Narcan cops: Officer perceptions of opioid use and willingness to carry naloxone

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A B S T R A C T

Background: Opioid use has emerged as a significant public health crisis in cities across the United States. In Arizona, opioid overdose deaths increased by 65% from 2016 to 2018, leading the Governor of Arizona to declare a State of Emergency. Because police are often the first to arrive at the scene of an overdose, officers are central to an effective response to the opioid crisis in Arizona and elsewhere. However, many police officers do not carry naloxone, which can immediately reverse the life-threatening effects of an opioid overdose. Few studies examine officer perceptions of opioid use or their willingness to carry and administer naloxone. The degree to which officers accept this public health responsibility remains unclear.
Methods: The authors administered two waves of a survey to patrol officers in the Tempe (AZ) Police Department. The officers completed wave 1 approximately three months before the start of a program that trained and outfitted patrol officers with naloxone. Officers completed wave 2 of the survey several months after the program started. Relying on the Opioid Overdose Knowledge (OOKS), Competence, Concerns, and Attitudes (OOAS) of People who Overdose, and Naloxone-Related Risk Compensation Beliefs (NaRRC-B) scales, the survey captures officer attitudes regarding opioid use, willingness to carry and administer naloxone, and perceptions of their role in responding to the opioid crisis.
Results: At wave 1, officers conveyed moderate levels of confidence in recognizing an overdose and providing life-saving care. Officers indicated strong support for carrying naloxone and responding to opioid overdoses, and they recognized the value of treatment for users. At wave 2, officers reported significantly greater confidence and competence in responding to overdoses, and their support for carrying naloxone also increased. Both before and after program start, there was little variation in attitudes across gender, race/ethnicity, education, and length of service.
Conclusion: Officers accept this public health responsibility as part of their mission. Given that officers are frequently first on scene at overdoses and a matter of seconds can determine life or death, police-led naloxone programs will save lives in Tempe and elsewhere.

1. Introduction

The opioid crisis emerged quickly in the United States, driven primarily by physicians over-prescribing painkillers, pharmaceutical companies minimizing the risk of addiction, and the ease of accessing relatively cheap and potent heroin (Lurigio, Andrus, & Scott, 2018). From July 2016 to September 2017, opioid overdoses increased by 30% across 45 different states (Vivolo-Kantor et al., 2018). In 2017, nearly 50,000 Americans died from an opioid overdose (National Institute on Drug Abuse, 2020), leading the U.S. Department of Health and Human

Services to declare a national public health emergency (Johnson & Wagner, 2017). The number of opioid overdose deaths remained persistently high in 2018 (46,802; Wilson et al., 2020), and the crisis has worsened in 2020 during the COVID-19 pandemic (American Medical Association, 2020).

As the opioid crisis took hold, naloxone administration programs have been widely adopted as a safe, effective response to overdoses. Naloxone is an opioid antagonist that has been available for more than 40 years. "Within minutes, naloxone blocks the central effects of opioids, thus reversing respiratory depression and restoring normal breathing"

(Rando, Broering, Olson, Marco, & Evans, 2015: 1201–2).[1] Naloxone can be administered via two primary methods: intranasal or intramuscular. It has no notable side effects and has no ill effect if opioids are not in the body (Dahlem et al., 2017). Since 1996, naloxone kits have been distributed to more than 150,000 citizens and medical staff (including fire/emergency services), and by, 2015, the drug had been used to reverse more than 26,000 overdoses (Wheeler, Jones, Gilbert, & Davidson, 2015).

Because police are often the first to arrive at the scene of an overdose, officers are critical to an effective response to the opioid crisis. In October 2010, the Quincy Police Department in Massachusetts was one of the first law enforcement agencies to distribute naloxone to officers (Ronan, 2014). In 2013, Michael Botticelli, Deputy Director of the U.S. National Drug Control Policy, urged all law enforcement agencies to carry naloxone. He stated, "naloxone, a life-saving overdose reversal drug…should be in the patrol cars of every law enforcement professional across the nation" (Botticelli, 2013, para. 4). This prompted some law enforcement agencies, especially on the East Coast of the U.S., to provide and train their officers on naloxone administration (Davis et al., 2014). By 2018, 13% (2340) of the nearly 18,000 law enforcement agencies in the U.S. reported their officers carry naloxone (Lurigio et al., 2018). While this number increased to 2500 in 2019, most law enforcement agencies still have not deployed naloxone (Quinn, 2019).

Though the police are poised to play a central part of the response to opioid overdoses, there are few empirical studies on the intersection of policing and the opioid crisis. In particular, minimal research examines officers' perceptions of the crisis – including their acceptance of this public health responsibility as part of their mission, their willingness to carry naloxone, and their opinions of those who use opioids. Moreover, the few published studies on the topic show considerable reluctance among officers (Deonarine, Amlani, Ambrose, & Buxton, 2016; Green et al., 2013).

Officer attitudes about these issues are important, as a large body of psychological literature demonstrates the importance of attitudes in shaping behavior (Ajzen, 1991; Ajzen, Fishbein, Lohmann, & Albarracín, 2019; Fazio, 1986, 1990). In other words, what officers think about people who use opioids (PWUOs) and naloxone may affect the degree to which they accept overdose response as part of their mission, and more specifically, their willingness to administer naloxone. In one Massachusetts's study, Formica et al. (2018) found that having stigmatizing attitudes toward people who use drugs (PWUDs) impacted public safety personnel's willingness to help those who overdosed.

Notably, research suggests the connection between attitudes and behavior is more tenuous in some areas of policing. For example, Mastrofski, Ritti, and Snipes (1994) found no relationship between arrests for drunk driving and officer attitudes about enforcement. Stith (1990) reported a similar finding for domestic violence. Engel and Worden (2003) concluded that supervision and policy influence officer behavior more than attitudes. In relation to programs and policies serving PWUD, however, research consistently shows that officer attitudes affect how PWUD are treated by police (e.g., Beletsky, Macalino, & Burris, 2005; Cepeda et al., 2017; Davis et al., 2015) and if and how police implement new (i.e., not business-as-usual) approaches to drug problems (e.g., Cepeda et al., 2017; Davis et al., 2015; Formica et al., 2018; Rouhani et al., 2019).

The current study explores these issues through an examination of perceptions of opioid abuse, the police role in the opioid crisis, and willingness to carry naloxone among a sample of officers in the Tempe, Arizona Police Department (TPD). The authors administered two waves of an online survey using items from the Opioid Overdose Knowledge (OOKS) and Competence, Concerns, and Attitudes (OOAS) of People

who Overdose Scales (Williams, Strang, & Marsden, 2013) and the Naloxone-Related Risk Compensation Beliefs (NaRRC-B) Scale (Winograd, Davis, Niculete, Oliva, & Martielli, 2017). We administered wave 1 about three months before the start of a program where officers were trained to carry and use Narcan. Officers completed wave 2 six months after program start. The survey captures opinions on a range of issues, and we employ bivariate analyses to examine officer perceptions before and after they began carrying Narcan. We also explore whether attitudes are different across officer race/ethnicity, gender, education, and length of service. The article concludes with a discussion of the implications of the findings for the ongoing dialogue about the opioid crisis and the police role in responding to that crisis.

2. Literature review

2.1. Why the Police?

Response to an opioid overdose falls squarely within the mission of the police. First and foremost, the core function of police is to protect life (Skolnick & Fyfe, 1993; Kane & White, 2013; Police Executive Research Forum, 2016). Officers routinely provide life-saving and first-aid care to citizens in accidents, medical emergencies, and other crisis events. Their constant availability and rapid response well-position them to do so (Manning, 1978). Moreover, the police have a broad mandate to handle a "mind-boggling variety" of tasks, the vast majority of which are noncriminal (Bittner, 1974, 244). Renowned police scholar Egon Bittner (1974: 244) states, "no human problem exists, or is imaginable, about which it could be said with finality that this certainly could not become the proper business of the police."

2.2. Naloxone and the Police

Since 2010, some police officers have been carrying and administering naloxone when they respond to an overdose scene (Ronan, 2014). Many law enforcement officers (LEOs) who have not been equipped and trained in naloxone administration have expressed their frustrations at arriving at overdose scenes, typically prior to emergency medical personnel, and being unable to help (e.g., Green et al., 2013; Simmons, Rajan, Goldsamt, & Elliott, 2016). Despite these frustrations, more than 85% of law enforcement agencies in the U.S. do not deploy naloxone to officers in the field (Quinn, 2019). One potential reason for the slow adoption is cost – as naloxone ranges from $0–150. However, nearly all states have expanded law enforcement access to naloxone via state law, agencies that partner with their departments of public health or a community-based agency could obtain it for free, asset forfeiture funds could be used to buy naloxone, and SAMHSA has solicited law enforcement-lead projects to fund naloxone for their agencies. Rather, negative perceptions of PWUOs among LEOs, coupled with officer safety and liability concerns, likely play a more significant role in the slow adoption of such programs. As recent as 2017, Butler County, Ohio Sheriff Jones told *NBC* reporter Siemaszko (2017, para. 7), "There's no law that says police officers have to carry naloxone spray. Until there is, we're not going to use it." Thus, attitudinal research provides a solid foundation for understanding the issues surrounding police responses to the opioid crisis (see also Saloner et al., 2018).

Researchers have designed several surveys to capture attitudes, perceptions, and concerns regarding naloxone programs, including the OOKS, OOAS, and NaRRC-B Scales. The OOKS scale is rooted in the developers' research (see Williams et al., 2013) regarding trainings for the management of opioid overdoses. The OOAS scale is based on Watson et al. (2012) Drug Problems Perception Questionnaire (see Williams et al., 2013). While initially created for take-home naloxone programs, these scales have been adapted to assess LEOs' knowledge of opioid overdoses, attitudes of people who use and overdose, and receptiveness to naloxone distribution programs (Purviance, Ray, Tracy, & Southard, 2017; Ray, O'Donnell, & Kahre, 2015; Wagner, Bovet,

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[1] Narcan is a popular brand of naloxone (https://www.fda.gov/drugs/postmarket-drug-safety-information-patients-and-providers/narcan-naloxone-nasal-spray-approved-reverse-opioid-overdose.)

Haynes, Joshua, & Davidson, 2016). The NaRRC-B Scale is based on the fears of risk compensation literature associated with HIV prevention (e. g., condom distribution) and syringe-exchange programs (SEPs [see Winograd et al., 2019]).

A handful of studies in the U.S. and Canada assessed LEOs' attitudes about opioid use and naloxone using a variety of instruments and methods, including the OOKS, OOAS, and NaRRC-B scales (Purviance et al., 2017; Ray et al., 2015; Wagner et al., 2016), surveys (e.g., Banta-Green, Beletsky, Schoeppe, Coffin, & Kuszler, 2013; Smyser & Lubin, 2018), interviews (e.g., Green et al., 2013; Wagner et al., 2016), and focus groups (Deonarine et al., 2016). Generally, these studies examine the attitudes of line-level officers, and results demonstrate that officers have numerous concerns regarding opioid overdose response programs. These concerns include: the administration of naloxone (a) is not police business (Green et al., 2013); (b) could be done incorrectly by the LEO; (c) expands LEO liability (Deonarine et al., 2016; Green et al., 2013); (d) increases likelihood of LEO accidental exposure to opioids; (d) places LEOs at risk of interacting with a newly conscious and hostile individual (Smyser & Lubin, 2018); (e) implies that LEOs condone opioid use; (e) enables opioid use (Reichert, Lurigio, & Weisner, 2019); (f) causes people who use opioids (PWUOs) to use more; and (f) makes PWUOs less likely to seek treatment (e.g., Banta-Green et al., 2013; Green et al., 2013; Winograd et al., 2019). Other studies show some LEOs believe PWUOs are to blame for their use, deserve life-threatening outcomes, need to learn a lesson, and should be arrested so that they stop using (e. g., Banta-Green et al., 2013; Green et al., 2013; Winograd et al., 2019).

Research shows that individual characteristics influence LEO concerns about naloxone programs and attitudes toward PWUOs. A survey of LEOs in the U.S. South shows that younger, less educated and White officers hold more negative/punitive attitudes toward PWUOs than do older, more educated, and racial minority officers (Jorgensen, 2018). Davis et al. (2014) reported similar findings regarding LEO attitudes about syringe decriminalization. A survey of LEOs in Missouri substantiates those findings for younger and male officers who were more likely to believe that access to naloxone will likely lead to risky opioid use, though Whites were less likely than Blacks to think so (Winograd et al., 2019). Experience with overdoses *may* also affect LEO concerns and attitudes. Ray et al. (2015) survey of LEOs in Indianapolis shows that officers with overdose experiences have fewer concerns about naloxone programs. Alternatively, Purviance et al. (2017) found similar attitudes regardless of overdose experiences.

Many LEO concerns about naloxone and PWUOs can be rooted in their struggle with the inherent contradictions of doing both police work and harm reduction. Illicit drug use or prescription drug misuse is illegal. For many LEOs, adopting harm reduction-based practices can place them in a difficult position. Banta-Green et al. (2013) reported that many LEOs thought an overdose should not make the individual immune from criminal prosecution. Deonarine et al.'s (2016) focus groups with law enforcement in British Columbia also highlight that LEOs could not ignore large quantities of illicit substances at the scene of the overdose. Similarly, Green et al.'s (2013) interviews with LEOs in Connecticut and Rhode Island show how, "In many cases, officers cannot relinquish their law enforcement role at the scene" (p. 682). Still, while arrests at the scene of an overdose happen, Banta-Green et al.'s (2013) study shows that they are rare. In fact, LEOs in one study agreed that "arrests for drug possession or other activities may not serve the public good in an overdose situation" (Deonarine et al., 2016, p. 1).

Though the body of available research indicates police have significant concerns about their role in the opioid crisis, a few studies show LEO views of harm reduction programs can change (Silverman et al., 2012). Once equipped, trained, and using naloxone, some evidence suggests that LEOs exhibit enthusiasm and dedication to the program. They report greater job satisfaction and feelings of empowerment and gratification (Dahlem et al., 2017; Wagner et al., 2016). Most of their concerns around liability and potential harms about naloxone administration diminish (Dahlem et al., 2017; Purviance et al., 2017; Reichert

et al., 2019; Wagner et al., 2016), and they become more confident in their abilities to respond to an overdose (Dahlem et al., 2017; Reichert et al., 2019; Wagner et al., 2016). They also describe such programs as improving police-community relationships and enhancing overall public safety (Davis, Ruiz, Glynn, Picariello, & Walley, 2014; Lurigio et al., 2018; Ray et al., 2015). In Smyser & Lubin's (2018, p. 247) survey of Pennsylvania Chiefs of Police about naloxone, respondents agree that the "the overall benefits of equipping officers with naloxone outweigh the risks." Furthermore, 97% of police chiefs surveyed about naloxone in Illinois "agreed that 'Officers will do whatever [is] necessary to save someone's life in an overdose situation'" (Reichert et al., 2019:8). Most importantly, police administration of naloxone reduces opioid-related deaths (Rando et al., 2015).

Despite the growing support and evidence for LEO naloxone-administration programs, the adoption of such programs continues slowly. The OOKS, OOAS, and NaRRC-B scales provide a framework for understanding LEO attitudes regarding these programs, as well as whether those attitudes change after being trained to administer naloxone. Further, differences in knowledge, attitudes, and beliefs across LEO characteristics, including race, education level, gender, and years of service remain unclear. The lack of research on police officer attitudes about PWUOs and naloxone is troubling given the persistence of the opioid crisis over the last several years, especially during the COVID-19 global pandemic. The current study fills that gap by incorporating the OOKS, OOAS, and NaRRC-B scales in a survey of patrol officers in the Tempe, Arizona Police Department.

3. Methods and data

3.1. Backdrop for the current study: the opioid crisis in Arizona

According to the Arizona Department of Health Services (Arizona Department of Health Services (AZDHS), 2020a), statewide opioid overdose deaths increased by 20% from 2016 to 2017 and by an additional 22% in 2018. Arizona's Governor declared a State of Emergency on June 5, 2017. Since this declaration, AZDHS reports 57,087 suspected opioid overdoses and 7903 suspected opioid deaths (through December 11, 2020).[2] More than 50% of these overdoses occurred in Maricopa County, which includes Tempe, the site of the current study.

Police departments in Arizona have been gradual adopters of naloxone. The AZ State Legislature laid the foundation for statewide law enforcement naloxone programs in 2015 under House Bill 2489, which permitted law enforcement officers with proper training to administer naloxone and designated officers immune from "professional liability and criminal prosecution," so long as they acted "with reasonable care and in good faith" (HB 2489, 2015).The distribution and training of naloxone to law enforcement agencies in the state gained momentum in 2017 when the AZDHS began providing injectable naloxone kits to law enforcement agencies (Office of the Governor Doug Ducey, 2018b), and the Arizona Peace Officer Standards and Training Board (POST) developed its curriculum to administer naloxone (Arizona Peace Officer Standards and Training Board, 2017). The Arizona Opioid Epidemic Act of 2018 further expanded access to naloxone for law enforcement (Office of the Governor Doug Ducey, 2018a), but by 2019, many law enforcement agencies in Arizona, particularly in the major cities, including Phoenix (e.g., Phoenix PD [Planalp, 2019], Tucson (e.g., Pima County Sheriffs [Conover, 2020], and Tempe, had not fully deployed naloxone.

