



Awareness and Attitudes Toward Intranasal Naloxone Rescue for Opioid Overdose Prevention[☆]



Harshal Kirane, M.D.^{a,*}, Michael Ketteringham, M.D., M.P.H.^a, Sewit Bereket, M.P.H.^b, Richie Dima, M.D.^a, Ann Basta, M.D.^a, Sonia Mendoza, M.A.^b, Helena Hansen, M.D., Ph.D.^{b,c}

^a Hofstra Northwell School of Medicine - Staten Island University Hospital, Department of Psychiatry, Staten Island, NY 10305, USA

^b New York University Langone School of Medicine, Department of Psychiatry, NY, NY 10016, USA

^c Nathan Kline Institute for Psychiatric Research, Orangeburg, NY 10962, USA

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ABSTRACT

Opioid overdose prevention is a pressing public health concern and intranasal naloxone rescue kits are a useful tool in preventing fatal overdose. We evaluated the attitudes, knowledge, and experiences of patients and providers related to overdose and naloxone rescue. Over a six month period, patients and providers within a large community hospital in Staten Island were recruited to complete tailored questionnaires for their respective groupings. 100 patients and 101 providers completed questionnaires between August, 2014 and January, 2015. Patient participants were primarily Caucasian males with a mean age of 37.7 years, of which 65% accurately identified naloxone for opioid overdose, but only 21% knew more specific clinical features. 68% of patients had previously witnessed a drug overdose. Notably, 58% of patients anticipated their behavior would change if provided access to an intranasal naloxone rescue kit, of which 83% predicted an increase in opioid use. Prior overdose was significantly correlated with anticipating no change in subsequent opioid use pattern ($p = 0.02$). 99% of patients reported that their rapport with their health-care provider would be enhanced if offered an intranasal naloxone rescue kit. As for providers, 24% had completed naloxone rescue kit training, and 96% were able to properly identify its clinical application. 50% of providers felt naloxone access would decrease the likelihood of an overdose occurring, and 58% felt it would not contribute to high-risk behavior. Among providers, completion of naloxone training was correlated with increased awareness of where to access kits for patients ($p < 0.001$). This study suggests that patients and providers have distinct beliefs and attitudes toward overdose prevention. Patient-Provider discussion of overdose prevention enhances patients' rapport with providers. However, access to an intranasal naloxone rescue kit may make some patients more vulnerable to high-risk behavior. Future research efforts examining provider and patient beliefs and practices are needed to help develop and implement effective hospital-based opioid overdose prevention strategies.

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1. Introduction

Over the past decade, accidental overdose has surpassed motor vehicle accidents as the primary cause of accidental injury death in the United States (Warner, Chen, Makuc, Anderson, & Minino, 2011). Overdose deaths involving opioid analgesics have driven this trend, with poisoning deaths involving opioid analgesics more than tripling between the years 1999 and 2008 (CDC, 2015). More recently, heroin overdose deaths have been increasing as well which has been correlated with opioid analgesic dependent people transitioning to heroin (Dasgupta et al., 2014; Mars, Bourgois, Karandinos, Montero, & Ciccarone, 2014). In New

York City, 77% of all overdose deaths in 2013 involved an opioid analgesic or heroin (Paone, Tazou, O'Brien, & Nolan, 2014).

While overdose death is a nationwide public health concern, certain U.S. communities have been particularly affected. In these locations, higher relative rates of high-dose opioid prescribing correlate with higher rates of opioid analgesic misuse and overdose death (Paone et al., 2014). More recently, those same neighborhoods have seen an increase in heroin use and heroin overdose deaths. For example, during the year 2011, high-dose 100 mg morphine equivalent prescriptions were prescribed three times as often in Staten Island than in NYC as a whole. In Staten Island, the rate of overdose deaths increased by 65% between 2005 and 2011 while the rate of overdose deaths in NYC's other boroughs did not increase (Paone et al., 2014).

Various strategies have been implemented to reduce opioid analgesic overdose, such as prescription monitoring programs (Saving Lives and Protecting People: Preventing Prescription Painkiller Overdoses, 2013), prescription drug take-back days (National Take-

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* Corresponding author at: 392 Seguin Ave, Staten Island, NY 10309. Tel.: +1 718 226 2260.

E-mail address: hkirane@northwell.edu (H. Kirane).

Back Initiative, 2014), and safe opioid prescription guidelines (New York City Emergency Department, 2012). These strategies address the supply of prescription opioids, but do not propose strategies to counter the replacement of opioid analgesic use with heroin use. Another strategy that has been implemented, intranasal naloxone kit distribution (Opioid Overdose Prevention, 2014), addresses both opioid analgesic and heroin related overdose.

Recent prevention studies have focused on the impact of intranasal naloxone rescue kits on opioid analgesic and heroin overdose death rates (Doe-Simkins et al., 2014; Enteen et al., 2010). Naloxone is an opioid antagonist that displaces mu receptor agonists, countering respiratory depression brought on by opioid overdose. It is an especially promising overdose prevention tool as a bystander can administer it intranasally, providing reversal of the effects of most opioid overdose (excluding cases of considerably high doses, potency, and affinity in opioid receptors). An innovative method of naloxone distribution has been community-based interventions; the New York State Department of Health hosts overdose prevention programs that provide overdose education, naloxone training, and free intranasal naloxone kits. Recent studies have shown that drug users, family members, and peers are willing to be trained and are comfortable with naloxone, therefore peer-to-peer naloxone administration is a promising approach to reducing opioid overdose mortality rates (Galea et al., 2006; Piper et al., 2008).

