“I DON’T HAVE DEATHS ON MY CONSCIENCE”: IMPACTS OF A PEER-DELIVERED NALOXONE PROGRAM ON A COMMUNITY OF INTRAVENOUS DRUG USERS IN EUGENE, OREGON

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The United States is in the midst of an epidemic of overdose deaths. In response, harm reduction programs commonly distribute the opioid antagonist naloxone directly to drug users so that they can act as first responders to overdose. When injected, naloxone reverses respiratory depression and can save the life of a person overdosing on opioids. As evidence for the effectiveness of these programs at reducing deaths continues to be collected, little research has been conducted into the impact of serving in this role on drug users themselves. To better understand the lived experiences of drug users with naloxone, semi-structured interviews were conducted with seventeen syringe exchange participants who currently carry naloxone. Interviews revealed that carrying and administering naloxone is empowering for many drug users, because it contrasts with the powerlessness they may feel in other aspects of their lives. Peer administrators use naloxone in a way that reinforces the community of care among drug users. This aligns with the goals of harm reduction programs, which seek to empower drug users to make choices to improve their lives, without abstinence as the ultimate goal. Future programs distributing naloxone to drug users should be aware of its potential not only to save lives, but to increase drug users' self-confidence and strengthen the network of overdose care in their communities.

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I. Case Study

Jason is a popular figure among the community of drug users in Eugene, Oregon. As he arrived at the needle exchange, he was greeted by the other clients with hugs and fist bumps. “Good to see you man”, “Where have you been?”, “How’s it hanging with you?”. Jason caught up with old friends while standing in line to refill his naloxone prescription. Tall, dressed in black with a shaved head, Jason has a friendly, easygoing demeanor. But through our entire conversation, he never broke eye contact as he spoke about his experiences with heroin, overdose, and repeated loss.

Jason has had extensive experience with drug overdose. He recalls one of the earliest waves of fentanyl-related deaths in the United States, in 2006 before most Americans were familiar with the term “opioid crisis”. This is when he first learned about the opioid antagonist naloxone, which he refers to by its brand name, Narcan:

> There was that fentanyl-laced china white epidemic back in Chicago. And they were driving around in the Salvation Army truck passing out bottles of Narcan. They were announcing on the evening news to use a buddy system, not to go out and get high by yourself. They were actually interviewing junkies and stuff.

At least one hundred people died of fentanyl-related overdoses in Chicago in just a few months in 2006 (Boddiger 2006). At that time many people who used opioids had been given naloxone by medical personnel when they overdosed. However, it was still uncommon in the United States for drug users to carry the medication themselves, or even for a doctor to explain to them what it was. In the midst of an overdose crisis, public health authorities saw the necessity of putting naloxone, which can save the life of a person overdosing on opioids, into the hands of drug users.

Jason moved to Eugene, Oregon in 2008 with his son, saying he didn't want to raise him in Chicago. Since then, Jason has been present at many overdoses, lost family and friends to overdose, and endured stints of homelessness, though he now has a stable place to live. In September 2018, three weeks prior to this interview, Lane County experienced a spike in overdoses attributed by law enforcement to "China white". This time Jason himself, as well as many other drug users in his community, carried naloxone and were trained to use it. Jason revived an overdosing peer with naloxone during this recent spike, and his account provides a window both into the seriousness of the situation for the users involved, and the response of a community of drug users in which "Narcan" has become ubiquitous.

As is typical with overdoses involving fentanyl, Jason described the onset as very sudden:

> I looked back at him and his eyes were rolled back in his head. He just fell over and kinda seized up, started foaming and I got on my phone and started hitting on my people, "Who's got Narcan?". I went to one guy that was down the street cause I knew he had Narcan. He had just used it on somebody earlier that day. The second person down the other street, he just used his on someone earlier that day! So yeah one of my buddies ran about three blocks, the other way and picked up a nasal kit, he ran about three blocks, ran it to me, I ran the rest of the way back, ran up and just as I kneeled down to administer the dose I could see the cops coming down the street…it was one of my friends [who called 911], cause I was busy on the phone trying to get the Narcan and running back and forth trying to find somebody with the Narcan. And I had a couple other of my buddies that stayed with him, made sure he was breathing, gave him mouth to mouth when they needed to.

Consider the sheer number of people involved in this overdose response. There is Jason himself. There are the friends he hit up looking for Narcan. There are his buddy who

called 911, and his other buddies who stayed with the victim and performed rescue breathing. There is the first person whose house he ran to in search of Narcan, then there is the second. There is the buddy who ran relay with Jason to deliver a nasal Narcan kit, who may or may not have acquired the kit from another friend. All told, at least eight people were involved in the care and resuscitation of this overdose victim before the police and paramedics arrived. And for most of them, this was not their first overdose of the week, or even of the day. The overdose spike nearly overwhelmed the networks that exist among drug users to handle overdose and other crises. Jason knew of two homes within a few blocks where he could get Narcan on short notice: that is a powerful support system. But with so many overdoses in a short period of time, Jason had not yet heard about the overdose victims that these people had revived earlier that same day. With persistence, even in the middle of a crisis, Jason and his friends were able to locate a kit. While they searched for one, they stayed with the victim and performed rescue breathing, reducing the risk of permanent brain damage.

Jason may have been particularly determined to save this overdose victim, as he was the person who provided the drugs:

> Yeah the last Narcan dose that I gave was, um, to a customer that had done summa' my China white. And he just smoked one hit off of that piece of foil: pshh, fell right over. Seized up.

Jason was involved in selling the drugs that triggered the overdose spike. He has sold drugs that caused a person to overdose many times before, and during our conversation he was reflective about the harm he has caused as well as the ways he seeks to reduce

harm. Having the ability to reverse overdoses with Narcan plays an important role in this. When I asked if carrying Narcan has had any effect on him personally, he paused for a long time, seemingly taken aback at being asked a personal question. He responded: “Yes. I don’t have deaths on my conscience”. Then, after another long silence, he told me about his history with heroin.

> You know I’ve- when I first started doing heroin, I was introduced to it by one of my best friend’s dad. I was basically just a kid. He came down into the basement with a bag of crack and a bag of heroin, asked us if we wanted to get high. And we told him yeah, we thought we were cool, hanging out with the older crowd you know? We didn’t know what it was. And I turned a bunch of my friends onto the shit, you know, my brothers. They’ve been in and out of prison, both my parents are dead because of it, I’ve put multiple of my friends in the ground because of it and most of them I introduced to it. You know so now I go by a strict rule. I won’t ever turn anybody on to heroin. I won’t give anybody heroin that’s never done it before and I’ll never get anybody heroin that’s never done it before. The last kid that I did lied to me about doing it, and he ended up going out. And I stayed there and made sure and saved his life. I went to jail over it. Not on my watch, he wasn’t dying on me.

Contrary to perceptions of drug-depended people as selfish, manipulative, and looking out for only their own interests, there exists within the community of people who use drugs a strong sense of communal responsibility. For many users, drug use is highly social. The intense bonds that drug users form through camping or shooting up together are well-documented but are generally seen by healthcare providers as negative influences that discourage users from “getting clean” and forming “healthy” connections. But when it comes to overdose, these social networks provide the basis of life-saving care for many drug users. Peer-delivered naloxone is unique among harm

reduction programs because it makes use of these networks, and reinforces them as overdose prevention tools.

II. Introduction

People who are dependent on drugs are often seen as less than fully human. Users of certain drugs are dehumanized with labels like “junkie”, “addict” and—for the visibly homeless—bum. We make many assumptions about people who abuse or are dependent on illegal drugs: That they are selfish; that they are intellectually inferior; that they no longer care about their own health or survival. My work with intravenous drug users at the local syringe exchange has shown me that this is not true. Over the last two years, I have come to know “B”, a homeless woman who uses heroin and attends the local syringe exchange. Like me, she cares deeply for her loved ones, and will do whatever she can to keep them safe. Like me, she is curious about herself and about the world, and strives to understand the society she lives in. Like me, she wants to feel healthy. Like me, she wants to live. And yet, as our country combats the most serious epidemic of opiate addiction and overdose in our history, the voices of people like B are being neither heard nor respected.

In Eugene, where this research was conducted, drug users inhabit an ever-shifting social landscape. People move in and out of town, in and out of camps, homelessness, treatment, and jail. Not everyone knows everyone, but everyone has some connection. Favors, resources, and information are constantly exchanged. Among people with almost no money, social capital is a precious resource. Survival skills are passed down from older, more experienced users to new arrivals. Over time, drug users become experts at reducing the harm associated with drug use, although they do not always have access to accurate information or effective harm reduction tools. For this

reason, drug users have a significant role to play in improving their health and the health of their community.

The United States is currently experiencing an alarmingly high rate of overdose deaths. In 2017, there were 47,600 deaths from overdoses involving opioids in the US, up 30 percent from the previous year (NIDA 2019). During this time, overdoses involving prescription drugs increased slightly from already high levels. There was a sharp increase in deaths involving heroin, and an even sharper increase in deaths involving fentanyl (NIDA 2018). Provisional data through July 2018 indicate a small but encouraging decrease in overdose deaths from the previous year (Ahmad et al. 2019). In April 2018, the US Surgeon General released an advisory that anyone who uses opioids, as well as their family and friends, should carry naloxone (Adams 2018).

Naloxone hydrochloride is an opioid antagonist that can reverse respiratory depression in a person overdosing on opioids. It has a higher binding affinity than heroin for opioid receptors in the brain, and can displace heroin from the receptors (ACS 2016). As it does not activate the receptors to produce a "high", it has no abuse potential (Jasinski, Martin, and Haertzen 1967). In fact, it prevents all opioids, including those produced endogenously, from acting on the brain, precipitating withdrawal in a person who is dependent on opioids. It is given as an intramuscular injection or nasal spray, neither of which require clinical training in the way that an intravenous injection would. Although it has been in use by medical personnel for over thirty years, in the past decade the use of naloxone has spread rapidly in the United States and worldwide. Firefighters, police officers, bus drivers, librarians and private citizens now routinely carry naloxone. In an effort to curb the rising tide of opioid overdoses, many states have

eased the prescription requirements for naloxone and instituted legal protections for non-medical personnel who possess or use it (Freeman et al. 2018). In the state of Oregon pharmacists may prescribe naloxone in bulk to community distribution programs. Anyone who administers naloxone to an overdosing person is protected for liability for that person's well-being, as long as they have been properly trained (ORS 689.681).

More targeted interventions known as peer-delivered naloxone programs dispense naloxone directly to drug users, the population most at risk for overdose. Because drug use is often social, other drug users are often in the best position to intervene when someone overdoses. A national survey conducted in 2014 found 140 organizations providing naloxone to lay-persons, a figure that has almost certainly increased in the past five years (Wheeler et al. 2014).