3.2. The research setting

The current study takes place in Tempe, Arizona, a city of 192,364 permanent residents located southeast of downtown Phoenix (U.S.

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[2] https://www.azdhs.gov/prevention/womens-childrens-health/injury-prevention/opioid-prevention/index.php).

Census, 2020). Tempe's population is predominantly White (68%) and Latino (22%). The median household income is $54,210, with about one-fifth of residents living under the poverty line (U.S. Census, 2020). Tempe is home to Arizona State University, comprised of approximately 70,000 students who reside and/or attend school in the city. In 2018, Tempe's violent and property crime rates per 100,000 residents were 484.2 and 4138.0, respectively –both well above the national rates (FBI, 2020).[3] The Tempe Police Department (TPD) is medium-sized, employing just under 350 sworn officers.

3.3. The Tempe first-responder opioid recovery project

From 2017 to 2018, the Tempe Fire Department responded to 471 suspected incidents of opioid abuse and administered naloxone in slightly more than 42% (or 202) of those incidents. Though Tempe police officers often arrived at suspected overdose scenes before Tempe Fire, officers did not carry naloxone. In October 2019, TPD received a $2 million grant from the Substance Abuse and Mental Health Services Administration (SAMHSA) to initiate the *Tempe First-Responder Opioid Recovery Project*. As part of the project, all Tempe police officers will be trained and equipped to administer naloxone. In addition, a 24/7 in-person "Crisis Outreach Response Team" will rapidly respond to any suspected overdose (either at the scene or the hospital) and provide follow-up support to the individual/family for up to 45 days after the overdose (e.g., referrals, counseling, recovery services, and transportation).

The current study reports on two waves of a survey administered to Tempe police officers three months before and six months after the start of the project. The wave 1 survey, administered through Google Forms, was made available to all 350 officers through the department's internal email system in late December 2019, followed by two reminder emails. The survey includes a brief overview of the new project, an informed consent, and approximately 50 questions that capture officers' knowledge, experiences, and attitudes regarding naloxone and opioid use. Survey items are a mix of multiple choice and true/false, combined with Likert scale statements (e.g., indicate your level of agreement with; completely disagree, disagree, agree, completely agree) based on Williams et al.'s (2013) OOKS and OOAS Scales and Winograd et al.'s (2017) NaRRC-B Scale. The survey also captures demographic characteristics of the officers. A total of 240 officers completed the survey (response rate of 69%). We followed the same procedure for wave 2 of the survey in October 2020. A total of 117 officers completed the survey (response rate of 33%).[4] We explore six research questions:

1. Are Tempe officers confident in their knowledge of opioid overdoses and naloxone?
2. Are Tempe officers willing to carry naloxone?
3. Do Tempe officers view opioid overdose response as part of their job?
4. How do officers view opioid overdose victims?
5. Do any of these attitudes change after officers begin carrying naloxone?
6. Is there variation in each of the aforementioned questions by officer race/ethnicity, gender, education, and length of service?

4. Analytical plan

For the current study, the authors focus on 32 items that capture

officers' attitudes on issues tied to the research questions. The analysis proceeds in two phases. First, we provide a univariate description of the survey findings. Second, we used independent samples *t*-tests to explore differences in attitudes from wave 1 to wave 2 and by officer demographics, and length of service.[5]

5. Results

Table 1 provides information on the officer samples, and there are no significant differences across waves. The majority of respondents are white (75.0–79.81%) and male (83.7–86.49%). Approximately one-fifth are nonwhite. About one-fifth of respondents are under age 30 (16.19–22.27%), and about half are over age 40 (officers in wave 2 are slightly older). More than three-quarters of the respondents have a college degree (78.51–79.82%), and 71.67–81.74% have been with the department for more than five years (officers in wave 2 have been with the department longer). The demographics of the officer samples match well with the demographics of the department as a whole.[6] Officers reported significant experience in dealing with opioids and overdoses, and that experience increased over time. At wave 1, approximately one-quarter (24.37%) reported dealing with opioids multiple times per shift;

Table 1
Demographic breakdown of the samples.

Group	Wave 1 ($n = 240$)	Wave 2 ($n = 117$)
	N (%)	N (%)
Race/Ethnicity[a]		
White	170 (79.81)	81 (75.00)
Black	9 (4.23)	3 (2.78)
Hispanic	25 (11.74)	18 (16.67)
Other	9 (4.23)	6 (5.56)
Gender		
Male	190 (83.70)	96 (86.49)
Female	37 (16.30)	15 (13.51)
Age		
20–29	47 (22.27)	17 (16.19)
30–39	73 (34.60)	35 (33.33)
40–49	75 (35.55)	42 (40.00)
50 and older	16 (7.58)	11 (10.48)
Education		
College degree	179 (78.51)	91 (79.82)
No college degree	49 (21.49)	23 (20.18)
Length of Service		
5 years or less	66 (28.33)	21 (18.26)
6 or more years	167 (71.67)	94 (81.74)
Frequency of Dealing With Opioids		
Not at all	29 (12.18)	12 (10.26)
Once per week	56 (23.53)	19 (16.24)
Less than once per shift	53 (22.27)	23 (19.66)
Once per shift	42 (17.65)	25 (21.37)
Multiple times per shift	58 (24.37)	38 (32.48)
Frequency of Overdose Response		
Not at all	45 (18.99)	20 (17.09)
Less than once per week	112 (47.26)	37 (31.62)
Once per week	68 (28.69)	50 (42.74)
Once per shift	9 (3.80)	8 (6.84)
Multiple times per shift	3 (1.27)	2 (1.71)
Officer's Experience Administering Narcan		
No	230 (97.87)	90 (78.26)
Yes	5 (2.13)	25 (21.74)

[a] Wave 1 has 27 missing, Wave 2 has 9 missing.

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[3] In 2018, the national violent crime was 368.9 per 100,000 citizens, and the property crime rate was 2199.5 per 100,000 citizens (https://ucr.fbi.gov/crime-in-the-u.s/2018/crime-in-the-u.s.-2018).

[4] The response rate dropped considerably at wave 2 for unknown reasons, though it may be tied to officer fatigue related to the COVID-19 pandemic, frustration over community protests following George Floyd's death, or both. The lower response rate at wave 2 is a limitation of the study.

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[5] We also conducted a series of ANOVAs as a sensitivity test for every comparison between wave 1 and wave, and by officer demographics, education, and length of service. The results did not change.

[6] Among the 350 sworn officers in TPD, 74.5% are white, 4.9% are Black, and 17.1% are Hispanic; 83.7% are male and 16.3% are female (White, Mora, & Orosco, 2020).

that percentage increased to one-third at wave 2 (32.48%). At wave 1, one-third report dealing with an overdose at least once per week (33.76%); at wave 2, that percentage increased to 51.29%. At wave 1, very few had administered naloxone (2.13%). Not surprisingly, the percentage of officers who had administered naloxone increased significantly at wave 2 (21.74%).

5.1. Overall perceptions

Table 2 shows officer perceptions for the survey items across four sub-sections: (1) opioid overdose competence and concerns; (2) the police role; (3) naloxone-related risk compensation beliefs; and (3) attitudes toward PWUOs. Item scores reflect the mean ratings measured on a four-point scale (1 = completely disagree, 2 = disagree, 3 = agree, 4 = completely agree) for the entire samples (listed highest to lowest in each sub-section). We describe the results from waves 1 and 2 by sub-section. At wave 1, officers reported moderate levels of confidence with regard to handling opioid overdoses and understanding issues involving naloxone, including the ability to recognize overdose signs (2.77), perform the recovery position (2.75), and deal effectively with an overdose (2.48). That said, many officers felt that they needed more training to increase their confidence in helping an overdose victim (3.15). Officers expressed less concern about making a mistake (2.32), getting sued (2.13), or accidentally hurting an overdose victim (1.97).

At wave 2, officer competence and confidence increased significantly:

- I need more training to feel confident to help an overdose victim (3.15 to 2.15);
- Ability to recognize signs of an overdose (2.77 to 3.22);
- Ability to perform the recovery position on an overdose victim (2.75 v. 3.22);
- Ability to deal effectively with an overdose (2.48 v. 3.10);
- I have enough information to deal with an overdose (1.63 v. 2.61).

