# Naloxone Prescribing in an Academic Emergency Department: Provider Practices and Attitudes

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## ABSTRACT

**Introduction:** Naloxone reverses opioid overdose, but it is not universally prescribed. With increases in opioid-related emergency department visits, emergency medicine providers are in a unique position to identify and treat opioid-related injury, but little is known about their attitudes and practices around naloxone prescribing. We hypothesized that emergency medicine providers would identify multifactorial barriers to naloxone prescribing and report varying levels of naloxone-prescribing behaviors.

**Methods:** A survey designed to assess attitudes and behaviors regarding naloxone prescribing practices was emailed to all prescribing providers at an urban academic emergency department. Descriptive and summary statistics were performed.

**Results:** The response rate was 29% (36/124). Nearly all respondents (94%) expressed openness to prescribing naloxone from the emergency department, but only 58% had actually done so. