an overdose, I would panic and not be able to help	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. If someone overdoses, I would know what to do to help them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I would be able to place someone who had overdosed in the recovery position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I would stay with the overdose victim until helps arrives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I would prefer not to help someone who has overdosed, because I'd feel responsible if they died	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I know very little about how to help someone who has overdosed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Needles frighten me and I wouldn't be able to give someone an injection of naloxone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I would be able to deal effectively with an overdose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. If I saw an overdose, I would feel nervous, but I would still take the necessary actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I will do whatever is necessary to save someone's life in an overdose situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OPIOID OVERDOSE ATTITUDES SCALE (OOAS): INSTRUCTIONS

⇒ THE OPIOID OVERDOSE ATTITUDES SCALE (OOAS)

The OOAS is a self-administered questionnaire which aims to evaluate attitudes towards managing an opioid overdose among addiction professionals, patients and their family members. It takes approximately 15 minutes to complete.

The OOAS has 28 items grouped into three sub-scales relating to overdose management: *Competence* (self-perceived ability to manage an overdose), *Concerns* (concerns on dealing with an overdose) and *Readiness* (willingness to intervene in an overdose situation).

- Competence 10 items: 1, 2, 3, 11, 12, 14, 20, 21, 24, 26
- Concerns 8 items: 4, 6, 7, 15, 16, 18, 23, 25
- Readiness 10 items: 5, 8, 9, 10, 13, 17, 19, 22, 27, 28

⇒ PSYCHOMETRIC PROPERTIES

The OOAS was adapted from the structure of the Drug and Drug Problem Perception Questionnaire (Watson et al., 2007). Its psychometric properties are described in Williams et al 2013. The scale has proved to be internally reliable (alpha coefficient 0.90) and robust over time (Intra-Class Correlations= 0.82). Competence, concerns and readiness items' scores fall in the fair-to-excellent range for test-retest reliability (ICC=0.92, 0.55 and 0.65, respectively).

The scale has also proven to have face, content and construct validity. Content validity was tested by comparing the scores of addiction professionals and family members of opioid users. Professionals reported significantly higher scores than family members. Concurrent validity was tested by correlating the OOAS score and the General Self-efficacy Scale, but no association was found.

⇒ SCORING

The OOAS is scored continuously using a 5-point Likert scale: completely disagree (1 point), disagree (2 points), unsure (3 points), agree (4 points) and completely agree (5 points).

Reverse negative items:

The following negative items need to be reversed before computing the total of scale points: 4, 6, 7, 9, 11, 15, 16, 17, 18, 23, 24, 25. You can use the 'record into same variables'

function of SPSS. Recode these items as: completely disagree (5 point), disagree (4 points), unsure (3 points), agree (2 points) and completely agree (1 points).

Totals Scores:

Once negative items have been reversed, add all items' points. The total scale points can range from 28 to 140 points.

Sub-scores

- Competence: add the points of the following items: 1, 2, 3, 11, 12, 14, 20, 21, 24, 26
- Concerns items: add the points of the following items: 4, 6, 7, 15, 16, 18, 23, 25
- Readiness items: add the points of the following items: 5, 8, 9,10, 13, 17, 19, 22, 27, 28

SPSS data-base and syntaxes can be obtained from the author (please see contact details below).

⇒ **DATA**

The table below presents OOAS values that have been recorded for drug users and family members:

	Family members (n=73) <i>Mean (SD)</i>			Drug Users (n=89) <i>Mean (SD)</i>		
	<i>Pre-training</i>	<i>Immediately post-training</i>	<i>3-months post-training</i>	<i>Pre-training</i>	<i>Immediately post-training</i>	<i>3-months post-training</i>
Total OOAS	97.99 (±12.7)	118.06 (±12.8)	116.25 (±9.7)	102.63 (±10.4)	118.80 (±13.9)	113.44 (±9.9)
<i>Competence</i>	28.28 (±7.1)	41.61 (±4.4)	40.83 (±3.4)	31.46 (±5.8)	42.48 (±5.4)	40.60 (±3.6)
<i>Concerns</i>	28.51 (±6.2)	32.71 (±6.5)	32.08 (±3.7)	28.87 (±4.7)	31.98 (±5.5)	30.44 (±3.9)
<i>Readiness</i>	41.21 (±4.9)	43.73 (±4.7)	43.34 (±4.1)	42.29 (±4.4)	44.34 (±5.1)	42.39 (±3.8)

The data is available in Anna Williams (2011) PhD thesis and it was published in Williams et al (2013, 2014):

Williams AV (2011). Training on overdose management and naloxone administration for family members and carers of opioid users: an evaluation of the short-term benefits using validated measures. Ph.D Thesis. King's College London: UK.

Williams AV, Marsden J & Strang J (2014), Training family members to manage heroin overdose and administer naloxone: randomized trial of effects on knowledge and attitudes. *Addiction*, 109: 250–259.

Appendix J

Opioid Overdose Knowledge Scale and Scoring

OPIOID OVERDOSE KNOWLEDGE SCALE

Please answer the following questions about heroin overdose (or an overdose from other opioids such as methadone, morphine, oxycodone, tramadol, fentanyl or codeine):

1. Which of the following factors increase the risk of a heroin (opioid) overdose? (tick all that apply)

- Taking larger than usual doses of heroin
- Switching from smoking to injecting heroin
- Using heroin with other substances, such as alcohol or sleeping pills
- Increase in heroin purity
- Using heroin again after not having used for a while
- Using heroin when no one else is present around
- A long history of heroin use
- Using heroin again soon after release from prison
- Using heroin again after a detox treatment

2. Which of the following are indicators of an opioid overdose? (tick all that apply)

- Having blood-shot eyes
- Slow/shallow breathing
- Lips, hands or feet turning blue
- Loss of consciousness
- Unresponsive
- Fitting
- Deep snoring
- Very small pupils
- Agitated behaviour
- Rapid heartbeat

3. Which of the following should be done when managing an opioid overdose? (tick all that apply)

- Call an ambulance
- Stay with the person until an ambulance arrives
- Inject the person with salt solution or milk
- Mouth to mouth resuscitation
- Give stimulants (e.g. cocaine or black coffee)
- Place the person in the recovery position (on their side with mouth clear)
- Give Naloxone (opioid antidote)
- Put the person in a bath of cold water
- Check for breathing
- Check for blocked airways (nose and mouth)
- Put the person in bed to sleep it off

4. What is naloxone used for?

- To reverse the effects of an opioid overdose (e.g. heroin, methadone)
- To reverse the effects of an amphetamine overdose
- To reverse the effects of a cocaine overdose
- To reverse the effects of any overdose
- Don't know

Continue 

5. How can naloxone be administered? (tick all that apply)

- Into a muscle (intramuscular)
- Into a vein (intravenous)
- Under the skin (subcutaneous)
- Swallowing- liquid
- Swallowing- tablet
- Don't Know

6. Where is the most recommended place for non-expert to administer naloxone?

- Outside of thighs or upper arms
- Any vein
- Heart
- By mouth
- Don't know

7. How long does naloxone takes to start having effect?

- 2-5 minutes
- 5-10 minutes
- 10-20 minutes
- 20-40 minutes
- Don't know

8. How long do the effects of naloxone last for?

- Less than 20 minutes
- About one hour
- 1 to 6 hours
- 6 to 12 hours
- Don't know

Please mark "true", "false" or "don't know"