The role of naloxone in the opioid crisis has become even more crucial with the encroachment of fentanyl, a synthetic opioid hundreds of times more powerful than morphine. Fentanyl and carfentanyl are sometimes used intentionally by people who have become tolerant to heroin. This type of drug use carries a high risk of overdose. In addition to intentional use, because of its low price and availability, fentanyl is regularly used to cut not only heroin, but also cocaine and methamphetamine (WHO 2017). In many communities, including where this research was conducted, cocaine and methamphetamine users are now at risk for accidental opioid overdose. For drug users, the encroachment of fentanyl has created an environment of heightened anxiety, as overdoses become more common and less predictable. Overdose death rates are

alarming when read in the news, but to experience them as a person who uses drugs is terrifying.

Peer-delivered naloxone programs fall under the umbrella of harm reduction. Harm reduction is not a unified theory, but rather a collection of practices centered around reducing the harm associated with illicit drug use. Some examples of harm reduction programs for intravenous drug users are syringe exchange, methadone replacement therapies, and peer-delivered naloxone. For all of these programs, abstinence from drugs is not the goal. Rather, the goal is helping an individual drug user to live in a safer way. Harm reduction contends that many of the harms associated with illicit drug use are not inherent to the drug use but are caused or worsened by enforcement of current drug policies. Although harm reduction programs are by definition constantly evolving to meet the needs of the populations they serve, there are two principles that all programs have in common: lack of judgment and client-centered care (Marlatt, Larimer, and Witkiewitz 2012). Through these principles, harm reduction programs aim to empower drug users as agents in their own lives.

There is strong evidence for the effectiveness of harm reduction programs generally. For example, access to syringe exchange—programs where drug users can turn in used syringes and receive unused, sterile injection equipment-- has been shown to reduce needle sharing, lowering transmission of HIV and hepatitis C (Ksobiech 2003, Kilmer et al. 2012). Syringe exchange access also reduces improper syringe disposal (Quinn et al. 2014). Harm reduction programs build from the assumption that drug users are rational human beings possessed of agency. The success of syringe exchange and similar interventions show that people who are dependent on drugs are capable of

making positive changes in their behavior. This research extends that claim to argue that the success of peer-delivered naloxone programs shows that drug users are capable of caring for the health and well-being of those around them.

On a more fundamental level, harm reduction programs seek to destigmatize the addict. Peer-delivered naloxone challenges many of the traditionally accepted practices in drug abuse treatment. These programs take the social context in which injection drug use often occurs, generally seen only as an impediment to drug users entering treatment, and harnesses it as a public health tool. Although "addicts" are often seen as selfish, peer-delivered naloxone programs assume that drug-dependent people care deeply about the safety of others in their community. They also place trust in drug users to act rationally in an overdose situation, and make use of their pre-existing experience recognizing overdose. In short, these programs acknowledge and seek to cultivate the unique ability of active drug users to act as first responders to overdose.

III. Review of Relevant Literature

In just a few years, naloxone has gone from an emergency medication unknown to most people to a public safety tool that is ubiquitous in many communities. The people most a risk of overdose, drug users, now have access to a life-saving treatment without delay. Some people who use drugs have been enlisted as de facto first responders, providing medical care in their communities. Research is just beginning on the effects of carrying naloxone on drug users who take on this role, and the impact of this new public health tool on their communities.

This research seeks to address these questions by speaking directly to drug users who have carried and used naloxone about their experiences. Studies on this topic that involve ethnographic fieldwork or interviews with drug users have so far been geographically concentrated in the UK, Australia, and Vancouver, BC. In the United States studies have been published only on research in New York City. Because of cultural differences between communities of people who use drugs, as well as variable drug policies between countries and states, studies on this topic may not be generalizable across regions. This project is the first to engage directly with drug users who carry naloxone outside of a major urban center. It is also the first to engage with methamphetamine users who carry naloxone in addition to opiate users.

Development of Peer-Delivered Naloxone Programs

Until the mid-1990's, naloxone was carried and used only by EMS and other medical personnel. The earliest reference to "take-home naloxone" or "peer-delivered naloxone" is a letter published in the British Medical Journal in 1996. Sir John Strang

and coauthors cited naloxone's strong safety profile and lack of abuse potential to argue that it could be effectively used by drug users, saving lives (Strang et al. 1996). The first wave of research into these programs consisted of "pre-launch" studies in which drug users were interviewed about their awareness of and willingness to use naloxone. These studies were intended to determine if a peer-delivered naloxone program might be viable in particular communities. All of these studies found that drug users were willing to administer naloxone to an overdosing peer. One study, conducted in London, found that 89% of study participants had witnessed a fatal overdose that could have been reversed with naloxone (Strang et al. 2002). Similar studies conducted in the UK, Australia, and San Francisco found that drug users were excited about naloxone but expressed concerns about legal issues, lack of training, compensatory drug use and the response of the victim on waking (Seal et al. 2003, Wright et al. 2006, Kerr et al. 2008). Drug users were willing to take on the responsibility of carrying naloxone, and they were already adept at recognizing overdose, but they required training.

At the same time as these pre-launch studies were being conducted, pilot take-home naloxone programs were implemented. In 1998, naloxone was provided to 101 "drug misusers" in Jersey, England, resulting in 5 recorded resuscitations. A few months later, in 1999, 124 opiate misusers were provided naloxone in Berlin, Germany, resulting in 22 recorded resuscitations. According to a report on these pilot programs, the drug was administered appropriately in all but one case (Dettmer, Saunders, and Strang 2001). Take-home naloxone programs were slower to catch on in the United States. In 2009, many European countries had passed laws enabling trained lay-persons to carry and administer naloxone without fear of legal repercussions, but most US states

had not (Kim, Irwin, and Khoshnood 2009). Since then, the number of take-home naloxone programs has increased as laws have been passed on a state-by-state basis. According to a review, prescriptions for naloxone increased steadily from 2011-2015, then increased eight-fold between 2015 and 2017 (Freeman et al. 2018). A 2014 survey of 136 organizations that provided naloxone to lay-persons documented 8,032 overdoses reversed by lay-persons in 2013. Although most of these programs made naloxone available to all lay-persons, 81% of all persons trained were active drug users (Wheeler et al. 2014).

As peer-delivered naloxone programs became more common in the 2000's and 2010's, studies were conducted into their effectiveness. Two questions dominated research: Can drug users be trained to properly administer naloxone? And; Are take-home naloxone programs effective at reducing overdose deaths? The answer to the first question appears to be yes. At least three studies have shown that after training, drug users are highly effective at recognizing opioid overdose (Green, Heimer, and Grau 2008), and after training retain knowledge of where and how to administer naloxone (Sanju, Boulay, and Begley 2010, Behar et al. 2015). However, concerns persist that drug users infrequently call 911 for overdose (Tobin, Davey, and Latkin 2005, Lankenau et al. 2013). Another growing concern is that, with the rise in overdoses involving fentanyl, victims increasingly require more than the 1-2 doses of naloxone typically included in a kit to reverse respiratory depression (Morgan and Jones 2018). The effectiveness of peer-delivered naloxone programs at reducing overdose deaths has not been conclusively shown. Only two large quantitative studies have been conducted

on this topic, with contradictory results (McDonald and Strang 2016, Doleac and Mukherjee 2018).

The most serious concern that has been raised about peer-delivered naloxone programs is that knowing naloxone is available might encourage PWUD to use more drugs than they otherwise would. At the population level this could potentially negate the positive effects of these programs, leading to more overdoses overall. This theory was supported by a 2017 paper that found a statistically significant increase in overdoses and drug-related crimes in the Midwest region of the US after laws were put in place to increase access to naloxone (other regions showed no change) (Doleac and Mukherjee 2018). Their work was based on the "Moral hazard" model first developed by the economist Samuel Peltzman in 1975. After the introduction of seatbelts, he posited that they could lead to more traffic fatalities, because drivers would drive more recklessly knowing they and their passengers were belted in (Peltzman 1975). When applied to overdose prevention programs, an individual drug user using more drugs because the presence of naloxone makes them feel safer is referred to as "compensatory drug use".

There is one principle reason the moral hazard model may not apply to peer-delivered naloxone programs. For a person who is dependent on opioids, receiving naloxone precipitates opioid withdrawal, making it undesirable. The behavior suggested, intentionally using more drugs than one usually would, is wasteful from the perspective of the drug user. Two quantitative studies examining this question have found the opposite result: modest decreases in overdose rates after the introduction of community-based naloxone programs (McDonald and Strang 2016, Walley et al. 2013).

A qualitative study involving interviews with drug users likewise found no evidence of compensatory drug use (Jones et al. 2017). However, Doleac and Muckherjee are not the first to raise this concern. Early pre-launch studies of the acceptability of peer naloxone programs found that drug users themselves also had concerns about the possibility of compensatory drug use (Kim, Irwin, and Khoshnood 2009, Strang et al. 2002, Wright et al. 2006).

In the past two years, some researchers have begun using ethnographic methods to examine the social and cultural impacts of peer-delivered naloxone on communities of drug users. Faulkner-Gurstein conducted participant observation of a naloxone program in the Bronx, as well as interviews with program staff. She was the first to point out the unique position of naloxone as an intervention that relies on existing social networks among drug users. In her words:

> Whereas prohibitionist drug policies seek to isolate drug users from the spaces and cultures of drug use, harm reduction strategies like peer-administered naloxone treat the social contexts of drug use as crucial resources for intervention. Such programs utilize the expertise, experience, and social connections gained by users in their careers as users.

This is a salient observation. However, little work has been done to examine the logical extension of this argument: that peer-delivered naloxone may work to strengthen the social ties between drug users by renewing their sense of agency and responsibility for one another.

History of Drug Ethnography

Ethnographic research with communities of drug users has produced many insights into the lives of these populations and their experiences of drug enforcement policies. Historically, ethnographic research has been associated with destigmatization of the "addict". Drug ethnography has also frequently toed the line between scientific research and scientific fetishization of drug users.

The term "addict" and associated concepts became prevalent in the west in the 19th century, at the same time that the field of anthropology was born (Courtwright 2001) However, the application of ethnographic methods to drug-using communities did not coalesce into a distinct methodology until the 1970's (Bennett and Cook 1996). A series of studies in the 1960's and 1970's treated communities of street drug users as distinct cultures with their own norms and priorities. The goal of this "subculture" approach is "The development of a holistic description of the people for whom drug use had become a central organizing mechanism in their lives" (Singer 2012). This has proven to be a useful framework for understanding the actions of drug-dependent people as guided by logic. While dominant narratives of the time pathologized drug users as irrational, ethnographic research using the subculture model reveals that drug users make decisions based on the internal logic of their community. And while addicts at the time were generally viewed as non-participants in society, ethnographers showed that drug users' days are filled with activities that are meaningful to them, and are actively engaged in maintaining wide networks of social relationships (Sutter 1966). As in mainstream society, communities of drug users have norms, status symbols, and individuals of higher and lower status. And as in conventional society, these norms shift

over time. In the 1980's, researchers began to add to this model with studies that focused on the perspective of drug users, but also considered the structural forces that impacted their lives (Singer 2012). For example, Joanne Neal's interviews with heroin users in the hospital after overdosing focused on their lived experiences of drug overdoses, but also how those experiences were shaped by the UK's healthcare system (Neale 1999).