Officers also expressed significantly less concern about making a mistake (2.32 v. 2.11), getting sued (2.13 v. 1.89), and accidentally hurting an overdose victim (1.97 v. 1.82). These findings strongly demonstrate the project training and experience with Narcan has dramatically improved officers' confidence in handling opioid overdoses.

At wave 1, officers reported relatively high levels of support for carrying naloxone and for responding to opioid overdoses as part of their job. Most respondents agreed that all Tempe officers should carry naloxone (3.04). The majority indicated they look forward to carrying it (2.82) and that carrying naloxone will help them to perform their job better (2.63). At wave 2, officer support for naloxone increased significantly: all Tempe officers should carry naloxone (3.04 v. 3.24); I look forward/am glad to be carrying naloxone (2.82 v. 3.09). Interestingly, officers increasingly agreed that police should not respond to overdoses (2.0 v. 2.28). These somewhat contradictory findings suggest officers are glad to be carrying naloxone and they believe it should be required, but they increasingly believe overdoses should be someone else's responsibility. This change in attitude is not uncommon (e.g., Green et al., 2013). This could also be exacerbated by the COVID-19 pandemic and increased scrutiny of police in 2020 ("defund" movement).

Last, at wave 1 officers expressed an understanding of addiction and the limitations of arrest in triggering recovery. Most indicated agreement that people who overdose need help to stop using (3.39) and that people who overdose should be offered (3.28) or mandated (3.01) treatment. Fewer officers agreed that people who overdose need to be arrested (2.31) or that arresting people who overdose will make them stop using (1.81). Officers disagreed that people who overdose deserve life-threatening outcomes as a consequence of their behavior (1.87). However, a fair number of officers agreed with the statements that people who overdose are to blame for the overdose (2.71), and if they

Table 2
Officer perceptions - Wave 1 and Wave 2.

Category	Item	Wave 1 Mean (SD)	Wave 2 Mean (SD)	t
Opioid Overdose Attitudes: Competence & Concerns	Ability to perform CPR on an overdose victim	3.22 (0.66)	3.30 (0.58)	−1.145
	More training to feel confident to help an overdose victim	3.15 (0.77)	2.15 (0.72)	11.665***
	Ability to recognize signs of an overdose	2.77 (0.66)	3.22 (0.54)	−6.810[a]***
	Ability to perform the recovery position on an overdose victim	2.75 (0.88)	3.22 (0.60)	−5.902[a]***
	Ability to deal effectively with an overdose	2.48 (0.72)	3.10 (0.66)	−7.899***
	Concerned about making a mistake in an overdose situation	2.32 (0.81)	2.11 (0.78)	2.343*
	Fear of being sued is a concern	2.13 (0.86)	1.89 (0.79)	2.507*
	Might accidently hurt an overdose victim	1.97 (0.67)	1.82 (0.65)	2.069*
	Concerned about aggressive behavior of the overdose victim	1.93 (0.69)	1.94 (0.72)	−0.151
	Reluctant to use naloxone due to withdrawal symptoms	1.82 (0.58)	1.82 (0.60)	0.018
	I have enough information to deal with an overdose	1.63 (0.61)	2.61 (0.69)	−13.604***
Police Role*	All Tempe police officers should carry naloxone	3.04 (0.87)	3.24 (0.72)	−2.333[a]*
	I look forward to/am glad to be carrying naloxone	2.82 (0.82)	3.09 (0.63)	−3.384[a]***
	I will be/am better able to perform my job with naloxone	2.63 (0.81)	2.81 (0.81)	−1.922
	I would be/am less worried about exposure when carrying naloxone	2.59 (0.83)	2.78 (0.80)	−2.002*
	Worried about accidental exposure to opioids/heroin	2.37 (0.82)	2.29 (0.84)	0.770
	Police should not respond to overdoses	2.00 (0.71)	2.28 (0.82)	−3.310**
Naloxone-Related Risk Compensation Beliefs	Naloxone will make users less likely to seek treatment	2.47 (0.81)	2.53 (0.74)	−0.669
	Naloxone availability will make users use more	2.46 (0.81)	2.53 (0.74)	−0.812
	Naloxone enables drug users	2.32 (0.74)	2.40 (0.78)	−0.840
	Administering Narcan means I condone opioid use	2.00 (0.77)	2.06 (0.73)	−0.657
	Limit the number of naloxone uses per person	1.98 (0.71)	2.02 (0.81)	−0.407
Opioid Overdose Attitudes: PWUOs	Overdose victims need help to stop using opioids/heroin	3.39 (0.71)	3.38 (0.55)	0.274[a]
	Overdose victims should be offered treatment	3.28 (0.64)	3.30 (0.55)	−0.334[a]
		3.01 (0.77)	2.93 (0.81)	0.923

Table 2 (*continued*)

Category	Item	Wave 1 Mean (SD)	Wave 2 Mean (SD)	t
	Overdose victims should have mandated treatment			
	Overdose victims are to blame for their own overdose	2.71 (0.77)	2.81 (0.72)	−1.227
	Users should have their own supply of naloxone	2.43 (0.79)	2.57 (0.75)	−1.672
	Overdose victims need to be arrested	2.31 (0.80)	2.26 (0.79)	0.541
	Overdose victims need to learn a lesson	2.27 (0.97)	2.47 (0.92)	−1.811
	Overdose victims deserve life-threatening outcomes	1.87 (0.69)	1.98 (0.71)	−1.386
	Overdose victims are from the homeless population	1.85 (0.67)	2.02 (0.66)	−2.239*
	Arresting overdose victims will make them stop using	1.81 (0.65)	1.89 (0.65)	−0.976

* *p*-value < .05.
** *p*-value < .01.
*** *p*-value < .001.
^a Unequal variances; Item scores reflect the mean ratings measured on a four-point scale (1 = completely disagree, 2 = disagree, 3 = agree, 4 = completely agree).

have access to naloxone, PWUOs will use opioids more (2.46) and be less likely to seek out treatment (2.47). Officers' attitudes about PWUOs and risk compensation did not change significantly at wave 2.

5.2. Perceptions by demographics, education, and length of service

Table 3 shows officer perceptions by sex, and there are few differences at either wave. At wave 1, there are only four statistically significant differences between males and females (out of 32). Females are significantly more likely than males to indicate a desire for additional training to help an overdose victim (3.41 v. 3.11). Female officers are also more likely to indicate concern about making a mistake in an overdose situation (2.70 v. 2.22) and about accidently hurting the person who overdosed (2.17 v. 1.93). Last, male officers are more likely than females to agree that arresting the person who overdosed will make them stop using (1.86 v. 1.59). At wave 2, there is only one significant difference: female officers are less worried than their male counterparts about exposure (to opioids) when carrying naloxone (3.29 v. 2.72).

There is also notable consistency in attitudes among white and nonwhite officers across survey waves (see Table 4).[7] There is only one significant difference at wave 1: racial/ethnic minority officers indicated greater concern about aggressive behavior from the person who overdosed (2.12 v. 1.83 for white officers). At wave 2, there are six statistically significant differences, all suggesting more negative attitudes among racial/ethnic minority officers. Compared to white officers, non-white officers were more concerned about aggressive behavior by the overdose victim (2.15 v. 1.83) and more reluctant to use naloxone due to withdrawal symptoms (2.0 v. 1.73). Non-white officers also indicated stronger agreement that naloxone will make users less likely to seek treatment (2.74 v. 2.37), will make PWUOs use more (2.74 v. 2.37), will enable drug users (2.63 v. 2.21), and that arresting overdose victims

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⁷ Although 240 officers completed the wave 1 survey, only 213 indicated their race/ethnicity. At wave 2, 112 officers indicated their race/ethnicity.

will make them stop using (2.19 v. 1.84).

Table 5 presents the perceptions of officers by education, and again, there is little variation in officer perceptions in either survey wave. At both waves, officers without a college degree are significantly more likely to agree that all Tempe police officers should carry naloxone (wave 1: 3.27 v. 2.99 for officers with a degree; wave 2: 3.61 v. 3.15 for officers with a degree). At wave 1, those without a college degree are also significantly more likely to agree that naloxone will make PWUOs use more (2.69 v. 2.41), and they are less likely to agree that PWUO should have their own supply of naloxone (2.20 v. 2.47 for officers with no college degree). At wave 2, officers without a college degree express greater confidence in performing CPR (3.57 v. 3.22) and the recovery position (3.48 v. 3.15), and greater agreement that they are glad to be carrying naloxone (3.50 v. 3.01).