Several approaches have demonstrated the efficacy of naloxone distribution in reducing fatal overdose rates, but important questions remain regarding the optimal implementation (i.e. setting, patient vs. network, public awareness campaigns), and even less data are available about the knowledge and attitudes of patients and providers in substance abuse and medical treatment settings regarding naloxone kits (Wagner, Valente, Casanova, et al., 2010).

Our present study focused on the knowledge, attitudes and experiences of a subset of the NYC population at high risk for experiencing or witnessing an opioid overdose, along with their potential healthcare providers (Wagner et al., 2010). Our aim was to answer the following questions: what is the extent of patient and provider knowledge of naloxone? What do overdose experiences look like for patients actively seeking substance use treatment? What impact do naloxone rescue kits have on patient rapport with providers? What impact does naloxone utilization have on perceptions of opioid use and risk? Specifically, our objectives were to assess intranasal naloxone awareness, utilization, impact on opioid use, and overdose experiences in the Staten Island community as efforts to increase naloxone education and kit distribution are underway.

2. Methods

2.1. Study design

We conducted cross-sectional, interviewer-administered surveys with patients and providers with a subset of provider self-administered surveys, from August 2014 to January 2015. Two trained medical school graduate research assistants completed face-to-face structured interviews with patient participants and most provider participants; a subset of provider participants self-administered the survey by anonymously filling in their answers. This study only reports on quantitative data findings from patient and provider surveys.

2.1.1. Study setting, population, and inclusion criteria

This pilot study was conducted at Staten Island University Hospital (SIUH), a large urban academic tertiary care center that serves a diverse spectrum of patients, of which over 50% receive Medicare/Medicaid. At the time of the study, the naloxone rescue kit implementation program at our institution was in its early phase. Distribution was focused on outpatient settings, namely methadone maintenance program clinics, but all staff within mental health services were required to complete a training course. Additionally, monthly public seminars took place, which

attracted 50–100 people per session, during the months of this exploratory study. Staff training seminars were initially led by the New York State Department of Health (NYSDOH) and consisted of a 4-hour lecture and hands on demonstration with each attendee receiving a kit. In New York, anyone who has completed a training course may be involved in the larger Opioid Education and Naloxone Distribution initiative, including physicians and social workers. In turn, our own staff began leading the training seminars for additional staff and the public.

All patients were receiving treatment for drug and/or alcohol detoxification, on a 23-bed detoxification inpatient unit located on the South Campus of SIUH. All patients met New York State Office of Alcoholism and Substance Abuse Services (NYS OASAS) admission criteria for drug and/or alcohol detoxification. Inclusion was not limited to patients with opioid use disorders. Based on detoxification unit admission trends from 2014, patients with opioid use disorders make up 75% of detoxification admissions. Exclusion criteria include inability to give informed consent, or complete the study interview due to severely impaired mental state or chronic cognitive deficits as determined by the investigator. Exclusion criteria also include a potential subject's unwillingness to participate.

Providers interviewed for this study were taken from a cross section of potential hospital-based intranasal naloxone providers. Provider questionnaires were completed by an array of potential clinicians involved in naloxone distribution including: physicians, social workers, and medical students (see Table 1).

2.1.2. Study protocol and data collection

For this pilot study we developed two sets of survey questions, a mix of multiple choice and open-ended responses, to explore attitudes and experiences related to opioid/opiate overdose. Our patient surveys derive some question formulation from the Opioid Overdose Knowledge Scale (OOKS) and the Opioid Overdose Attitude Scale (OOAS). However, both of our surveys are substantially different from the OOKS and OOAS and tailored for our study target populations and purposes, expanding on points of inquiry not addressed in those surveys; for example, our surveys asked about moral hazard, included open ended questions, and were not meant for pre and post knowledge or attitude assessment. We also refer to naloxone rescue kits as the brand name Narcan, since local trainings and distribution efforts in Staten Island referred to the

Table 1
Providers Characteristics.

		Totals (N = 101) N	%
Level of training	Total physicians	61	61%
	Residents	42	42%
	Attending	19	19%
	Physician assistant	8	8%
	Registered nurse	8	8%
	Other	24	24%
Primary hospital staff department affiliation	Psychiatry	19	19%
	Internal medicine	29	29%
	Emergency medicine	26	26%
	Surgery	2	2%
	No response	1	1%
Practice setting	Inpatient	25	25%
	Outpatient	16	16%
	Emergency	51	50%
	Intensive care unit	17	17%
	Detox/Rehab	24	24%
	Methadone maintenance Treatment program	17	17%
	Substance use disorders are: (select all that apply)	Treatable	90
Not treatable		4	4%
Medical illness		53	52%
Product of moral failings		35	35%
Psychiatric illness		64	63%
Buprenorphine provider?	Yes	12	12%
	No	88	86%

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