	True	False	Don't Know
9. If the first dose of naloxone has no effect a second dose can be given	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. There is no need to call for an ambulance if I know how to manage an overdose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Someone can overdose again even after having received naloxone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The effect of naloxone is shorter than the effect of heroin and methadone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. After recovering from an opioid overdose, the person must not take any heroin, but it is ok for them to drink alcohol or take sleeping tablets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Naloxone can provoke withdrawal symptoms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This scale has been developed and validated by Anna Williams, John Strang and John Marsden from the Addictions Department, Institute of Psychiatry and Psychology and Neuroscience, King's College London. The psychometric properties were tested and published in: Williams AV, Strang J & Marsden J (2013). Development of Opioid Overdose Knowledge (OOKS) and Attitudes (OAS) Scales for take-home naloxone training evaluation. Drug Alcohol Dependence.132(1-2):383-6. Author's contact: anna.v.williams@kcl.ac.uk or annaw06@gmail.com

OPIOID OVERDOSE KNOWLEDGE SCALE (OOKS): INSTRUCTIONS

⇒ OPIOID OVERDOSE KNOWLEDGE SCALE (OOKS)

The OOKS aims to assess the level of knowledge of opioid overdose management among addiction professionals, patients and family members. It records knowledge about risk factors for having an opioid overdose, signs of an opioid overdose, actions to be taken in an overdose situation, naloxone effects and administration, adverse effects and aftercare procedures. The scale also identifies misinformation and myths about opioid overdose.

The OOKS has scores on four domains:

- *Risk*: risk factors for an overdose
- *Signs*: signs of an overdose
- *Action*: actions to be taken in an overdose
- *Naloxone Use*: naloxone effects, administration and aftercare procedures

It is a self-administered structured questionnaire which takes approximately 10 minutes to complete. The scale is formed of 4 multiple-choice questions, 4 forced-choice questions and 6 true/false statements.

⇒ PSYCHOMETRIC PROPERTIES

The psychometric properties of the OOKS are described in Williams et al (2013). The scale has proved to be internally reliable (alpha coefficient 0.83) and robust over time (Intra-Class Correlations= 0.90). The domain's reliability (ICC) are as follow: risks 0.87, signs 0.69, actions 0.53 and naloxone use 0.83.

The scale has also proven to have face, content and construct validity. Content validity was tested by comparing the scores of addiction professionals and family members of opioid users. Professionals reported significantly higher scores than family members. Concurrent validity was tested by correlating OOKS score and the Brief Overdose Recognition and Response Assessment (BORRA). The OOKS total score was positively correlated with the BORRA's Overdose Recognition ($r=0.5$, $P<0.01$) and BORRA's Naloxone Indication sub-scales ($r=0.44$, $P<0.05$).

⇒ SCORING

The OOKS items use a 'yes/no or don't know'; or 'true/false or don't know' response format. Each correct answer scores one point. 'Don't know' and incorrectly marked responses (mistakes) are scored zero. Total score range: 0-45 points.

Total Score (45 items):

- One point if marked (33 Correct/True items): 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h, 1i, 2b, 2c, 2d, 2e, 2g, 2h, 3a, 3b, 3d, 3f, 3g, 3i, 3j, 4a, 5a, 5b, 5c, 6a, 7a, 8b, 9T, 11T, 12T, 14T
- One point if NOT marked (12 Incorrect/False items): 2a, 2f, 2i, 2j, 3c, 3e, 3h, 3k, 5d, 5e, 10F, 13F. You might chose to use the 'record into same variables' function of SPSS and inverse the values of these items.

Risk (9 items):

- One point if marked: 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h, 1i,

Signs (10 items):

- One point if marked: 2b, 2c, 2d, 2e, 2g, 2h
- One point if NOT marked: 2a, 2f, 2i, 2j

Action (11 items):

- One point if marked: 3a, 3b, 3d, 3f, 3g, 3i, 3j,
- One point if NOT marked: 3c, 3e, 3h, 3k,

Naloxone Use (15 items):

- One point if marked: 4a, 5a, 5b, 5c, 6a, 7a, 8b, 9T, 11T, 12T, 14T
- One point if NOT marked: 5d, 5e, 10F, 13F

SPSS data-base and syntaxes can be obtained from the author (please see contact details below).

