Overdose Prevention Literature Review

Recently published research on overdose prevention, naloxone and related topics.

ADAI ALCOHOL & DRUG ABUSE INSTITUTE

WA State Project to Prevent Prescription Drug/Opioid Overdose (WA-PDO)

I. FROM LOCAL RESEARCHERS

Engaging an unstably housed population with low-barrier buprenorphine treatment at a syringe services program: Lessons learned from Seattle, Washington. Hood JE, Banta-Green CJ, Duchin JS, Breuner J, Dell W, Finegood B, Glick SN, Hamblin M, Holcomb S, Mosse D, Oliphant-Wells T, Shim MM. Subst Abus. 2019 Aug 12:1-9. doi: 10.1080/08897077.2019.1635557. [Epub ahead of print]

BACKGROUND: Clinic-imposed barriers can impede access to medication for opioid use disorder (MOUD). We evaluated a low-barrier buprenorphine program that is co-located with a syringe services program (SSP) in Seattle, Washington, USA.

METHODS**:** We **analyzed medical record data corresponding to patients who enrolled into the buprenorphine program in its first year of operation**. We used descriptive statistics and tests of association to longitudinally evaluate retention, cumulative number of days buprenorphine was prescribed, and toxicology results.

RESULTS: **Demand for buprenorphine among SSP clients initially surpassed programmatic capacity**. Of the 146 enrolled patients, the majority (82%) were unstably housed. Patients were prescribed buprenorphine for a median of 47 days (interquartile range [IQR] = 8-147) in the 180 days following enrollment. **Between the first and sixth visits, the percentage of toxicology tests that was positive for buprenorphine significantly increased** (33% to 96%, $P < .0001$) **and other opioids significantly decreased** (90% to 41%, $P < .0001$) and plateaued thereafter. Toxicology test results for stimulants, benzodiazepines, and barbiturates did not significantly change.

CONCLUSIONS: **SSP served as an effective point of entry for a low-barrier MOUD program**. A large proportion of enrolled patients demonstrated sustained retention and reductions in opioid use, despite housing instability and polysubstance use.

II. NALOXONE AND OVERDOSE PREVENTION

Cost-effectiveness analysis of alternative naloxone distribution strategies: First responder and lay distribution in the United States. Townsend T, Blostein F, Doan T, Madson-Olson S, Galecki P, Hutton DW. Int J Drug Policy. 2019 Aug 19. pii: S0955-3959(19)30209-9. doi: 10.1016/j.drugpo.2019.07.031. [Epub ahead of print]

BACKGROUND**:** The U.S. is facing an unprecedented number of opioid-related overdose deaths, and an array of other countries have experienced increases in opioid-related fatalities. In the U.S., naloxone is increasingly distributed to first responders to improve early administration to overdose victims, but its cost-effectiveness has not been studied. Lay distribution, in contrast, has been found to be cost-effective, but rising naloxone prices and increased mortality due to synthetic

opioids may reduce cost-effectiveness. **We evaluate the cost-effectiveness of increased naloxone distribution to (a) people likely to witness or experience overdose ("laypeople"); (b) police and firefighters; (c) emergency medical services (EMS) personnel; and (d) combinations of these groups.**

METHODS: We use a decision-analytic model to analyze the cost-effectiveness of eight naloxone distribution strategies. We use a lifetime horizon and conduct both a societal analysis (accounting for productivity and criminal justice system costs) and a health sector analysis. We calculate: the ranking of strategies by net monetary benefit; incremental cost-effectiveness ratios; and number of fatal overdoses.

RESULTS: **High distribution to all three groups maximized net monetary benefit and minimized fatal overdoses; it averted 21% of overdose deaths compared to minimum distribution.** High distribution to laypeople and one of the other groups comprised the second and third best strategies. **The majority of health gains resulted from increased lay distribution.** In the societal analysis, every strategy was cost-saving compared to its next-best alternative; cost savings were greatest in the maximum distribution strategy. In the health sector analysis, all undominated strategies were cost-effective. Results were highly robust to deterministic and probabilistic sensitivity analysis.

CONCLUSIONS: **Increasing naloxone distribution to laypeople and first responder groups would maximize health gains and be cost-effective.** If feasible, communities should distribute naloxone to all groups; otherwise**, distribution to laypeople and one of the first responder groups should be emphasized**.

Naloxone urban legends and the opioid crisis: what is the role of public health? Crabtree A, Masuda JR. BMC Public Health. 2019 May 30;19(1):670. doi: 10.1186/s12889-019-7033-5.

ABSTRACT: As the overdose crisis in North America continues to deepen, public health leaders find themselves responding to sensational media stories, many of which carry forms and themes that mark them as urban legends. **This article analyzes one set of media accounts - stories of misuse of naloxone, an opioid overdose antidote distributed to people who use drugs - through the lens of social science scholarship on urban legends. We suggest that these stories have met a public need to feel a sense of safety in uncertain times, but function to reinforce societal views of people who use drugs as undeserving of support and resources.** Our field has a duty to speak out in favour of evidence-based programs that support the health of people who use drugs, but the optimal communication strategies are not always clear. Drawing attention to the functions and consequences of urban legends can help frame public health communication in a way that responds to needs without reinforcing prejudices, with application beyond naloxone to the other urban legends that continue to emerge in response to this crisis.

FREE FULL TEXT HERE: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6543555/

Narratives of people who inject drugs on factors contributing to opioid overdose. Chang JS, Behar E, Coffin PO. Int J Drug Policy. 2019 Aug 20;74:26-32. doi: 10.1016/j.drugpo.2019.07.038. [Epub ahead of print]

BACKGROUND: In recent years, there has been increasing national and global attention to opioid overdoses. In San Francisco, it is estimated that the population of people who inject drugs (PWID) has more than doubled in the past ten years. The risk factors for opioid overdose have been examined closely, but firsthand accounts of PWID who have experienced overdoses are less documented. **In this paper, we use two theories - lay expertise and structural vulnerabilities - as frameworks to frame and qualitatively examine the narratives of PWID surrounding their recent overdose experiences.**

METHODS: Audio-recorded semi-structured open-ended motivational interviewing counseling sessions were conducted with PWID in San Francisco who have experienced at least one non-fatal overdose event (N = 40). Participants discussed the context of recent opioid overdoses, either witnessed or personally experienced, focusing on their perceptions of unique contributing factors. Interview data were coded and analysed using ATLAS.ti. We used a thematic content analysis approach to qualitatively analyze data queries and generate themes. We used theories of structural vulnerability and lay expertise to frame the analysis.

RESULTS: **Using quotes from the participants, we report four central themes that contributed to participants' overdose experiences: 1) Social Dynamics and Opioid Expertise; 2) Uncertain Supply, Composition, Source; 3) Balancing Polysubstance Use, and 4) Emotional Pain.**

CONCLUSION: **As PWID described their overdose experiences, many factors that contributed to their overdoses were situated at the structural level. The everyday, lived experiences of PWID often competed or conflicted with public health messages and approaches.** The accumulated expertise of PWID about everyday risk factors can be leveraged by public health practitioners to inform and improve overdose prevention interventions and messages.

Relay: A Peer-Delivered Emergency Department-Based Response to Nonfatal Opioid Overdose. Welch AE, Jeffers A, Allen B, Paone D, Kunins HV. Am J Public Health. 2019 Oct;109(10):1392-1395. doi: 10.2105/AJPH.2019.305202. Epub 2019 Aug 15.

ABSTRACT: Relay, a peer-delivered response to nonfatal opioid overdoses, provides overdose prevention education, naloxone, support, and linkage to care to opioid overdose survivors for 90 days after an overdose event. From June 2017 to December 2018, Relay operated in seven New York City emergency departments and enrolled 649 of the 876 eligible individuals seen (74%). **Preliminary data show high engagement, primarily among individuals not touched by harm reduction or naloxone distribution networks. Relay is a novel and replicable response to the opioid epidemic.**

Justice involvement patterns, overdose experiences, and naloxone knowledge among men and women in criminal justice diversion addiction treatment. Gicquelais RE, Mezuk B, Foxman B, Thomas L, Bohnert ASB. Harm Reduct J. 2019 Jul 16;16(1):46. doi: 10.1186/s12954-019-0317-3

BACKGROUND: Persons in addiction treatment are likely to experience and/or witness drug overdoses following treatment and thus could benefit from overdose education and naloxone distribution (OEND) programs. **Diverting individuals from the criminal justice system to addiction treatment represents one treatment engagement pathway, yet OEND needs among these individuals have not been fully described.**

METHODS**:** We characterized justice involvement patterns among 514 people who use opioids (PWUO) participating in a criminal justice diversion addiction treatment program during 2014-2016 using a gender-stratified latent class analysis. We described prevalence and correlates of naloxone knowledge using quasi-Poisson regression models with robust standard errors.

RESULTS: **Only 56% of participants correctly identified naloxone as an opioid overdose treatment despite that 68% had experienced an overdose and 79% had witnessed another person overdose.** We identified two latent justice involvement classes: low involvement (20.3% of men, 46.5% of women), characterized by older age at first arrest, more past-year arrests, and less time incarcerated; and high involvement (79.7% of men, 53.5% of women), characterized by younger age at first arrest and more lifetime arrests and time incarcerated. Justice involvement was not associated with naloxone knowledge. Male participants who had personally overdosed more commonly identified naloxone as an overdose treatment after adjustment for age, race, education level, housing status, heroin use, and injection drug use (prevalence ratio [95% confidence interval]: men 1.5 [1.1-2.0]).

CONCLUSIONS**: All PWUO in criminal justice diversion programs could benefit from OEND given the high propensity to experience and witness overdoses and low naloxone knowledge across justice involvement backgrounds and genders.**

FREE FULL TEXT HERE https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6636104/

One-Year Mortality of Patients After Emergency Department Treatment for Nonfatal Opioid Overdose. Weiner SG, Baker O, Bernson D, Schuur JD. Ann Emerg Med. 2019 Jun 19. pii: S0196-0644(19)30343-9. doi: 10.1016/j.annemergmed.2019.04.020. [Epub ahead of print]

OBJECTIVE: Despite the increased availability of naloxone, death rates from opioid overdose continue to increase. **The goal of this study is to determine the 1-year mortality of patients who were treated for a nonfatal opioid overdose in Massachusetts emergency departments.**

METHODS: This was a retrospective observational study of patients from 3 linked statewide Massachusetts data sets: a master demographics list, an acute care hospital case-mix database, and death records. Patients discharged from the ED with a final diagnosis of opioid overdose were included. The primary outcome measure was death from any cause within 1 year of overdose treatment.

RESULTS: During the study period, 17,241 patients were treated for opioid overdose. Of the 11,557 patients who met study criteria**, 635 (5.5%) died within 1 year, 130 (1.1%) died within 1 month,**

and 29 (0.25%) died within 2 days. Of the 635 deaths at 1 year, 130 (20.5%) occurred within 1 month and 29 (4.6%) occurred within 2 days.

CONCLUSION: **The short-term and 1-year mortality of patients treated in the ED for nonfatal opioid overdose is high. The first month, and particularly the first 2 days after overdose, is the highest-risk period.** Patients who survive opioid overdose should be considered high risk and receive interventions such as being offered buprenorphine, counseling, and referral to treatment before ED discharge.

III. FOCUS ON PHARMACIES

Leveraging the role of community pharmacists in the prevention, surveillance, and treatment of opioid use disorders. Bach P, Hartung D. Addict Sci Clin Pract. 2019 Sep 2;14(1):30. doi: 10.1186/s13722-019-0158-0.

ABSTRACT: The global rise in opioid-related harms has impacted the United States severely. Current efforts to manage the opioid crisis have prompted a re-evaluation of many of the existing roles in the healthcare system, in order to maximize their individual effects on reducing opioid-associated morbidity and preventing overdose deaths. As one of the most accessible healthcare professionals in the US, pharmacists are well-positioned to participate in such activities. Historically, US pharmacists have had a limited role in the surveillance and treatment of substance use disorders. **This narrative review explores the literature describing novel programs designed to capitalize on the role of the community pharmacist in helping to reduce opioid-related harms, as well as evaluations of existing practices already in place in the US and elsewhere around the world. Specific approaches examined include strategies to facilitate pharmacist monitoring for problematic opioid use, to increase pharmacy-based harm reduction efforts (including naloxone distribution and needle exchange programs), and to involve community pharmacists in the dispensation of opioid agonist therapy (OAT).** Each of these activities present a potential means to further engage pharmacists in the identification and treatment of opioid use disorders (OUDs). Through a careful examination of these approaches, we hope that new strategies can be adopted to leverage the unique role of the community pharmacist to help reduce opioid-related harms in the US.