Then as now, anthropological research was divided into separate streams concerned with alcohol, tobacco, and "street" drug use (heroin, cocaine, methamphetamine, etc.). Ethnographic research with street drug users exploded as a result of the HIV pandemic in the 1980's and 1990's (Carlson et al. 2009). As the link between sharing injection equipment and HIV infection became clear, anthropologists were deployed to learn more about the injection practices of street drug users and identify targets for public health interventions. During this period, a great deal was learned about practices of syringe sharing. It was previously hypothesized that drug users purposefully shared syringes as a form of intimacy and social bonding. This myth was debunked by ethnographers who found that the principle driver of needle sharing was a lack of access to sterile syringes (Maher 2002, Carlson et al. 2009, Rhodes et al. 2005). This research provided a boost to the nascent movement to establish legal syringe exchange in the US.

Ethnographic research during this period also gave us a greater understanding of "hidden populations" of drug users who are not represented in other research, such as homeless drug users who do not interact with institutions, women, and sex workers.

Anthropologists often are the first to report emerging trends in drug use, such as the rise of modern synthetics and poly-drug use in the last decade (Singer 2006).

A new framework which has gained some traction since its introduction in 2009 seeks to acknowledge that certain aspects of an addiction can be affirming. Addiction provides the opportunity for new social connections, insights, and a sense of belonging that cannot necessarily be dismissed (Singer 2012). This effort not to assume the value of the lives of drug dependent people aligns with the principles of harm reduction. Ethnographers working with drug users have regularly partnered with harm reduction programs in order to gain access to the communities they wish to study. Because drug users may trust these programs more than traditional healthcare or social service providers, they can provide access to hidden populations. However, harm reduction programs are themselves a natural object of study for anthropologists, as they share a non-judgmental attitude and a commitment to understanding drug dependence from the perspective of the person who is experiencing it. In one study, McLean found that a syringe exchange program played a broader role in the lives of it's mostly homeless clients than simply as a source of injection equipment. The harm reduction facility she studied was a source of food, primary care, and rudimentary mental health care. It also served as a hub to connect clients to other social services, and as a safe place to exist for homeless people who were not legally allowed to be anywhere (Mclean 2012). Harm reduction programs can provide a rare glimpse into the lives and everyday social interactions of homeless drug users.

IV. Methods

I utilized a qualitative, ethnographic approach to investigate the role of naloxone in the community of drug users in Lane County. Fourteen semi-structured interviews were conducted with seventeen clients of a syringe exchange who currently carry naloxone. The purpose of conducting interviews was not only to learn what actions participants took in overdose situations, but to learn about their motivations and decision-making process. Starting with the assumption that drug users make logical decisions based on their own priorities, I sought to understand the factors that influenced participants' daily decisions. By focusing on a single peer-delivered naloxone program serving a single community of intravenous drug users, I learned about the larger role that naloxone plays in the highly social lives of drug-dependent people. This research was approved by the University of Oregon's Institutional Review Board (protocol number 05042018.005)

Site Description

Interview participants were clients of the HIV Alliance syringe exchange program in Eugene, Oregon. This mid-sized city is located in a predominantly rural county and has historically had a large unsheltered homeless population. The HIV Alliance is a local non-profit that works to support individuals living with HIV/AIDS and prevent new infections. The syringe exchange was started in 1994 with the goal of reducing HIV infections through needle sharing. This organization is widely trusted by homeless people and drug users in the community. In 2016, the syringe exchange began

offering naloxone training and kits to clients. Since then the program has given out 7046 naloxone kits and collected reports of 509 overdoses reversed using these kits, although this number likely does not capture all overdoses.

The syringe exchange operates on a drop-in basis, five days per week, at two mobile locations and at a permanent office. The majority of clients attend the mobile locations in Eugene and Springfield. Supplies are transported in an RV, and the exchange is set up using tables and canopies in a semi-private parking lot. The exchange is operated by one experienced full-time staff member and a rotating group of volunteers. When clients arrive, they are greeted and asked to drop off any used syringes they brought. They then fill out an anonymous check-in form. Before they receive new syringes, a volunteer offers each client a series of resources offered by the Alliance. Clients are offered safer injection information, information on detox and treatment centers, free HIV testing, on-site medical care with a licensed physician who sees patients in the RV during the exchange, naloxone, and fentanyl testing strips. The test strips are a recent addition. If clients decline a particular service, volunteers are trained to respect their decision and maintain a neutral facial expression. Once they have received their syringes, clients are offered other harm reduction supplies: alcohol swabs, cookers, ties, cottons, band aids, sterile water, safer sex supplies, and personal biohazard sharps containers.

While some clients leave as soon as they have their supplies, many stay to socialize with volunteers or other clients. Because of an agreement with local police not to patrol the area, syringe exchange is an attractive place for many homeless drug users to relax without fear of law enforcement. There is always a table with food donations

including bread, fruit and pastries, and volunteers make hot coffee to bring in the winter. Clients drink coffee, look through donated clothes, wait to see the doctor, and update staff on recent events in the PWUD community. In the same space, at the same time, small groups of clients receive training for naloxone and fentanyl test strips. The atmosphere is lively, occasionally chaotic but never out of control.

Narcan training takes place within the dynamic environment of the syringe exchange. Clients who are interested in Narcan, and indicate to a volunteer that they have never been trained to use it, are invited to wait in any open space available. When there are several people assembled, the staff member who is in charge of Narcan asks the trainees about how they recognize overdose. She leads a discussion about the signs of opioid overdose, and strategies for jolting the victim to consciousness without administering Narcan. She then explains the mechanism of action of naloxone at the receptor level, with emphasis on the risk of the victim overdosing again when the naloxone wears off. She also explains that naloxone is not adrenaline, a persistent misconception among drug users. Participants are then invited to look through the items in their kit, as they learn the steps to correctly administer Narcan. The trainer then implores the trainees to call 911, and spends considerable time discussing Oregon's medical amnesty law. Clients leave with instructions for their kit (fig. 1), and a card outlining the medical amnesty law (fig. 3).

Figure 1: Instructions for use, included in each naloxone kit. Furnished by the Lane County Harm Reduction Coalition, 2016.

Recruitment

All recruitment took place on-site during the syringe exchange. Clients had the opportunity to read a flier about the project placed on the donations table, and reached out to me or a staff member if they were interested. As the study progressed, most participants were aware of the project through friends and sought me out at the syringe exchange specifically to be interviewed.

The principle criteria for inclusion was that participants have carried naloxone in the past. Participants were excluded if they were exhibiting violent or aggressive behavior, or if they were deemed by myself or the director of the syringe exchange to be too intoxicated to provide meaningful consent. Participants were also excluded if they were exhibiting signs of amphetamine-induced psychosis. Only participants who self-reported their age as over 18 were interviewed.

Interviews

Interviews lasted 15-45 minutes, and participants were compensated with a grocery store gift card worth $25. Twelve interviews were audio recorded with consent from all participants, and one participant requested that I take only hand-written notes. Interviews were conducted in a semi-private area on-site at the syringe exchange. The interview location was outdoors but out of sight and earshot of syringe exchange staff and clients. All interviews were conducted by the author, in English.

Names of participants and other identifying information were not recorded. At the beginning of each interview, participants were invited to select a pseudonym for themselves. Several participants did not select a “traditional” name, and I honored their

requests. Interview topics included participants' histories with naloxone (known by most participants by its brand name Narcan) including the last instance they administered it; their willingness to call 911 to report an overdose; and their perceptions of the risks and benefits of peer-delivered naloxone programs. More sensitive topics, such as participants' histories with overdose and loss, were also discussed. During interviews, personal discussions were always initiated and guided by the interviewee. A sample list of questions can be found below, although questions varied across interviews.

In two cases, participants requested to be interviewed as a group, and I agreed. In both cases, the people being interviewed together were close friends who lived and used drugs together. During these interviews, I allowed participants to converse among themselves whenever possible. Often, one interviewee would answer my question, then another would step in to correct, disagree with, or affirm their perspective.

Most interviewees were initially guarded. However, I was struck by the enthusiasm many interviewees had about naloxone. During recruitment, several participants told me that they wanted to be interviewed because they had recently saved someone, or been saved, by Narcan. For some, participating in this project appeared to be a way to pay a debt they felt they owed the naloxone program. For many, the opportunity to speak openly about both traumatic and empowering experiences of overdose was obviously cathartic.

Figure 2: Sample List of Interview Questions

1. Tell me about yourself.
    a. How old are you?
    b. Where are you from originally?
    c. Which drugs do you usually use?
2. Can you remember when you first heard about Narcan?
    a. How long ago was it?
    b. What motivated you to start carrying it?
3. In your own words, could you explain how Narcan works inside the body?
4. How do you personally recognize that someone is overdosing, and might need Narcan?
5. Please take me through, step-by-step, the last time you administered Narcan to someone.
    a. Where were you/who were you with?
    b. Where did you give the injection?
    c. How long did you stay afterwards?
    d. Did you call 911?
6. Describe your thought process deciding whether or not to call 911 in that situation.

Or, for participants who had never personally administered Narcan:

If you were to administer Narcan to someone, would you call 911? Why or why not?

7. Can you think of any risks to having Narcan available to drug users around here?
8. What effect, if any, do you think having Narcan available has had on drug users around here?
9. Has carrying it had any effect on your life, personally?
10. Do you have any feedback or ideas to improve this program?
11. Is there anything about Narcan that I haven't asked about that you think is important for me to know?

Analysis

Hand-written notes were taken during all interviews. Audio recordings were transcribed and analyzed by the author. Over the course of the interview process, I identified a set of preliminary themes based on topics that had surfaced during multiple interviews. These themes were refined as interviews continued. Once all interviews

were complete, I undertook a textual analysis of the transcripts. I first identified interesting quotations and sorted them according to the preliminary themes I had developed. This led to some adjustment of the categories to better suit the data. I then developed an initial hypothesis related to each theme, then searched the transcripts for statements that supported or contradicted these hypotheses. I continued this process until no new ideas emerged from the data.