Last, there were few differences by officer length of service (see Table 6). At wave 1, officers with 6+ years on the job are significantly more worried about accidental exposure to opioids/heroin (2.43 v. 2.18 for officers with 5 years or less on the job), and they are more likely to agree that police should not respond to overdoses (2.06 v. 1.83). Conversely, officers who had 5 years or less of service are significantly more likely to agree that most people who overdose are from the homeless population (2.14 v. 1.73). At wave 2, officers with less time on the job indicated greater agreement that carrying naloxone makes them better able to perform their job (3.25 v. 2.74); greater agreement that overdose victims deserve life-threatening outcomes (2.24 v. 1.90) and less agreement that users should have their own supply of naloxone (2.24 v. 2.65).[8]

6. Conclusion

The police are frequently called upon to deal with medical emergencies. They assume this responsibility because of their constant availability, broad mandate, rapid response, training, and central mission to protect life. They also greatly outnumber other first responders. Lurigio et al. (2018, p. 1063) notes, "nationwide, LEOs outnumber emergency medical technicians by a factor of 3 to 1 and paramedics by a factor of 10 to 1." Nevertheless, the current opioid crisis represents a significant expansion of the public health responsibilities of the police, in large part because of the potential to carry and administer naloxone to people experiencing an overdose. The extent to which police accept this new public health responsibility remains unclear.

The current study assessed attitudes about these issues among officers in the Tempe Police Department. The survey was administered twice: several months before and after the start of a program that trained and outfitted all Tempe patrol officers with naloxone. Several themes emerged from the wave 1 findings, before officers received the Narcan training. First, Tempe officers conveyed moderate levels of confidence in recognizing an overdose and providing life-saving care (e.g., CPR, recovery position). Most officers were not overly concerned about making a mistake, getting sued, or accidentally hurting the person who overdosed. These attitudes may be tied to Arizona law which provides officers with immunity from civil and criminal liability when administered

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⁸ We also tested for differences by experience dealing with overdoses, comparing officers who indicated they never or rarely respond to overdoses to those who respond one or more times per week (not shown given space constraints). Officer experience with overdoses did not influence attitudes about risk compensation beliefs and attitudes toward overdoses and PWUOs. Several other differences emerged. At waves 1 and 2, officers with more experience handling overdoses expressed significantly greater confidence in effectively recognizing (wave 1: 2.90 v. 2.71; wave 2: 3.37 v. 3.11) and responding to overdoses (wave 1: 2.64 v. 2.39; wave 2: 3.30 v. 2.97). At wave 2, officers with more experience also expressed less concern about getting sued (1.68 v. 2.03) and accidentally hurting an overdose victim (1.65 v. 1.93); and expressed less agreement with the statement that police should not respond to overdoses (2.04 v. 2.43). These findings are consistent with other studies (e.g., Ray et al., 2015).

Table 3

Officer perceptions by sex – Wave 1 and Wave 2.

Factor by rank (highest to lowest mean score)	Wave 1		t	Wave 2		t
	Male	Female		Male	Female	
	N = 190	N = 37		N = 96	N = 15	
Opioid Overdose Attitudes: Competence & Concerns	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Ability to perform CPR on an overdose victim	3.20 (0.66)	3.35 (0.63)	−1.284	3.26 (0.58)	3.53 (0.52)	−1.705
More training to feel confident to help an overdose victim	3.11 (0.76)	3.41 (0.60)	−2.232***	2.20 (0.73)	2.07 (0.59)	0.659
Ability to recognize signs of an overdose	2.81 (0.67)	2.68 (0.67)	0.859	3.19 (0.55)	3.33 (0.48)	−0.952
Ability to recover the recovery position on an overdose victim	2.73 (0.88)	2.78 (0.92)	−0.337	3.19 (0.60)	3.40 (0.63)	−1.218[a]
Ability to deal effectively with an overdose	2.50 (0.72)	2.32 (0.67)	1.376	3.08 (0.68)	3.13 (0.64)	−0.268
Concerned about making a mistake in an overdose situation	2.22 (0.77)	2.70 (0.81)	−3.496***	2.07 (0.82)	2.20 (0.41)	−0.934[a]
Fear of being sued is a concern	2.08 (0.85)	2.19 (0.84)	−0.687	1.88 (0.77)	1.93 (0.70)	−0.275
Might accidently hurt an overdose victim	1.93 (0.66)	2.17 (0.56)	−1.999*	1.83 (0.68)	1.87 (0.52)	−0.183
Concerned about aggressive behavior of the overdose victim	1.88 (0.66)	1.94 (0.63)	−0.554	1.92 (0.74)	1.93 (0.46)	−0.119[a]
Reluctant to use naloxone due to withdrawal symptoms	1.80 (0.53)	1.92 (0.68)	−1.021[a]	1.79 (0.60)	1.87 (0.52)	−0.471
I have enough information to deal with an overdose	1.64 (0.59)	1.54 (0.65)	−0.943	2.63 (0.68)	2.40 (0.83)	1.150
Police Role						
All Tempe police officers should carry naloxone	3.06 (0.87)	3.05 (0.88)	0.029	3.27 (0.66)	3.27 (0.88)	0.022
I look forward to/am glad to be carrying naloxone	2.81 (0.83)	2.97 (0.73)	−1.092	3.08 (0.58)	3.38 (0.65)	−1.719
Better able to perform my job with naloxone	2.66 (0.80)	2.65 (0.82)	0.088	2.84 (0.77)	2.92 (0.86)	−0.365
Less worried about exposure when carrying naloxone	2.58 (0.83)	2.68 (0.85)	−0.620	2.72 (0.76)	3.29 (0.73)	−2.610*
Worried about accidental exposure to opioids/heroin	2.34 (0.83)	2.32 (0.75)	0.134	2.28 (0.82)	2.35 (0.93)	−0.319
Police should not respond to overdoses	2.03 (0.73)	1.84 (0.60)	1.525	2.24 (0.82)	2.33 (0.72)	−0.419
Naloxone-Related Risk Compensation Beliefs						
Naloxone will make users less likely to seek treatment	2.43 (0.80)	2.57 (0.83)	−0.924	2.48 (0.70)	2.60 (0.83)	−0.610
Naloxone availability will make users use more	2.42 (0.82)	2.57 (0.77)	−0.999	2.49 (0.70)	2.53 (0.83)	−0.220
Naloxone enables drug users	2.28 (0.73)	2.42 (0.73)	−1.036	2.33 (0.74)	2.57 (0.76)	−1.128
Administering naloxone means I condone opioid use	1.97 (0.76)	2.11 (0.70)	−1.035	2.03 (0.69)	1.93 (0.62)	0.528
Limit the number of naloxone uses per person	1.96 (0.72)	2.08 (0.65)	−0.987	1.99 (0.76)	2.07 (0.83)	−0.372
Opioid Overdose Attitudes: PWUOs						
Overdose victims need help to stop using opioids/heroin	3.36 (0.72)	3.55 (0.69)	−1.478	3.36 (0.51)	3.53 (0.52)	−1.120
Overdose victims should be offered treatment	3.26 (0.65)	3.46 (0.51)	−1.762	3.28 (0.50)	3.47 (0.52)	−1.338
Overdose victims should have mandated treatment	3.03 (0.77)	2.95 (0.74)	0.585	2.94 (0.79)	2.93 (0.83)	0.039
Overdose victims are to blame for their own overdose	2.69 (0.75)	2.68 (0.78)	0.077	2.82 (0.65)	2.53 (0.99)	1.096[a]
Users should have their own supply of naloxone	2.44(0.77)	2.22 (0.82)	1.602	2.57 (0.68)	2.29 (1.1)	0.977[a]
Overdose victims need to be arrested	2.30 (0.75)	2.19 (0.91)	0.823	2.29 (0.79)	2.07 (0.70)	1.036
Overdose victims need to learn a lesson	2.27 (0.97)	2.19 (0.91)	0.444	2.43 (0.90)	2.27 (0.96)	0.675
Overdose victims deserve life-threatening outcomes	1.87 (0.69)	1.84 (0.60)	0.284	1.98 (0.67)	1.87 (0.64)	0.608
Overdose victims are from the homeless population	1.84 (0.66)	1.86 (0.63)	−0.214	1.99 (0.67)	2.27 (0.59)	−1.505
Arresting overdose victims will make them stop using	1.86 (0.64)	1.59 (0.55)	2.361*	1.92 (0.66)	1.8 (0.56)	0.697

Item scores reflect the mean ratings measured on a four-point scale (1 = completely disagree, 2 = disagree, 3 = agree, 4 = completely agree).

* *p*-value < .05.
** *p*-value < .01.
*** *p*-value < .001.
[a] Unequal variances.

naloxone, as long as they act "with reasonable care and in good faith" (HB 2489, 2015). These protections may be important to gaining officer buy-in.

That said, the vast majority indicated a willingness to get more training to help those who overdosed. Moreover, officers showed high levels of support for carrying naloxone and responding to opioid overdoses. In other words, they accept this public health responsibility as part of their mission. Third, officers recognized the value of treatment, and they understood the limited value of arrest in terms of reducing opioid use. In sum, officers had positive views about naloxone and overdose response even before the start of the project.

After receiving Narcan training (wave 2), officers expressed statistically significant increases in support for carrying the medication, as well as large increases in confidence and competence in successfully handling overdoses. Ten months into the program, officers felt much more confident in their ability to recognize and deal effectively with an overdose. They were glad to be carrying Narcan, and they were significantly less concerned about getting sued, making a mistake, or accidentally hurting an overdose victim. Their attitudes about overdoses, PWUOs, and risk compensation beliefs did not change. Though there was an increase in the percentage of officers questioning whether police should respond to overdoses, the majority of officers still view emergency response to overdoses as their responsibility.

Prior research has reported attitudinal differences by officer demographics (Jorgensen, 2018; Winograd et al., 2019), but we found notable consistency in attitudes by officer sex, race/ethnicity, education, or length of service. Of the 32 specific attitudes examined, male and female officers differed significantly on four at wave 1 and only one at wave 2. White and non-white officers differed significantly on one survey item at wave 1 and six at wave 2. Officers with and without a college degree differed on three attitudes at wave 1 and four at wave 2. Only three significant differences emerged at each wave when comparing attitudes across officer time on the job.

That said, we did report a few noteworthy differences. For example, officers with no college degree expressed stronger support for carrying naloxone, compared to their colleagues with a college degree, at both waves. This finding is a bit counterintuitive and contrary to the literature (e.g., Jorgensen, 2018), as we anticipated a positive relationship between a college degree and support for naloxone. The reason for this finding is unclear. Perhaps officers without a college degree have more direct experience with opioid use on-duty, and this experience has influenced their support for naloxone. At wave 2, non-white officers expressed a number of more negative attitudes than their white counterparts (e.g., greater agreement that arresting an overdose victim will make them stop using). The more negative attitudes at wave 2 among non-white officers is surprising, although Wagner et al. (2016) also

Table 4

Officer perceptions by race – Wave 1 and Wave 2.

Factor by rank (highest to lowest mean score)	Wave 1		t	Wave 2		t
	White	Racial Minority		White	Racial Minority	
	N = 170	N = 43		N = 81	N = 27	
Opioid Overdose Attitudes: Competence & Concerns	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Ability to perform CPR on an overdose victim	3.22 (0.68)	3.35 (0.53)	−1.129	3.32 (0.54)	3.22 (0.70)	0.759
More training to feel confident to help an overdose victim	3.16 (0.74)	3.26 (0.69)	−0.777	2.20 (0.66)	2.00 (0.73)	1.310
Ability to recognize signs of an overdose	2.84 (0.64)	2.67 (0.71)	1.436	3.21 (0.52)	3.19 (0.62)	0.224
Ability to perform the recovery position on an overdose victim	2.77 (0.91)	2.79 (0.77)	−0.182	3.20 (0.64)	3.26 (0.53)	−0.499[a]
Ability to deal effectively with an overdose	2.49 (0.74)	2.51 (0.63)	−0.143	3.05 (0.69)	3.19 (0.62)	−0.909
Concerned about making a mistake in an overdose situation	2.29 (0.81)	2.33 (0.84)	−0.226	2.05 (0.76)	2.19 (0.79)	−0.800
Fear of being sued is a concern	2.08 (0.85)	2.09 (0.87)	−0.073	1.83 (0.74)	1.96 (0.76)	−0.822
Might accidently hurt an overdose victim	1.95 (0.67)	2.02 (0.69)	−0.665	1.79 (0.61)	2.00 (0.78)	−1.443
Concerned about aggressive behavior of the overdose victim	1.83 (0.63)	2.12 (0.80)	−2.177[a]***, ***	1.83 (0.65)	2.15 (0.82)	−2.083*
Reluctant to use naloxone due to withdrawal symptoms	1.79 (0.56)	1.81 (0.59)	−0.268	1.73 (0.55)	2.00 (0.68)	−2.112*
I have enough information to deal with an overdose	1.62 (0.58)	1.58 (0.63)	0.422	2.63 (0.68)	2.59 (0.75)	0.239
Police Role						
All Tempe police officers should carry naloxone	3.05 (0.89)	3.12 (0.88)	−0.454	3.25 (0.72)	3.37 (0.49)	−0.998[a]
I look forward to/am glad to be carrying naloxone	2.83 (0.81)	2.88 (0.89)	−0.326	3.09 (0.59)	3.26 (0.45)	−1.353
Better able to perform my job with naloxone	2.68 (0.84)	2.60 (0.73)	0.531	2.79 (0.77)	3.00 (0.75)	−1.202
Less worried about exposure when carrying naloxone	2.60 (0.85)	2.72 (0.85)	−0.851	2.80 (0.70)	2.80 (0.91)	−0.308
Worried about accidental exposure to opioids/heroin	2.37 (0.81)	2.30 (0.94)	0.480	2.31 (0.82)	2.30 (0.87)	0.087
Police should not respond to overdoses	1.99 (0.74)	1.98 (0.56)	0.115[a]	2.28 (0.83)	2.26 (0.71)	0.139
Naloxone-Related Risk Compensation Beliefs						
Naloxone will make users less likely to seek treatment	2.50 (0.80)	2.37 (0.93)	0.883	2.37 (0.64)	2.74 (0.81)	−2.425*
Naloxone availability will make users use more	2.46 (0.82)	2.47 (0.88)	−0.025	2.37 (0.66)	2.74 (0.76)	−2.425*
Naloxone enables drug users	2.29 (0.73)	2.38 (0.82)	−0.691	2.21 (0.71)	2.63 (0.74)	−2.621*
Administering naloxone means I condone opioid use	1.95 (0.74)	2.14 (0.86)	−1.469	1.98 (0.67)	2.15 (0.72)	−1.135
Limit the number of naloxone uses per person	1.93 (0.68)	2.07 (0.86)	−1.012[a]	1.93 (0.78)	2.11 (0.70)	−1.104
Opioid Overdose Attitudes: PWUOs						
Overdose victims need help to stop using opioids/heroin	3.39 (0.72)	3.52 (0.67)	−1.054	3.40 (0.52)	3.37 (0.49)	0.218
Overdose victims should be offered treatment	3.32 (0.66)	3.23 (0.61)	0.770	3.31 (0.49)	3.30 (0.54)	0.110
Overdose victims should have mandated treatment	2.99 (0.78)	3.09 (0.78)	−0.740	2.84 (0.80)	3.15 (0.72)	−1.784
Overdose victims are to blame for their own overdose	2.70 (0.74)	2.72 (0.83)	−0.130	2.75 (0.73)	2.93 (0.55)	−1.122
Users should have their own supply of naloxone	2.40 (0.77)	2.50 (0.92)	−0.690	2.56 (0.69)	2.37 (0.84)	1.182
Overdose victims need to be arrested	2.25 (0.77)	2.35 (0.87)	−0.730	2.26 (0.80)	2.37 (0.69)	−0.644
Overdose victims need to learn a lesson	2.30 (0.97)	2.16 (1.0)	0.792	2.41 (0.89)	2.52 (0.94)	−0.554
Overdose victims deserve life-threatening outcomes	1.87 (0.64)	1.84 (0.75)	0.279	1.96 (0.66)	2.00 (0.98)	−0.252
Overdose victims are from the homeless population	1.84 (0.61)	1.79 (0.77)	0.382[a]	1.98 (0.61)	2.26 (0.76)	−1.958
Arresting overdose victims will make them stop using	1.85 (0.66)	1.76 (0.62)	0.746	1.84 (0.56)	2.19 (0.79)	−2.131[a]*

Item scores reflect the mean ratings measured on a four-point scale (1 = completely disagree, 2 = disagree, 3 = agree, 4 = completely agree).

* *p*-value < .05.
** *p*-value < .01.
*** *p*-value < .001
[a] Unequal variances.

found non-white officers to have more punitive attitudes toward PWUOs. Nevertheless, the primary takeaway from the examination of attitudes across officer characteristics is the consistency over time and across demographics, education, and length of service. Future research should continue to explore the extent to which attitudes may vary (or not) by officer characteristics.

The findings from the current study have a number of implications. First, officers' acceptance of this public health responsibility and their willingness to administer naloxone are critical prerequisites to an effective response to the opioid crisis. The police as an institution are notoriously resistant to change. Guyot (1979) equated change in a police department to "bending granite," and officer resistance to new tools and strategies can impede innovation (Skogan, Steiner, DuBois, Gudell, &

Fagan, 2002; White & Malm, 2020). Police officer acceptance of this role will save lives. Officers are frequently the first on scene of an opioid overdose, and time is critical. Life or death can hinge on a matter of seconds.[9]

Second, the findings here are more positive than those reported in prior research. Past studies examining officer perceptions have reported reluctance to take on this public health responsibility because of concerns about increased liability, accidental exposure to opioids, and potential aggression from citizens after naloxone takes effect (Deonarine et al., 2016; Green et al., 2013). Though some studies show improved attitudes after officers begin carrying naloxone (Dahlem et al., 2017; Wagner et al., 2016), Tempe officers embraced this responsibility months before carrying the medication, and their attitudes became even

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[9] By December 4, 2020, Tempe police officers have administered Narcan to 78 individuals who were suspected of experiencing an opioid overdose. Of those 78, 63 individuals responded positively to the Narcan and recovered from their overdose. Those 63 individuals were unresponsive, not breathing, and were dying when police arrived at the scene. All 63 survived the overdose because of Narcan. Nine individuals could not be revived at the scene or hospital. The Narcan was ineffective because the person had already died prior to the officer's arrival. Six Narcan administrations were deemed ineffective because the person was not experiencing an opioid overdose.

Table 5
Officer perceptions by education level – Wave 1 and Wave 2.

Factor by rank (highest to lowest mean score)	Wave 1		t	Wave 2		T
	College Degree	No College Degree		College Degree	No College Degree	
	N = 179	N = 49		N = 91	N = 23	
Opioid Overdose Attitudes: Competence & Concerns	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Ability to perform CPR on an overdose victim	3.25 (0.61)	3.18 (0.75)	0.531[a]	3.22 (0.57)	3.57 (0.51)	−2.638**
More training to feel confident to help an overdose victim	3.16 (0.72)	3.20 (0.79)	−0.355	2.13 (0.69)	2.26 (0.86)	−0.763
Ability to recognize signs of an overdose	2.78 (0.66)	2.76 (0.69)	0.200	3.19 (0.54)	3.30 (0.56)	−0.911
Ability to perform the recovery position on an overdose victim	2.73 (0.87)	2.82 (0.91)	−0.609	3.15 (0.59)	3.48 (0.59)	−2.338*
Ability to deal effectively with an overdose	2.47 (0.70)	2.51 (0.77)	−0.308	3.08 (0.67)	3.17 (0.65)	−0.624
Concerned about making a mistake in an overdose situation	2.31 (0.79)	2.31 (0.85)	0.009	2.09 (0.74)	2.22 (0.95)	−0.706
Fear of being sued is a concern	2.13 (0.86)	1.98 (0.78)	1.094	1.88 (0.76)	1.91 (0.90)	−0.185
Might accidently hurt an overdose victim	1.99 (0.65)	1.90 (0.65)	0.863	1.80 (0.58)	1.87 (0.92)	−0.335[a]
Concerned about aggressive behavior of the overdose victim	1.94 (0.69)	1.80 (0.58)	1.321	1.91 (0.68)	1.96 (0.88)	−0.264
Reluctant to use naloxone due to withdrawal symptoms	1.80 (0.53)	1.86 (0.65)	−0.597	1.79 (0.51)	1.87 (0.87)	−0.427[a]
I have enough information to deal with an overdose	1.60 (0.54)	1.69 (0.74)	−0.849[a]	2.58 (0.67)	2.70 (0.82)	−0.692
Police Role						
All Tempe police officers should carry naloxone	2.99 (0.88)	3.27 (0.76)	−1.977*	3.15 (0.74)	3.61 (0.50)	−3.498[a]**
I look forward to/am glad to be carrying naloxone	2.82 (0.81)	2.94 (0.80)	−0.920	3.01 (0.62)	3.50 (0.51)	−3.434***
Better able to perform my job with naloxone	2.64 (0.77)	2.71 (0.91)	−0.556	2.78 (0.75)	3.05 (0.95)	−1.389
Less worried about exposure when carrying naloxone	2.60 (0.81)	2.59 (0.93)	0.052	2.78 (0.72)	2.91 (1.0)	−0.612
Worried about accidental exposure to opioids/heroin	2.39 (0.84)	2.27 (0.76)	0.951	2.30 (0.83)	2.22 (0.95)	0.414
Police should not respond to overdoses	2.02 (0.70)	1.90 (0.74)	1.088	2.32 (0.80)	2.13 (0.92)	0.977
Naloxone-Related Risk Compensation Beliefs						
Naloxone will make users less likely to seek treatment	2.43 (0.81)	2.56 (0.82)	−0.984	2.53 (0.69)	2.48 (0.90)	0.287
Naloxone availability will make users use more	2.41 (0.78)	2.69 (0.88)	−2.117*	2.51 (0.69)	2.57 (0.90)	−0.349
Naloxone enables drug users	2.30 (0.73)	2.37 (0.76)	−0.591	2.37 (0.73)	2.43 (0.95)	−0.377
Administering naloxone means I condone opioid use	1.99 (0.68)	1.90 (0.78)	0.856	1.99 (0.73)	2.04 (1.0)	−0.241[a]
Limit the number of naloxone uses per person	1.98 (0.74)	2.00 (0.79)	−0.140	2.02 (0.65)	2.09 (0.90)	−0.324[a]
Opioid Overdose Attitudes: PWUOs						
Overdose victims need help to stop using opioids/heroin	3.41 (0.73)	3.43 (0.61)	−0.163	3.41 (0.52)	3.39 (0.50)	0.128
Overdose victims should be offered treatment	3.30 (0.63)	3.29 (0.65)	0.047	3.27 (0.50)	3.48 (0.51)	−1.748
Overdose victims should have mandated treatment	3.00 (0.78)	3.06 (0.73)	−0.501	2.89 (0.79)	3.17 (0.78)	−1.556
Overdose victims are to blame for their own overdose	2.69 (0.76)	2.78 (0.71)	−0.711	2.85 (0.70)	2.70 (0.76)	0.906
Users should have their own supply of naloxone	2.47 (0.78)	2.20 (0.79)	2.078*	2.63 (0.69)	2.30 (0.93)	1.888
Overdose victims need to be arrested	2.29 (0.75)	2.29 (0.92)	0.027	2.24 (0.75)	2.26 (0.92)	−0.104
Overdose victims need to learn a lesson	2.24 (0.98)	2.35 (0.90)	−0.703	2.44 (0.87)	2.52 (1.1)	−0.380
Overdose victims deserve life-threatening outcomes	1.87 (0.69)	1.88 (0.63)	−0.068	1.93 (0.65)	2.09 (0.85)	−0.948
Overdose victims are from the homeless population	1.85 (0.64)	1.82 (0.67)	0.291	1.97 (0.60)	2.22 (0.85)	−1.329[a]
Arresting overdose victims will make them stop using	1.85 (0.65)	1.80 (0.61)	0.543	1.88 (0.60)	1.95 (0.84)	−0.403[a]

Item scores reflect the mean ratings measured on a four-point scale (1 = completely disagree, 2 = disagree, 3 = agree, 4 = completely agree).

* p-value < .05.
** p-value < .01.
*** p-value < .001.
[a] Unequal variances.

more positive after they began carrying it. Why are the views of Tempe police officers so positive? TPD is widely considered an innovative agency that embraces the principles of 21st century policing (e.g., White, Todak, & Gaub, 2018).[10] Though most law enforcement agencies in the U.S. do not deploy naloxone to their officers, TPD are relatively late adopters of naloxone in Maricopa County (AZ). In fact, 15 of the 19 law enforcement agencies in Maricopa County or 79% were already carrying naloxone at the time the Tempe officers took the wave 1 survey (see Arizona Department of Health Services (AZDHS), 2020b). Also, at both waves 1 and 2 more than 80% of Tempe officers reported that they had responded to an opioid overdose. Their prior experience with overdoses, their inability to respond effectively, and their fellow officers in other departments already carrying naloxone likely drove their willingness to accept this responsibility.