Pharmacist roles, training, and perceived barriers in naloxone dispensing: A systematic review. Thakur T, Frey M, Chewning B. J Am Pharm Assoc (2003). 2019 Jul 29. pii: S1544-3191(19)30320-6. doi: 10.1016/j.japh.2019.06.016. [Epub ahead of print]

OBJECTIVES: Pharmacists are well positioned to identify patients at risk of overdose, dispense naloxone, and counsel patients on appropriate use. In response to growing numbers of opioid-related deaths, many states have issued standing orders allowing pharmacists to dispense naloxone without a prescription. **This systematic review examines the current state of naloxone use and dispensing regarding (1) roles for pharmacists dispensing naloxone, (2) barriers to their dispensing naloxone, and (3) pharmacist training to dispense naloxone.**

METHODS: PubMed, Cinahl Plus, and Cochrane review databases were searched with the use of the terms "pharmacist OR pharmacy" AND "naloxone." Included for review were peer-reviewed original

research studies conducted in the U.S. in the past 5 years. The preliminary search generated 155 studies, including 50 duplicate studies which were removed. From the remaining 105 studies, 33 were included that addressed pharmacist naloxone dispensing roles, barriers and facilitators to dispensing, or training for pharmacists. Authors, publication year, study title, study objective, method, outcomes, and conclusions were extracted for all studies.

RESULTS: Out of 33 studies, 14 focused on pharmacists' roles in naloxone dispensing, 9 on barriers, and 10 on training pharmacists for dispensing naloxone. The review found **that most states permit major naloxone dispensing roles for pharmacists, but pharmacists are often underutilized without programs to support their roles. A key barrier to pharmacist naloxone dispensing is limited pharmacist training to identify and educate patients at risk of overdose.**

CONCLUSION: **Although pharmacists have the legal opportunity to educate patients and dispense naloxone, barriers have limited their addressing naloxone with patients. There is a need for more intervention studies and in-depth understanding of pharmacist perspectives on barriers, training, and professional roles to facilitate tailored approaches for increasing pharmacist confidence in naloxone dispensing and consultation.**

Pharmacists' attitudes toward dispensing naloxone and medications for opioid use disorder: A scoping review of the literature. Muzyk A, Smothers ZPW, Collins K, MacEachern M, Wu LT. Subst Abus. 2019 Aug 16:1-8. doi: 10.1080/08897077.2019.1616349. [Epub ahead of print]

BACKGROUND: Pharmacists are on the frontline caring for patients at risk of an opioid overdose and for patients with an opioid use disorder (OUD). Dispensing naloxone and medications for OUD and counseling patients about these medications are ways pharmacists can provide care. Key to pharmacists' involvement is their willingness to take on these practice responsibilities.

METHODS: **The purpose of this scoping review is to identify, evaluate, and summarize published literature describing pharmacists' attitudes toward naloxone and medications for OUD, i.e., methadone, buprenorphine, and naltrexone.** All searches were performed on December 7, 2018, in 5 databases: Embase.com, PubMed.gov, Cumulative Index to Nursing and Allied Health Literature (CINAHL) via EBSCOhost, Cochrane Central Register of Controlled Trials via Wiley, and Clarivate Web of Science. Articles included original research conducted in the United States, described attitude-related language toward naloxone and medications for OUD, and pharmacists.

RESULTS: A total of 1323 articles were retrieved, 7 were included. Five studies reported on pharmacists' attitudes toward naloxone dispensing, 1 study reported on attitudes toward naloxone, buprenorphine, and buprenorphine/naloxone, and 1 reported on attitudes toward buprenorphine/naloxone. Respondents were diverse, including pharmacists from different practice specialties. **Studies found that pharmacists agreed with a naloxone standing order, believed that naloxone should be dispensed to individuals at risk of an opioid overdose, and were supportive of dispensing buprenorphine.** A minority of pharmacists expressed negative attitudes. Barriers cited to implementation included education and training, workflow, and management support.

CONCLUSIONS: **Pharmacists were positive in their attitudes toward increased practice responsibilities for patients at risk of an opioid overdose or with an OUD. Pharmacists must receive education and training to be current in their understanding of OUD medications, and they must be supported in order to provide effective care to this patient population.**