⇒ **DATA**


The table below presents OOAS values that have been recorded for drug users and family members:


	Family members (n=73)			Drug Users (n=89)		
	Mean (SD)			Mean (SD)		
	Pre-training	Immediately post-training	3-months post-training	Pre-training	Immediately post-training	3-months post-training
Total OOKS	30.41 (±7.1)	39.20 (±3.1)	37.30 (±4.5)	33.14 (±4.6)	39.43 (±3.5)	39.05 (±3.5)
<i>Risks</i>	6.79 (±2.27)	8.41 (±1.4)	7.45 (±1.7)	7.18 (±1.8)	8.25 (±1.1)	7.85 (±1.4)
<i>Signs</i>	6.38 (±1.9)	7.89 (±1.5)	7.48 (±1.4)	7.24 (±1.5)	8.42 (±1.4)	8.08 (±1.2)
<i>Action</i>	9.46 (±1.6)	10.10 (±1.48)	10.25 (±1.1)	9.86 (±0.8)	10.42 (±0.9)	10.64 (±0.5)
<i>Naloxone</i>	7.77 (±3.7)	12.79 (±1.4)	12.21 (±1.8)	8.83 (±2.8)	12.33 (±1.7)	12.48 (±1.7)


The data is available in Anna Williams (2011) PhD thesis and it was published in Williams et al (2013, 2014):




Appendix K

OOAS and OOKS Permission to Use

 Williams, Anna <anna.v.williams@kcl.ac.uk>
Wed 7/29/2020 06:21
To: Rasmussen, Hayley Elizabeth - SDSU Student

 OOAS Instructions.doc
43 KB

 OOKS Instructions.doc
50 KB

 Show all 4 attachments (220 KB)  Download all  Save all to OneDrive > South Dakota State University - SDSU

Dear Elizabeth

You have permission to use the scales.
Please find attached some information.

Best wishes,
Anna

[Dr Anna V. Williams](#)

[Program leader International Master of Science in Addiction Studies \(IPAS\)](#)
[Teaching Fellow and Honorary Lecturer at King's College London](#)

[Addictions Department, Institute of Psychiatry Psychology and Neuroscience](#)
[King's College London](#)
[4, Windsor Walk](#)
[Denmark Hill](#)
[London, UK](#)

Appendix L

OOAS Average Score Breakdown

Quiz Component	Pre-	Immediate Post-	Three Month Post-
Competence	23.07	30.66	29.43
Concern	29.50	30.17	30.71
Readiness	32.14	30.08	31.71

Quiz Component	Pre-Immediate	Pre vs. 3 months	Immediate vs. 3 months
Competence	p= 0.00075	p=0.017	p= 0.31
Concern	p=0.35	p= 0.38	p=0.5
Readiness	p=0.09	p=0.37	p=0.25

Appendix M

OOKS Average Score Breakdown

Quiz Component	Pre-	Immediate Post-	Three-Month Post-
Risk	7.29 (SD +/- 2.70)	8.64 (SD +/- 0.75)	8.76 (SD +/- 0.76)
Signs	7.64 (SD +/- 1.78)	7.21 (SD +/- 1.05)	7.57 (SD +/- 0.53)
Action	9.14 (SD +/- 2.28)	9.93 (SD +/- 0.92)	10.43 (SD +/- 0.53)
Naloxone	4.43 (SD +/- 2.82)	7.07 (SD +/- 3.85)	4.71 (SD +/- 0.95)

Quiz Component	Pre vs. Immediate	Pre vs. 3-Month	Immediate vs. 3-Month
Risk	p=0.03	p=0.13	p=0.35
Signs	p=0.34	p=0.37	p=0.39
Action	p=0.13	P=0.13	p=0.10
Naloxone	p= 0.02	p=0.41	p= 0.08