Last, the findings are especially important given both local, U.S., and international events. At the local level, the TPD leadership has made a

[10] Prior to her resignation in October 2020, Chief Moir was the President of the Police Executive Research Forum (PERF), a national police leadership organization (https://www.policeforum.org/assets/December2019Debate.pdf). The Tempe leadership continues to embrace evidence-based policing, and actively partners with researchers on a wide range of topics, from de-escalation training and body-worn cameras to youth engagement.

significant commitment to a naloxone-administration program. Findings from the current study suggest little resistance among patrol officers. While Tempe officers expressed strong support for carrying naloxone, some do have misconceptions of PWUOs, opioid use, and the effects of naloxone. Training curricula on naloxone can be enhanced to reduce officer misconceptions. For example, training can incorporate PWUOs and their experiences to discuss stigmatization and techniques for engagement to improve police-PWUO relations (Wagner et al., 2016). Training naloxone administrators in "careful titration, assurances, communication, and care" can also reduce the chance of conflict, manage the aggression that may result from receiving naloxone, and enhance the reviving experience (Farrugia et al., 2020, p. 8; see also Elliot, Bennett, & Wolfson-Stofko, 2019; Parkin et al., 2020). Information on the rarity of both aggressive behavioral responses upon revival (e.g., Banjo et al., 2014; Barboza & Angulski, 2020), particularly when using intranasal naloxone (see Wermeling, 2015), and accidental exposure (0.1% [Barboza & Angulski, 2020]) to opioids should also be presented. Importantly, trainings should also highlight the impact of LEO-administered naloxone on the substance using behaviors of the survivor. Studies show that between 25% (Pollini, McCall, Mehta, Vlahov, & Strathdee, 2006) and 33% (Wagner et al., 2016) seek treatment following an overdose reversal. And this is more likely when the LEO refers the person who overdosed to treatment (Wagner et al., 2016) and

Table 6

Officer perceptions by length of service – Wave 1 and Wave 2.

Factor by rank (highest to lowest mean score)	Wave 1		t	Wave 2		t
	5 years or less	6 years or more		5 years or less	6 years or more	
	N = 66	N = 167		N = 21	N = 94	
Opioid Overdose Attitudes: Competence & Concerns	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Ability to perform CPR on an overdose victim	3.18 (0.68)	3.25 (0.64)	−0.670	3.43 (0.51)	3.27 (0.59)	1.170
More training to feel confident to help an overdose victim	3.18 (0.76)	3.14 (0.75)	0.346	1.95 (0.50)	2.20 (0.76)	−1.868[a]
Ability to recognize signs of an overdose	2.76 (0.66)	2.77 (0.67)	−0.153	3.40 (0.60)	3.17 (0.52)	1.744
Ability to perform the recovery position on an overdose victim	2.86 (0.88)	2.69 (0.88)	1.338	3.38 (0.59)	3.19 (0.61)	1.295
Ability to deal effectively with an overdose	2.56 (0.70)	2.44 (0.72)	1.133	3.33 (0.58)	3.04 (0.67)	1.839
Concerned about making a mistake in an overdose situation	2.38 (0.86)	2.29 (0.77)	0.836	1.95 (0.74)	2.15 (0.79)	−1.043
Fear of being sued is a concern	2.17 (0.86)	2.08 (0.85)	0.688	1.62 (0.59)	1.95 (0.81)	−1.755
Might accidently hurt an overdose victim	1.94 (0.69)	1.97 (0.64)	−0.461	1.71 (0.56)	1.84 (0.68)	−0.795
Concerned about aggressive behavior of the overdose victim	1.98 (0.74)	1.88 (0.64)	1.073	1.95 (0.59)	1.91 (0.61)	0.216
Reluctant to use naloxone due to withdrawal symptoms	1.88 (0.57)	1.79 (0.55)	1.080	1.76 (0.54)	1.82 (0.61)	−0.384
I have enough information to deal with an overdose	1.65 (0.59)	1.62 (0.61)	0.395	2.47 (0.68)	2.64 (0.70)	−0.963
Police Role						
All Tempe police officers should carry naloxone	3.17 (0.82)	3.01 (0.88)	1.294	3.48 (0.51)	3.19 (0.75)	1.649
I look forward to/am glad to be carrying naloxone	2.98 (0.83)	2.77 (0.80)	1.782	3.33 (0.48)	3.06 (0.64)	1.860
Better able to perform my job with naloxone	2.75 (0.80)	2.61 (0.81)	1.163	3.25 (0.55)	2.74 (0.82)	2.639**
Less worried about exposure when carrying naloxone	2.65 (0.82)	2.58 (0.84)	0.575	3.00 (0.89)	2.76 (0.74)	1.268
Worried about accidental exposure to opioids/heroin	2.18 (0.81)	2.43 (0.82)	−2.020*	2.19 (0.98)	2.31 (0.82)	−0.590
Police should not respond to overdoses	1.83 (0.52)	2.06 (0.75)	−2.650[a]***	2.00 (0.84)	2.34 (0.81)	−1.730
Naloxone-Related Risk Compensation Beliefs						
Naloxone will make users less likely to seek treatment	2.57 (0.87)	2.41 (0.78)	1.384	2.48 (0.68)	2.52 (0.74)	−0.255
Naloxone availability will make users use more	2.55 (0.88)	2.43 (0.77)	1.045	2.52 (0.68)	2.51 (0.74)	0.074
Naloxone enables drug users	2.34 (0.71)	2.30 (0.74)	0.353	2.43 (0.60)	2.37 (0.80)	0.338
Administering naloxone means I condone opioid use	2.05 (0.72)	1.94 (0.70)	0.984	1.75 (0.64)	2.05 (0.81)	−1.569
Limit the number of naloxone uses per person	2.08 (0.82)	1.95 (0.72)	1.150	2.14 (0.65)	2.01 (0.71)	0.776
Opioid Overdose Attitudes: PWUOs						
Overdose victims need help to stop using opioids/heroin	3.45 (0.66)	3.38 (0.73)	0.602	3.33 (0.48)	3.41 (0.52)	−0.662
Overdose victims should be offered treatment	3.34 (0.62)	3.28 (0.64)	0.682	3.38 (0.50)	3.31 (0.51)	0.592
Overdose victims should have mandated treatment	3.14 (0.75)	2.97 (0.76)	1.520	3.00 (0.83)	2.92 (0.78)	0.393
Overdose victims are to blame for their own overdose	2.64 (0.72)	2.73 (0.78)	−0.861	3.00 (0.45)	2.77 (0.75)	1.876
Users should have their own supply of naloxone	2.32 (0.79)	2.46 (0.79)	−1.163	2.24 (0.83)	2.65 (0.72)	−2.281*
Overdose victims need to be arrested	2.38 (0.82)	2.27 (0.78)	0.961	2.29 (0.72)	2.23 (0.80)	0.274
Overdose victims need to learn a lesson	2.41 (0.91)	2.19 (0.98)	1.536	2.62 (0.74)	2.41 (0.96)	0.919
Overdose victims deserve life-threatening outcomes	1.85 (0.64)	1.87 (0.69)	−0.276	2.24 (0.62)	1.90 (0.69)	2.035*
Overdose victims are from the homeless population	2.14 (0.65)	1.73 (0.62)	4.474***	2.19 (0.40)	1.98 (0.70)	1.860[a]
Arresting overdose victims will make them stop using	1.85 (0.66)	1.81 (0.64)	0.397	1.86 (0.48)	1.90 (0.68)	−0.287

Item scores reflect the mean ratings measured on a four-point scale (1 = completely disagree, 2 = disagree, 3 = agree, 4 = completely agree).

* *p*-value < .05.

** *p*-value < .01.

*** *p*-value < .001.

[a] Unequal variances.

when someone (LEOs included) talks to them about treatment following the overdose (Pollini et al., 2006). Covering these topics in the training could reduce officer concerns about naloxone programs.

At the national (and international) level, the COVID-19 pandemic has generated unique consequences for public health and policing. Opioid overdoses have increased significantly during the pandemic and are likely to continue to do so. Officials in at least 40 states have reported increases in opioid overdoses and deaths in 2020 (American Medical Association, 2020). For example, in Chicago the number of opioid overdoses has more than doubled in 2020. Dani Kirby, Director of the Division of Substance Use Prevention and Recovery for the Illinois Department of Human Services, stated:

> The stress of unemployment, isolation, and general uncertainty are all risk factors for a return to substance use or an escalation of existing patterns of use…there is an additional concern that, due to the risk of exposure to COVID-19, people may be more reluctant to call 911 or go to a hospital when an overdose occurs. (Sanchez & Eldeib, 2020: 2).

Further, during the pandemic, limited access to medication-assisted therapies, including buprenorphine and methadone, can result in PWUOs returning to the street, where supply is unregulated, use is riskier, and overdose is more likely (Wakeman, Green, & Rich, 2020).

The role of the police as public health first-responders is clearer in 2020 than ever before. Police have been tasked with enforcing stay-at-home orders, educating the public about the importance of those orders, and dealing with the consequences of a deadly global pandemic (White & Fradella, 2020). One of those consequences is dramatic increases in opioid use and overdoses. The need for police-led naloxone administration programs is increasing dramatically across the U.S., and officers' acceptance of this public health responsibility as part of their mission will save lives.

Acknowledgements

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