In my analysis, I also drew on observation from my two years as a volunteer at the syringe exchange. From September 2017 until interviews were completed in September 2018, I spent approximately two hundred hours at the syringe exchange, sometimes as a volunteer and sometimes as a participant-observer seeking to understand the role of Narcan in the PWUD community. In this time, I have witnessed interactions and overheard conversations between drug users at the exchange. I have also had countless casual conversations with clients on topics ranging from new grandchildren, to the quality of heroin available in the area, to a recent traumatic encounter with the police. My observations of and interactions with interview participants outside of our formal interview informed my analysis of the community of drug users and the roles of participants in that community.

Partipant Profile

Participants were evenly divided across gender with six identifying as male, one as a transgender male, and nine as female. The drug of choice for most was heroin, with two participants listing prescription opiates. Two participants gave methamphetamine as their primary drug, and two declined to answer. It should be noted that most participants

also mentioned using other drugs in addition to their primary drug including cocaine, speed, marijuana, and fentanyl. Ages of participants ranged from 22-51, with a median age of 36 years. A summary of participant characteristics can be found in table 1.

Most participants indicated that they were currently homeless or at risk of being homeless, with only two saying they had stable housing. Although homelessness in the United States exists on a spectrum, in this study all participants who identified as homeless said they slept either in an encampment or in a vehicle. Therefore, for the purposes of this paper the term "homeless" can be taken as "unsheltered homeless". There is a strong aversion to shelters among syringe exchange clients. Homeless clients have told me that they have experienced disrespectful treatment by shelter staff, they are worried their belongings will be stolen, and that they have difficulty finding a safe place to store drugs and paraphernalia, among other complaints.

Interview participants recalled first learning of Narcan between one and six years ago. It was first introduced to them from a variety of sources including friends, Correctional Officers, healthcare professionals and staff at the syringe exchange. Several participants specifically recalled learning about Narcan in the hospital after it was administered to them by EMTs. The HIV Alliance syringe exchange was the source of the initial Narcan training and prescription for all but one participant, who received his initial training from his doctor after being prescribed opioids for pain. In addition to this training, interview participants noted other sources of information on Narcan, most notably peers.

Limitations of Participant Population

The participant population interviewed for this study are distinguished from all drug users in Lane County in several ways. First, since interviews were conducted at a local syringe exchange, all participants were clients of the syringe exchange. Therefore, nearly all participants were injection drug users. The perspectives of pill users, who can also benefit from carrying Narcan, are underrepresented. Furthermore, not all injection drug users in Lane County attend the syringe exchange (it is nearly impossible to estimate a proportion). Drug users who attend the syringe exchange may be more invested in using drugs safely than other drug users. They are also likely to have more accurate information on drugs and drug overdose.

Additionally, peer administrators of naloxone are a self-selected group within syringe exchange attendees. They have actively sought out the opportunity to carry Narcan, and have been trained in overdose recognition and response. They may be more comfortable taking initiative than other drug users, and are highly concerned with harm reduction. Although they are very much a part of their community, I argue that those who carry naloxone should be considered as a distinct population among drug users.

Table 1: Summary of Participant Characteristics

Name	Gender	Age	Housing Status	Drug of Choice	Administered Narcan?
Jenny	Female	24	Homeless, 8 years	Unknown	No
Rob	Male	51	Unknown	Methamphetamine	No
Arthur	Male	50	Homeless	Methamphetamine	No
Star	Female	28	Unstable housing	Heroin	Yes
Bear	Female	22	Unstable housing	Heroin	Yes
Sally	Female	27	Stable housing	Heroin	Yes
War	Male	43	Homeless, 37 years	Heroin	Yes
George	Trans. FTM	50	Unknown	Heroin	Yes
Joe	Male	36	Unknown	Heroin	No
Howie	Male	32	Unknown	Heroin	Yes
Mamie	Female	44	Homeless	Unknown	Yes
Dink	Female	42	Unstable housing	Pills	No
Ish	Male	36	Homeless	Heroin	Yes
Fiona	Female	23	Unknown	Heroin	No
Cupcake	Female	38	Stable Housing	Pills	Yes
Michelle	Female	27	Stable Housing	Heroin	Yes
Jason	Male	40	Stable Housing	Heroin	Yes

V. Results

Thirteen of the eighteen participants reported that they had personally administered Narcan to an overdosing person. In none of these cases was the victim a stranger. Participants told me stories of overdoses involving friends, wives, siblings, nieces, sons-in-law, tent mates, and clients to whom they had just sold drugs. Drug users are not EMT's, and did not maintain a professional distance from those they saved. The incidents described to me were highly emotionally charged and left a lasting impact on participants.

People who use drugs in this community have integrated Narcan into a pre-existing tradition of overdose care. They are using Narcan in a way that strengthens the community of care among local drug users by empowering users to take responsibility for themselves and others.

Compensatory Drug Use

Some researchers have suggested that the presence of naloxone in a community may lead to compensatory drug use. If drug users know that naloxone is available to save them, they may be less careful with their drug use, or even intentionally use a toxic dose of opiates to achieve a high before being revived. Many study participants were sensitive about discussing this topic, perhaps out of fear of damaging the program. It appears that some level of compensatory risk-taking exists in this community, although its effect on overdose rates is unknown.

In this study, I chose to ask the neutrally phrased question: "Do you see any risks to having Narcan available to drug users around here?" to assess participants'

thoughts on compensatory drug use. Their responses indicated that trained peer administrators of Narcan have spent time considering this issue, but are unsure of how to mitigate these risks in their community.

When asked if they could see any risks or downsides to having Narcan widely available to drug users in their community, ten participants said they could not think of any. The remaining participants saw through my neutrally phrased question and gave me their thoughts on the risk of compensatory drug use. Several expressed concerns that knowing Narcan was available might lead other users to become "careless", while carefully distancing themselves and their friends from this kind of behavior:

> A lot of people become careless with their drug use, how much they use. They go "Oh it doesn't matter, I can just drop the black [Narcan]". Well maybe, maybe not this time. I tell them just be careful please. I don't care if you know we have it, please be careful. That's my concern. *(War, 43)*

> I guess it would depend on the drug user I mean some people, I can see where it would give them a sense of "Oh I can do whatever I want because I've got Narcan there". The people I know I don't see that happening too often. I think it's predominantly a benefit, just in case." *(Mamie, 44)*

> Well it's saved my life probably about thirty times. Not even exaggerating. Along with many of my friends. Probably one downside is it helps fuel the idea in your head that you're invincible, you know? And a lot of heroin addicts have that without the Narcan. So to add the Narcan in might be even more dangerous. *(Michelle, 27)*

All participants who mentioned the possibility of compensatory drug use were careful to emphasize the life-saving potential of Narcan. Several seemed nervous to admit to any potential risks, as if they were afraid they might lose access to it:

> If you mean do I think it's a permission statement for them to use, I don't think so at all. I think it's more like a second chance, you know at life. Cause they're gonna use one way or the other. I've seen- I've seen quite a few people that are not around no more. They died in their addiction, and there's people that would be dead too if it weren't for Narcan…I don't think Narcan's being abused, I think heroin's being abused. And it's gonna be abused one way or the other. A lot of people that are on it don't even care if they do die. *(Cupcake, 38)*

Cupcake's response is telling because she was visibly offended by the question. For her, even the suggestion of a risk to making Narcan available was an insult to the memories of those who have died, who could have been saved, and to the lives of those who are alive today because of it.

Drawing on Lived Experiences

Intravenous drug users are experts on drug overdose. However, until recently they have not had access to an effective intervention to save the life of an overdosing person. Narcan made its appearance among most communities of people who use drugs (PWUD) between 5 and 15 years ago, but drug users have been the first responders to overdose for much longer than that. The highly social nature of intravenous drug use combined with longstanding fear of the authorities among PWUD mean that most overdose victims are cared for, or not cared for, by other users. According to program

data, clients who enrolled in the naloxone program since it began in 2016 reported having witnessed an average of six overdoses in their lives. Overdose prediction, recognition, and care, constitute a form of folk medicine passed down from more experienced drug users to younger and less experienced users. For the purposes of this paper, "overdose care" refers to any attempt to help the overdose victim, whether or not it is effective. Administering Narcan, slapping or shouting at the victim, rescue breathing or calling 911 are all forms of overdose care.

In the past, ethnographic research with PWUD identified some of the common strategies drug users employed in response to overdose. Folk remedies include attempts to "cancel out" the effects of heroin by injecting the victim with stimulants such as cocaine (Sutter 1966, Singer 2006, Carlson et al. 2009). Injections of ice water and milk have also been reported. A cold shower, ice bath, or putting ice on the genitals are commonly reported methods of trying to shock an overdose victim to consciousness, as are intuitive responses such as shouting at the victim and slapping their face (Frank et al. 2015, Lankenau et al. 2013). While some of these responses are obviously harmful, they are seen by many drug users are preferable to doing nothing and allowing the victim to die.

The use of Narcan is a relatively recent addition to this body of knowledge, and participants in this study still employ many more traditional strategies. When asked to describe all the actions they took the last time they administered Narcan to an overdosing person, five participants said they employed rescue breathing and four mentioned sternum rubbing, two actions recommended in their training. This is somewhat lower than the percentage of all clients who said they employed these

methods the last time they administered Narcan. Among overdose reports from prescription refills, rescue breathing was indicated in 67% and sternum rubbing in 59% of cases. In contrast, seven interview participants described slapping the victim and eight said they poured water on them, two common "folk remedies". In overdose records, clients reported using ice or cold water about 20% of the time, and slapping the victim in 61% of cases. While these are not recommended in training, they are not harmful actions and can be effective at making the victim more alert: Sternum rubbing is a more institutionalized version of slapping. Most interview participants mentioned using a combination of "official" and folk remedies for overdose, based on the resources they had available.

Discussion of the more harmful folk remedies to overdose, such as placing the victim in an ice bath or injecting them with cocaine, was absent during interviews. The only mention of these more drastic measures came from Rob. When I asked why he decided to start carrying Narcan, he said: "We used to use speed to pull people out of it". Among all overdose records, clients reported using a cocaine shot just seven times in 453 complete overdose reports. In this community, methamphetamine shots appear to be a more common overdose remedy than cocaine shots. Clients said they injected the victim with methamphetamine in sixteen cases. In one case, a client wrote in the comments section of their refill form that others had wanted to inject the victim with meth, but that they "wouldn't let them" and administered Narcan instead. Among drug users who carry Narcan and are trained in overdose response, access to an effective overdose reversal medication has the potential to render these harmful actions unnecessary.

All participants used a mix of biomedical and casual language to describe overdose. Twelve used the phrase “fall out”, a term for overdose common among drug users. “Falling out” specifically refers to the onset of a heroin overdose, when the victim slumps or falls over. When asked how they recognize overdose, two participants slumped in their chair and mimicked an overdosing person. Others referred to the behavior of a person as they begin to overdose on opiates as the “fall out dance”.

> He did his point and he literally turned purple in the lips and started doing the fall-out dance. *(Star, 28)*

Every participant in this study, whether or not they had personally administered Narcan, reported having witnessed one or more overdoses in the past. Unsurprisingly, this lived experience translated into a facility for recognizing the signs of overdose. When asked how they personally recognize that a person is overdosing and might need Narcan, all participants were able to identify major clinical signs such a blue lips, grayish skin, and shallow breathing. Interestingly, seven used the medical term “non-responsive”, which appears in training materials distributed by the HIV Alliance (fig. 1). Some participants were able to describe all the clinical signs of overdose listed in the organization’s instructions:

> It seemed like their body seized up, and they just started to do like a gargling, like a gargling, choking kinda sound. And then physically they looked like—like their lips and skin color were like a light gray pale bluish color and uh, you know, completely non-responsive. Not breathing you know, like very short breaths or something. *(Howie, 32)*

Other participants spoke from a place of personal experience, describing overdose in vivid sensory detail:

> Well just, usually you can tell by listening for that gurgle. And their lungs—you can hear that last little bit of air going out of their lungs. They'll start losing color, bluish around the lips. Their eyes roll up and they fucking start, basically seizing, go all stiff. Yeah, pretty obvious that they're in trouble, respiratory distress. *(Jason, 40)*

Even while describing clinical symptoms, participants emphasized intuition not only in recognizing but also predicting drug overdose:

> When they're absolutely non-responsive. I mean their eyes are rolling up in the back of their skull, maybe foaming, sometimes. Just almost dead pretty much, you know? You've been around dead bodies you kinda know when they're slipping that way. *(War, 43)*

> I had a feeling. You know I didn't *know* but I had a feeling that he was gonna go out. Because he was literally doing the "I just got out of jail, I'm about to do this whole point". *(Star, 28)*

Opiate overdoses are most likely immediately after release from prison or a treatment program, when a user's tolerance is lowest. Participants in this project were keenly aware of this. One woman known as Bear described the way she takes tolerance into account when assessing the risk of a friend overdosing:

> One of my good friends, he used to use a lot and he just got out of jail a little bit ago and hasn't been using like at all…we went off into a dark corner and we do a shot. Well, I only got like 10-15 units more than him of the shot, realized whoa, that a really strong shot for me that has a tolerance, and for him not having a tolerance, he's gonna go out if he does it. And by the time I realized and tell him that he's gonna go out,

> he's already pushing it. So, I knew he was gonna fall out and he falls out, fucking turns blue. *(Bear, 22)*

Several other participants described similar experiences. Bear's close friend Star applied her knowledge of overdose risk and encouraged a friend who had been recently released from jail to consider his decreased tolerance before using:

> I was like holy fuck dude, like, please don't. Like I walked him through the, "Do less, even if it was only four days you were in, you are sober at this point, like please don't. Do a quarter of the point. You can always do more you can never do less" type of spiel. I gave it to him. And he didn't want to listen to me. *(Star, 28)*

At one point during the interview, Star and Bear high-fived over a recent experience reviving a friend with Narcan. Both women are enthusiastic about Narcan and passionate about educating others on overdose prevention. Another participant, Rob, showed awareness of the risks of using drugs alone. When asked how he recognizes that a person may need Narcan, he referenced the importance of checking on friends who are using alone in a slightly disjointed statement:

> Ok, say I know I'm a heroin addict ok? And I go over to this tree, and I go over there for longer than an hour or so, and the rest of the group is over here, and I separate from the group to go do my thing, and they don't know where I am. Then they walk up on me, and I'm all
>
> [Mimes unconsciousness]
>
> That's when you know they need help. *(Rob, 51)*

Rob and Star's statements provide two glimpses of the harm reduction work performed by drug users in their communities every day. The extent to which drug users draw on their lived experience and community expertise to respond to overdoses will be discussed in greater detail in subsequent chapters.

Involving the Authorities

For many drug users, the decision to call or not call 911 when a friend is overdosing is tortuous. Fear of law enforcement prevents many drug users from seeking medical help during overdose. This fact is so common-sense among homeless drug users that when I asked what specifically discouraged participants from calling 911, I was often met with incredulous looks and sarcastic laughter followed by some variation of "the cops". Given the unwillingness of many people who use drugs to call 911, Narcan takes on an even more crucial role. In many cases, drug users are not choosing between administering Narcan or seeking formal medical attention; they are choosing between administering Narcan or abandoning the victim.

One participant, Michelle, explained to me why she refrains from calling 911 whenever possible. From Michelle's perspective, administering Narcan is the most rational way to handle a perilous situation. Michelle told me that she has used Narcan to reverse an overdose about a dozen times, and that she herself has been revived with Narcan by others, "I'm not joking, probably like thirty times". Cumulatively this represents a lot of positive experience that has built up her confidence in herself and her peers to "handle" overdoses with Narcan. On the other hand, if she calls 911 she expects dismissive treatment from law enforcement and paramedics, perhaps to have

her possessions confiscated, or even face arrest. She also expects to be harassed by law enforcement who recognize her in the future.

However, Michelle is not totally unwilling to call 911. Most participants in this study said they were willing to call 911 for an overdose if necessary. Three participants said that they always do so, and one would be willing to do so without question. Seven said that they avoid calling 911 whenever possible, but would be willing to do so if the situation warranted it. Although limited data is available, this is consistent with other studies on drug user's responses to overdose. In another series of interviews with PWUD who carry Narcan, users reported calling 911 for 13 out of 30 overdose events, with all those who did call expressing serious reservations about doing so (Lankenau et al. 2013). A larger study of current and former drug users found that 911 was called in just 23% of overdose cases (Tobin, Davey, and Latkin 2005).

The factors that prevent drug users from calling 911 are well-established. Fear of law enforcement runs deep in this community. This is especially true for homeless individuals who may have frequent negative encounters with law enforcement when they are arrested and ticketed for illegal camping, loitering, and panhandling as well as drug-related offenses. Many of the conversations between clients at the syringe exchange center on these kinds of encounters with law enforcement. In Oregon, it is legal to possess unused injection equipment such as needles, and it is legal to possess Narcan kits. However, clients often complain to each other and to staff about police confiscating equipment such as unused syringes, cookers, and even Narcan kits. Research on interactions between police and drug users has shown that active drug users are detained frequently by police both with and without arrest, and that

homelessness is associated with more frequent encounters with law enforcement (Zakrison, Hamel, and Hwang 2004, Werb et al. 2008).

However, it is also worth examining the factors that motivate drug users to ignore suspicion of law enforcement and call. Each drug user engages in a sophisticated weighing of risks when deciding whether to call 911, which involves weighing the overdose victim's perceived risk of death if they do not call against the perceived risk of legal trouble if they do. In some cases, the perceived wishes of the overdose victim also play a role in the decision. The role that Oregon's Good Samaritan Law, which provides immunity from prosecution for those who call 911 to report a drug overdose, plays in this calculus will also be discussed.

Perceived Risk of Death

All participants, even those who were most resistant to the idea of interacting with law enforcement, told me that they would call 911 if they believed an overdose victim would die otherwise. In determining the victim's risk of death, drug users consider several factors. The most important factor is timing, specifically whether they personally witnessed the victim "fall out".

> It depends. Like if we're using together and I see them go down right in front of me I can give them Narcan right away, and if they respond, come back quickly, then there's no need to call because there was nothing really bad, you know? I mean, overdosing's bad, but then I won't [call 911]. But if there's a situation where I don't know how long this person's been down, or there's no pulse and they're not breathing,

> no amount of rescue breathing is doing any difference, that's when I would call. *(Michelle, 27)*

Michelle's response is revealing. To some extent she considers overdoses in which the victim is immediately revived with Narcan to be nothing out of the ordinary. Michelle has come to see non-fatal overdoses as almost routine. The main factor that leads Michelle to consider an overdose life-threatening is if she does not know "how long the person has been down", meaning she cannot assess their risk of permanent brain damage. In the situation she described to me, because she witnessed the drug use that led to the overdose, Michelle knew what type of drugs the victim had used and in what quantity. With this information she can be reasonably confident that an overdose is due to opioids and can be reversed with one to two doses of Narcan. She also takes into account the victim's vital signs, including pulse and breathing.

Characteristic of PWUD, Michelle will try Narcan first and then other interventions, such as rescue breathing, before calling 911 as a last resort. The decision to administer Narcan instead of calling 911 is also characteristic of the pride many homeless drug users take in not accepting help from "outsiders". As another interviewee put it:

> There tends to be more of a hassle than any good when they come around so I just don't really bother with the cops. We're outlaws, we deal with our own you know what I mean? *(War, 43)*

Peer Pressure

Several participants reported that, when an overdose occurred in a group, they faced pressure from others not to call 911.

> I mean my friends are not gonna be fuckin' super happy about [me calling 911], yeah. But if I think they're gonna die then fucking absolutely, yeah! If I don't think they're gonna make it or I don't think I'm capable of providing what's necessary, then fucking of course I'm gonna call and they can be as mad at me as they want. *(Fiona, 23)*

> Most of the people I was with really didn't want me to, but um, I felt that he was gonna die, that that was his only hope, you know what I mean? *(Cupcake, 38)*

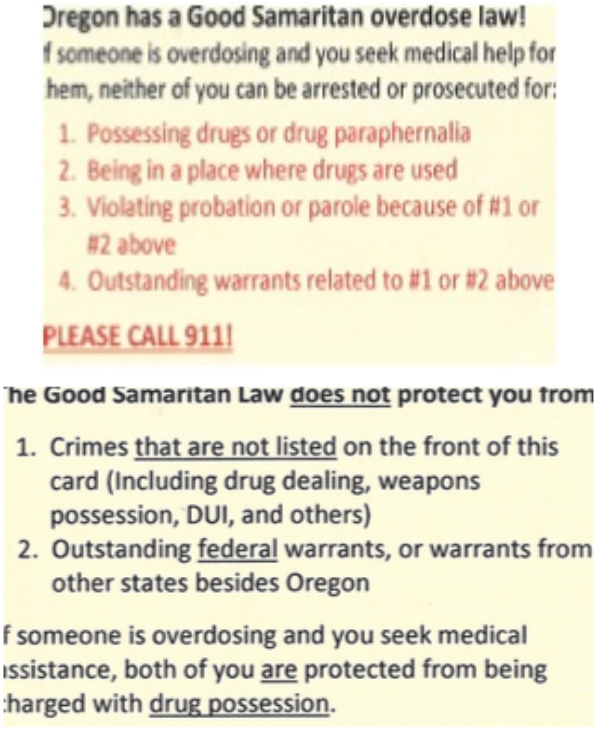
Crucially, both Fiona and Cupcake disregarded this negative peer pressure because they perceived the victim's life to be in danger.

One participant, Ish, told me that he was unwilling to call 911 when he believed it would be against the overdose victim's wishes to do so. Interestingly, he pointed out that when waking, overdose victims are often disoriented, and he expressed concerns about the presence of law enforcement distressing them. In particular, he expressed concern that the victim might lash out at law enforcement, leading to further trouble.

Risk of Legal Trouble: Oregon's Good Samaritan Law

Each naloxone kit dispensed by the HIV Alliance contains a card describing Oregon's Good Samaritan Law (Fig. 2). The law provides immunity from arrest for drug possession for those who are providing medical assistance to an overdosing person. The law does not guarantee protection for everyone present at the scene of an overdose, only the person actively assisting the victim. It also does not provide immunity from arrest for federal or out-of-state warrants.

Figure 3: Summary of Oregon's Medical Amnesty Law



Most participants in this study were aware that legal protection existed for them if they called 911 to report an overdose. Their knowledge ranged from vague awareness:

> I knew it wouldn't be a legal issue to call 911 I just didn't want my friend to die. *(Sally, 27)*

To more detailed knowledge of which activities are granted immunity under the law:

> Of course [I would call 911], there's a fucking Good Samaritan law. Whether I have warrants or not, like, I don't even care if I have warrants. I will go to jail just to call an ambulance, or the cops, to save someone's life. *(Jenny, 24)*

Jenny expects that calling 911 will result in her arrest, and she is not alone. Most participants who were aware of the Good Samaritan law did not trust that police would respect it. In a conversation during a group interview with three friends, George, Joe and Howie, George and Howie discussed why law does not make them feel safe calling 911, while Joe nodded in agreement:

> Howie: Somebody was overdosing and the cops had to be called, and whatnot, and I know that they say that there's like that Good Samaritan rule or law, but honestly-
>
> George: Some of the cops don't care.
>
> H: It's still- they're not cool, they still like really-
>
> G: Harass you.

> H: They definitely harass you they do everything they can to try to put a charge on you of some sort. Basically they're doing an investigation where they're trying to get names of where you got it from, who you got it from, so if you don't cooperate they do definitely get aggressive. That's probably still a big reason why people don't wanna involve the police.

Other participants told similar stories about their experiences with police and paramedics after calling 911 to report an overdose:

> There's the Good Samaritan act, at least, down in California there was, so I know they can't do anything to me. If I have a warrant, I'll give them a false name. But I'd anticipate it to go pretty badly because when there's an overdose, not only are the cops assholes, but the paramedics are assholes. I've been on the receiving end and um—so yeah I'd expect it to be a negative. Even though, you know you'd think they ought to be grateful, because the person's already alive by the time you got here, but yeah they're assholes. *(Michelle, 27)*

Whether fairly or unfairly, most participants expected law enforcement to step outside the bounds of the Good Samaritan Law when responding to an overdose. Police have represented a destructive force in the lives of most homeless drug users, and consequently are not seen as a resource. Most participants are still willing to call 911 to save the life of a friend, but they do so with the expectation that if the police come to the scene, they will be arrested or harassed. Therefore, calling 911 is a last resort for most. Jason's story of an interaction he had with the Eugene Police Department after calling 911 to report an overdose shows the mechanism by which trust between law enforcement and drug users is eroded.

> Those fuckers, they did get my information and they took me to jail, it was bullshit. It was. Cause that showed everybody, you know it showed everybody else there that "see this is what happens". Cause everybody, they like told me to take off, they were like, "you sure got warrants, take off". I was like "no fuck that he's not dying on me", you know? I was like, "They can't ask me my name, you know they can't take me to jail for not saying it." They did. They did. And yeah it was pretty shitty that they did that. Cause that showed—by this time there was a bunch of people that had just ended up showing up. And of course this all drew more attention, so they all got to see that so that was really a bad example. *(Jason, 40)*

Based on my conversations with local drug users, I do not believe that more education about Oregon's Good Samaritan Law will encourage more drug users to call 911 to report overdoses. Although this study did not include PWUD who do not carry Narcan, among those who do carry Narcan there is a strong awareness of the Good Samaritan laws. Long-term, concerted efforts to build trust between PWUD and law enforcement are necessary to convince drug users that the Good Samaritan laws were written to protect them.

Empowerment and Personal Responsibility

Many interview participants reported that carrying and using naloxone has been empowering for them, using phrases such as "it helps me manage my own powerlessness". Four people interviewed contrasted using Narcan to save the life of a friend with the helplessness they had experienced in overdose situations in the past. Three others connected the decision to carry and use Narcan with being a "responsible" drug user. Ultimately, carrying Narcan has been empowering for the participants in this

study both by enabling them to respond effectively to overdose, and by forcing them to take responsibility for their own drug use.

Narcan peer administrators are distinct from people who use drugs generally because they have received specialized training to act as first responders in overdose situations. In this role, many use their knowledge to educate peers about overdose prevention and Narcan administration. Mentoring a peer can provide an increased sense of self-efficacy, leading to positive outcomes for both parties. In general, drug users and others recovering from serious mental illnesses experience benefits to their recovery process by participating in peer-to-peer programs (Marshall, Piat, and Perreault 2018, Marshall et al. 2015). Several studies have suggested that similar benefits might exist for drug users who are trained to administer naloxone (Marshall, Piat, and Perreault 2018). In particular, saving the life of an overdosing peer is empowering for many drug users (McAuley, Munro, and Taylor 2018).

In this study, there were four interviews in which participants became emotional when recounting stories of overdoses they had been involved in. These experiences had lasting impacts on all four participants, and all four stories will be examined in detail. The experiences of Cupcake and Star are discussed first, as both women contrasted earlier experiences with overdose, before Narcan was available, with recent experiences since they have begun carrying it. These experiences with overdose are part of a larger pattern of trauma experienced by many people who are homeless or use illicit drugs. In addition to the deaths of close friends and family, interviewees matter-of-factly described experiences of assault, injury, property theft, childhood homelessness, living with HIV, repeated loss or theft of all of their possessions, and their own drug

overdoses. The backgrounds and personalities of interviewees were varied, but all had experienced traumatic events in their early lives that have been compounded by the everyday violations of homelessness.

When asked how carrying Narcan has affected her personally, Star chose to describe an experience with overdose in which she felt helpless. Several years ago, a friend of Star's overdosed in the upstairs bedroom of a house whose owners were not aware of their drug use. Panicking, Star poured water on the victim and slapped her face, but she did not respond. Star called 911 but, because she feared arrest, she decided to place her friend a few blocks away from the house and hide in the bushes to make sure the ambulance found her. Although the victim recovered, Star had difficulty reliving the experience:

> I carried her out of the house and I laid my friend's fucking dead body down by the river. And I know she lived that time but what if she died, and I just carried my dead fucking friend out and did nothing, when now I know I could have done something definitely to save her. *(Star, 28)*

By "done something" Star meant administering Narcan. Narcan was available to people who use drugs (PWUD) in some parts of the country at this time (around 2010), but Star said she had not heard much about it and that it had never been offered to her.

At the end of our interview, when asked if there was anything else she wanted to tell me, another participant named Cupcake told a story from early in her life:

> I'd always like to have some [Narcan] on me if possible, because when I was 14 I was homeless and I lived on the streets. And I went into a laundry room to sleep, and there was somebody in there who had overdosed and they were having like, convulsions, and I panicked and I poured water on him, and I was kicking him, but I was scared and um, and he died.

Cupcake then circled back to a story she had told earlier about administering Narcan to her son-in-law. It was the first time she had used her Narcan kit:

> So this is the first time it's actually gone the right way you know and uh, it feels good, you know what I mean? To be able to do something about it and not be powerless. I definitely saved [my son-in-law's] life. And I thought if I hadn't been [at syringe exchange] just a week before and gotten Narcan for the first time he'd be dead, right now. It's crazy. *(Cupcake, 38)*

Star and Cupcake's experiences reflect the history of trauma that many drug users bring to their role as peer administrators. Experiences of watching an overdosing person die, or losing friends and family to drug overdose—while not unique to drug users—give context to drug users' feelings about Narcan. While carrying Narcan might have a negligible impact on a non-drug-using layperson, for some drug users it has a more profound meaning.

Carrying Narcan and receiving training can be empowering even for those who have never administered it to another person. Several participants chose to connect the sense of pride they feel through carrying Narcan not with traumatic past experiences, but with ideas about being a responsible drug user. Five participants mentioned that they felt it was important for drug users to "be careful" or "think about what [they] are

doing", but the two participants who spoke most extensively on the subject of personal responsibility were Arthur and War. They are both part of the older generation of drug users, and both spoke about the "lack of common sense" and "reckless" behavior of younger drug users. Interestingly, evidence shows that drug overdose is most common in older, heavily dependent people who have been using drugs for several years (Darke 2014). However, both also indicated that they believe carrying Narcan in order to keep others safe is part of being a responsible drug user. This is in contrast to the perspectives of abstinence-based drug treatment programs such as AA/NA, which require "addicts" to admit powerlessness over their addiction as the first step to recovery. While effective for some, narratives that portray drug users as victims with no agency over their drug use can be paralyzing for some users, and discourage them from reducing the harm associated with their drug use (Gowan, Whetstone, and Andic 2012).

Arthur is 50 years old, and has spent the past several decades camping in the Eugene area. He mainly keeps to himself, and is a daily methamphetamine user. At syringe exchange, Arthur socializes with both methamphetamine and heroin users, and is known and trusted by most regular clients. Even though Arthur does not use opioids, his role as a trained peer administrator of Narcan is very important to him. In this community of PWUD, many methamphetamine users carried Narcan even before fentanyl contamination put them at risk for overdose. They carry it out of a desire to protect their opiate-using friends and acquaintances. When asked what effect Narcan has had on drug users in his community, Arthur expressed pride that he was among the first in his social circle to begin carrying it. Watching others follow his example and begin carrying it as well was an empowering experience for him:

> I was proud and people looked to me and they said, "You know, you need to go hang out with Arthur if you're gonna go doing the black (heroin), you just go around because he has the canister [of Narcan] for that, the proper tools to administer if you overdose." And then it was like, more people followed suit in what I was doing.

From Arthur's point of view, being an early adopter of Narcan raised his status within the PWUD community. He is someone who others, especially younger users, respect and strive to emulate. He uses this influence to encourage other users to practice harm reduction in their own lives by carrying Narcan. Arthur summarized his advice to younger users:

> I'm there, I'm not gonna quit, I'm not gonna tell you to quit, but we're gonna get the tools to save your life and then maybe you'll learn it on your own, like most people have to. *(Arthur, 50)*

Art acknowledges that mistakes happen and that overdoses are common. But he does not see overdoses as inevitable, and he does not see users who overdose purely as victims. He expects that after having been revived with Narcan, a user will be more careful, will learn from their mistakes, and will not overdose again in the future. Making the choice to receive training in overdose prevention gave Arthur a sense of pride. Now, he encourages others to achieve this same sense of pride by taking responsibility for their own drug use.

War, like Arthur, sees himself as a mentor for younger users, telling me:

> I'm kind of like Pa around here or something like that, you know what I mean? I adopted a couple kids around here so I can, you know, put them under my wing, show them what's up.

War became animated as he recounted to me his advice for less experienced users:

> Be careful please. Please please mind what you're doing. I don't mind fucking saving your ass but please, be a little bit more careful, little bit more mindful of what you do, how much you do. Just be you, but be a little bit more careful please, you know!

War is optimistic that his mentorship might have a positive impact on other users:

> I'd say they're a little bit more careful because I continuously give that speech to them. *(War, 43)*

Art and War share a belief in personal responsibility that is not often associated with intravenous drug users. They are encouraging harm reduction in a way that goes beyond reducing the risk of overdose death by carrying Narcan. They are asking other users to make small, positive changes without pressuring them to see abstinence as the end goal. In practice, this could include not using alone or taking a test shot. In order to make a change in behavior, a person must first believe that they are capable of effecting the change. They must feel that they are in control of their behavior. By encouraging peers to accept responsibility for their own actions and their own overdoses, trained Narcan administrators are helping peers to reclaim agency in their own lives.

For some users, receiving Narcan can also encourage more responsible drug use. When asked how Narcan has affected her community, Jenny pointed out that overdosing and being revived with Narcan is an experience that pushes some users to become more responsible with their drug use.

> I think it's probably saved a lot of people's lives. And it's probably opened a lot of people's eyes. I know a person who almost passed, who had to have two [doses of Narcan] done just a couple months ago. She understands what she was doing and, like, how much. She realizes that it wasn't ok and that she needs to be careful. Because before she didn't care, she wasn't as careful as she is now. Like now she's more conscious about what she's doing. Which I think is a really good thing because I don't want to lose my friends. I've already lost enough of them, I don't wanna lose any more. *(Jenny, 24)*

Many people with substance dependencies feel powerless to control their actions and lives. For some, peer-delivered naloxone programs offer a series of chances to make a positive choice for yourself and your community. For some Narcan peer administrators, carrying and using Narcan has a profound effect on conceptions of self-efficacy. In short, it is empowering. This is in line with more general research on the positive psychological effects of serving in a peer-helper role. Further studies are needed to examine whether this newfound empowerment makes drug users more likely to make other positive decisions, such as using clean needles or even entering drug treatment. What is clear is that in some cases the presence of Narcan transforms situations that would otherwise result in trauma or death into meaningful learning experiences for the Narcan administrator and even the victim. By empowering users to respond in overdose situations, access to Narcan is also strengthening the overdose response network that exists among drug users.

Empowerment and Communal Responsibility

For drug users who carry Narcan, using it to revive an overdosing person generates a positive feedback loop. The more times someone uses Narcan successfully and experiences a positive outcome, the more confident they feel acting in overdose situations in the future. This extends beyond the act of injecting Narcan to a willingness to take charge in overdose situations and an increased awareness and sense of responsibility for one's peers.

When a drug user first starts to carry Narcan, they are not always immediately confident responding to overdose. Several participants described jitters or mistakes the first time they administered Narcan, and said that their confidence intervening in overdose situations has increased over time. One participant, Mamie, said that she froze up the first time she was confronted with an overdosing friend, and couldn't remember where to administer the shot. Mamie became emotional as she described how another friend came and took the Narcan kit out of her hands and used it to revive the victim, saying:

> I usually do really well in stressful situations. I always do really well in them, but I think it just hit a little close to home. We were all in a camp together so it was like my neighbor, my friend.

However, after experiencing this traumatic situation, and seeing everyone emerge unharmed, Mamie does not think she will freeze up again, and feels more confident intervening in overdose situations in the future:

> It was definitely an eye opener. I know that that experience will never let me forget where to do it. *(Mamie, 44)*

Over time, this increased confidence using Narcan empowers trained peer administrators to take charge in overdose situations. This is what Star did a few days before she was interviewed. She described the chaotic scene immediately after a friend "fell out" among a group of people using drugs together:

> All my friends are freaking out and it ended up becoming the topic of, "What should we do with him? Should we carry him out of here? Should we leave him, should we leave?" You know, that sketchy conversation started arising.

Fear of law enforcement might have led this group of drug users to abandon the victim, or perhaps carry them some distance outside before calling 911, as Star herself had done years before. However, Star had carried Narcan for years and had administered it many times before. She had anticipated the overdose, because she knew the victim's tolerance was low, so she was prepared to respond:

> Literally my purse was just right on my left. I had a feeling.

Because Star knew she was capable of handling the situation, she had no tolerance for suggestions that they should abandon the victim:

> I always knock that shit in the dirt immediately. Are you fucking serious? Ok, if you guys are all like wanting to get up and go please.

> Because it will be easier on me if you do. So, if that's what's going on fine. If people are staying stay. Watch if you want. I'm narcanning this motherfucker. *(Star, 28)*

For Star, there was no question as to whether she would intervene when her friend overdosed. She knew she could save his life by administering Narcan, so doing nothing was not an option. This is significant because, as Star and other participants told me, scattering and abandoning the victim is not an uncommon response among drug users in an overdose situation. No interview participants admitted to ever having abandoned an overdosing person themselves. This may be because, with Narcan available, the incentive to stay and help is much higher. This may be because, even before Narcan became available to them, participants in this project were predisposed to take action in overdose situations. This could also be because participants have actually done this, but are not willing to admit it to me for fear of judgment. This would mean that, among this community of drug users who carry Narcan, the idea of abandoning an overdosing person is more taboo than other things disclosed to me during this project, including selling heroin, infidelity, prostitution, theft, and violent assault.

George, Joe and Howie discussed this among themselves when I asked what effect they thought Narcan has had on drug users in their community.

George: Whoever you're using with-

Joe: Instead of them running off!

G: Yeah running off and throwing you outside to die.

> J: That used to be pretty much the thing you know, people telling me "if you fall out I'm throwing your ass outside".
>
> Howie: Its still kind of a thing where if somebody overdoses a lot of times it's like-
>
> G: They don't wanna mess with it.
>
> H: Everybody leaves everybody, you know-
>
> All: Scatters

They acknowledged that in both the past and present, many drug users view overdoses as not "their problem". However, Howie views an overdose as his problem, and feels a sense of responsibility to intervene:

> [Everyone] leaves the person that's overdosing and you're left. You call 911 because that's your friend but everybody else just like, takes off. It's crazy.
>
> [All nod in agreement]

For Howie, unwillingness to abandon the victim is also rooted in a desire to prove wrong the assumptions society has made about him as a heroin user: that he is selfish, impulsive, and focused only on his own self-interest. He, George and Joe joked self-consciously to me throughout our interview about how little I must think of "the kind of addict" who would abandon their friends. In this social circle, abandoning an overdosing person is strongly taboo. As trained peer administrators who have all given

Narcan to an overdosing friend in the past, George, Joe, and Howie have all developed not just the confidence to intervene, but a sense of duty to do so. Scattering no longer feels like an option. Sally echoed this sentiment when asked what effects she thought Narcan has had on her community overall:

> I hope that it would…make people…take more action because often people are left to die because either they're afraid of the consequences, or they're afraid to call the cops or they can't call the cops or they're not in a situation where they can get help or something. I would hope that this saves—and I know that it has saved many many lives. *(Sally, 27)*

Here, Sally frames Narcan as an alternative both to abandoning the victim, and to calling the police. With the assumption that some people will never call the police no matter what the circumstances, she knows that it is other users who must act as first responders.

For War, carrying Narcan has given him increased awareness of his friends and surroundings:

> It's made me a little bit more aware and responsible of other people because, like I said their lack of common sense astounds me sometimes. It makes me a lot more aware of situations and how people handle themselves. *(War, 43)*

This increased awareness is something I can also attest to as someone who carries Narcan. When overdose is a constant presence in your life, a kind of vigilance sets in. By carrying Narcan, War has taken on a critical role within his community. Perhaps this is why drug users who are trying to "get clean" often reject Narcan with unusual vigor. At the HIV Alliance office, clients will regularly turn down Narcan training and kits

because they are no longer using drugs. We will hear things like “no, I don’t want any association with that shit”, or “I don’t wanna get pulled back in”. For these people, a Narcan kit carries with it a responsibility toward people who are using drugs. If they carry Narcan, they too are a first responder in the community they are trying to escape.

VI. Conclusions and Discussion

For drug users trained as peer administrators, carrying naloxone is empowering at both the individual and community level. For the community of drug users in Lane County, drug users trained to administer naloxone help to provide critical overdose care. In some cases, this care may be replacing a 911 call, because after administering naloxone successfully several times drug users gain confidence in handling overdose themselves. However, in some cases peer administrators use this confidence to take charge of a chaotic situation and insist that the overdose victim be cared for. By empowering individual drug users to respond to overdose, the presence of naloxone has strengthened the overall network of overdose care in our community.

Beyond a simple increase in confidence, naloxone has strengthened social ties between drug users by cultivating a sense of responsibility for other users. When a person who carries naloxone witnesses an overdose occurring, the life of the victim is in their hands. Their survival may rest on the decision of the peer administrator to act. They are responsible for another person in a non-theoretical way. Drug users themselves feel this responsibility, as we can see when individuals who are trying to abstain from drugs refuse to carry naloxone; they do not want the obligation to care for overdosing people. In this way, carrying naloxone and educating others on overdose prevention are analogous to volunteering and other forms of participation in civic life: It signals that a person is an active participant is his or her community.

Using naloxone to save a life helps restore a sense of agency to drug users, and for many it contrasts with the trauma of other situations in their lives in which they feel powerless. Carrying Narcan allows drug users to see themselves in a positive role: that

of first responder, protector, or community member, rather than "addict". This role acts as a counter to societal messages internalized by drug users that they are powerless to control their own behavior and have nothing positive to contribute to society. Homeless intravenous drug users are accorded very little respect in our society. For a person like Arthur, his role as a peer naloxone administrator has earned him the respect of others in his social circle and in his community. In this community of drug users, carrying naloxone can raise an individual's social status while also raising their conception of what they are capable of. All of these factors likely contribute to the enthusiastic uptake of this service: Although no data is available, in my personal experience nearly every heroin user and around half of methamphetamine users who are offered naloxone training accept.

At its core, the decision to carry naloxone is an assertion on the part of the drug user that their life and the lives of others in their community have value. Not just as a narrative of redemption that culminates in "getting clean". Their lives have value because they don't want to die. Jason directly addressed the dehumanization of addicts when I asked him why he first decided to carry naloxone:

> Just for the general public out there that thinks that we're junkies and that's what we do, and if we die from overdose then that's what we get; We're people too. *(Jason, 40)*

Bibliography

ACS, American Chemical Society. 2016. "Naloxone." *Molecule of the Week Archive*.

Adams, Jerome. 2018. Surgeon General's Advisory on Naloxone and Opioid Overdose. edited by U.S. Department of Health and Human Services.

Ahmad, F.B., LM Rossen, MR Spencer, M Warner, and P. Sutton. 2019. Provisional drug overdose death counts. National Center for Health Statistics.

Behar, E, GM Santos, E Wheeler, C Rowe, and PO Coffin. 2015. "Brief Overdose Education Is Sufficient for Naloxone Distribution to Opioid Users." *Drug and Alcohol Dependence* 148:209-212.

Bennett, L., and P. Cook. 1996. "Alcohol and drug studies." In *Handbook of Medical Anthropology: Contemporary Theory and Practice*, edited by C. Sargent and T. Johnson, 2350-2351. Westport, CT: Green-wood Press.

Boddiger, David. 2006. "Fentanyl-laced Street Drugs Kill Hundreds." *The Lancet World Report* 368:569-570.

Carlson, Robert G., Merril Singer, Richard C. Stephens, and Claire E. Sterk. 2009. "Reflections on 40 Years of Ethnographic Drug Abuse Research: Implications for the Future." *Journal of Drug Issues*.

Courtwright, D. 2001. *Forces of Habit: Drugs and the Making of the Modern World*. Cambridge, MA: Harvard University Press.

Darke, Shane. 2014. "Opioid overdose and the power of old myths: What we thought we knew, what we do know and why it matters." *Drug and Alcohol Review* 33 (2):109-114.

Dettmer, Kristin, Bill Saunders, and John Strang. 2001. "Take home naloxone and the prevention of deaths from opiate overdose: two pilot schemes." *BMJ* 322:895-896.

Doleac, Jennifer, and Anita Mukherjee. 2018. "The Moral Hazard of Lifesaving Innovations: Naloxone Access, Opioid Abuse, and Crime."

Frank, David, Pedro Mateu-Gelabert, Honoria Guarino, Alex Bennett, Travis Wendel, Lauren jessell, and Anastasia Teper. 2015. "High risk and little knowledge: Overdose experiences and knowledge among young adult nonmedical prescription opioid users." *International Journal of Drug Policy* 26 (1):84-91.

Freeman, Patricia R., Emily R. Hankosky, Michelle R. Lofwall, and Jeffery C. Talbert. 2018. "The changing landscape of naloxone availability in the United States, 2011 – 2017." *Drug and Alcohol Dependence* 191:361-364. doi: https://doi.org/10.1016/j.drugalcdep.2018.07.017.

Gowan, Teresa, Sarah Whetstone, and Tanja Andic. 2012. "Addiction, agency, and the politics of self-control: Doing harm reduction in a heroin users' group." *Social Science and Medicine* 74:1251-1260.

Green, Traci, Robert Heimer, and Lauretta E. Grau. 2008. "Distinguishing signs of opioid overdose and indication for naloxone: an evaluation of six overdose training and naloxone distribution programs in the United States." *Addiction* 103 (6):979-989.

Jasinski, D. R., W. R. Martin, and C. A. Haertzen. 1967. "The human pharmacology and abuse potential of N-allylnoroxymorphone (naloxone)." *J Pharmacol Exp Ther* 157 (2):420-6.

Jones, Jermaine, Aimee Campbell, Verena E. Metz, and Sandra D. Comer. 2017. "No Evidence of Compensatory Drug Use Risk Behavior among Heroin Users After Receiving Take-Home Naloxone." *Addictive Behaviors* 71:104-106.

Kerr, Debra, Dietze Paul, Anne-Maree Kelly, and Damien Jolley. 2008. "Attitudes of Australian Heroin Users to Peer Distribution of Naloxone for Heroin Overdose: Perspectives on Intranasal Administration." *Journal of Urban Health* 85 (3):352-360.

Kilmer, Jason R., Jessica . Cronce, Scott B Hunt, and Christine M. Lee. 2012. "Reducing Harm Associated with Illicit Drug Use." In *Harm Reduction: Pragmatic Strategies for Managing High-Risk Behaviors*, edited by G. Alan Marlatt and Mary E. Larimer, 170-200. New York: Guilford Press.

Kim, Daniel, Kevin Irwin, and Kaveh Khoshnood. 2009. "Expanded Access to Naloxone: Options for Critical Response to the Epidemic of Opioid Overdose Mortality." *American Journal of Public Health* 99 (3):402-407.

Ksobiech, K. 2003. "A Meta-Analysis of Needle sharing, lending, andborrowing behaviors of needle exchange program attenders." *AIDS Education and Prevention* 15 (3):257-268.

Lankenau, Stephen E., Karla D. Wagner, Karol Silva, Aleksander Kecojevic, Ellen Iverson, Miles McNeely, and Alex H. Kral. 2013. "Injection Drug Users Trained by Overdose Prevention Programs: Responses to Witnessed Overdoses." *Journal of Community Health* 38 (1):133-141.

Maher, Lisa. 2002. "Don't Leave Us This Way: Ethnography and Injecting Drug Use in the Age of AIDS." *International Journal of Drug Policy* 13 (4):311-325.

Marlatt, G. Alan, Mary Larimer, and Katie Witkiewitz, eds. 2012. *Harm Reduction: Pragmatic Strategies for Managing High-Risk Behaviors*. 2 ed. New York: Guilford Press.

Marshall, Carley, Myra Piat, and Michel Perreault. 2018. "Exploring the psychological benefits and challenges experienced by peer-helpers participating in take-home naloxone programmes: A rapid review." *Drugs: Education, Prevention and Policy* 25 (3):280-291. doi: 10.1080/09687637.2016.1269724.

Marshall, Z., M.K Dechman, A. Minichiello, L. Alcock, and G. E. Harris. 2015. "Peering into the literature: A systematic review of the roles of people who inject drugs in harm reduction initiatives." *Drug and Alcohol Dependence* 151:1-14.

McAuley, Andrew, Alison Munro, and Avril Taylor. 2018. "“Once I’d done it once it was like writing your name”: Lived experience of T take-home naloxone administration by people who inject drugs." *International Journal of Drug Policy* 58:46-54.

McDonald, Rebecca, and John Strang. 2016. "Are Take-Home Naloxone Programmes Effective? Systematic Review Utilizing Application of the Bradford Hill Criteria." *Addiction* 11 (7):1177-1187.

Mclean, Katherine. 2012. "Needle Exchange and the Geography of Survival in the South Bronx." *International Journal of Drug Policy* 23 (4):295-302.

Morgan, Jody, and Alison L. Jones. 2018. "The role of naloxone in the opioid crisis." *Toxicology Communications* 2 (1):15-18. doi: 10.1080/24734306.2018.1458464.
Neale, Joanne. 1999. "Experiences of Illicit Drug Overdose: An Ethnographic Study of Emergency Hospital Attendances." *Contemporary Drug Problems* 26 (3):505-530.
NIDA. 2018. "Overdose Death Rates." accessed March 2019.
NIDA. 2019. "Opioid Overdose Crisis." accessed March 2019.
Peltzman, Samuel. 1975. "“The Effects of Automobile Safety Regulation." *Journal of Political Economy* 83 (4):677-725.
Quinn, Brendan, Daniel Chu, Lynn Wenger, Ricky Bluthenthal, and Alex Kral. 2014. "Syringe disposal among people who inject drugs in Los Angeles: The role of sterile syringe source." *International Journal of Drug Policy* 25:905-910.
Rhodes, T., Singer M., Bourgois P., Friedman S., and Strathdee S. 2005. "The social structural production of HIV risk among injecting drug users." *Social Science and Medicine* 61:1026-1044.
Sanju, George, Sylvie Boulay, and Damion Begley. 2010. "‘I saved a life’: a heroin addict’s reflections on managing an overdose using ‘take home naloxone’." *BMJ Case Reports*.
Seal, Karen, Moher Downing, Alex Kral, Shannon Singleton-Banks, Jon-Paul Hammond, Jennifer Lorvick, Dan Ciccarone, and Brian R. Edlin. 2003. "Attitudes about prescribing take-home naloxone to injection drug users for the management of heroin overdose: a survey of street-recruited injectors in the San Francisco Bay Area." *Journal of Urban Health* 80 (2):291-301.
Singer, M. 2006. *Something dangerous: Emergent and changing illicit drug use and community health*. Prospect Heights, IL: Waveland Press.
Singer, Merril. 2012. "Anthropology and addiction: an historical review." *Addiction* 107:1747-1755.
Strang, John, Shane Darke, Wayne Hall, Michael Farrel, and Robert Ali. 1996. "Heroin Overdose: the Case for Take-home Naloxone." *British Medical Journal* 312.
Strang, John, Beverly Powis, David Best, Louisa Vingoe, Paul Griffiths, Colin Taylor, Sarah Welch, and Michael Gossop. 2002. "Preventing opiate overdose fatalities with take-home naloxone: pre-launch study of possible impact and acceptability." *Addiction* 94 (2).
Sutter, Alan G. 1966. "The World of the Righteous Dope Fiend." *Issues in Criminology* 2 (2):177-222.
Tobin, Karin E., Melissa Davey, and Carl Latkin. 2005. "Calling emergency medical services during drug overdose: an examination of individual, social and setting correlates." *Addiction* 100:397-404.
Walley, Alexander, Ziming Xuan, H Holly Hackman, Emily Quinn, Maya Doe-Simkins, Amy Sorensen-Alawad, Sarah Ruiz, and Al Ozonoff. 2013. "Opioid Overdose Rates and Implementation of Overdose Education and Nasal Naloxone Distribution in Massachusetts: Interrupted Time Series Analysis." *BMJ*.
Werb, Daniel, Evan Wood, Will Small, Steffanie Strathdee, Kathy Li, Julio Montaner, and Thomas Kerr. 2008. "Effects of police confiscation of illicit drugs and

syringes among injection drug users in Vancouver." *International Journal of Drug Policy* 19:332-338.
Wheeler, Eliza, Stephen Jones, Michael Gilbert, and Peter Davidson. 2014. "Opioid Overdose Prevention Programs Providing Naloxone to Laypersons." *Morbidity and Mortality Weekly Report* 64 (23):631-635.
WHO. 2017. "FURANYL FENTANYL: Critical Review Report." Expert Committee on Drug Dependence, 39th Meeting, Geneva, Switzerland.
Wright, Nat, Nicola Oldham, Katharine Francis, and Lesley Jones. 2006. "Homeless drug users' awareness and risk perception of peer "Take Home Naloxone" use – a qualitative study." *Substance Abuse Treatment, Prevention, and Policy* 1 (28).
Zakrison, Tanya L., Paul A. Hamel, and Stephen W. Hwang. 2004. "Homeless People's Trust and Interactions With Police and Paramedics." *Journal of Urban Health* 81 (4).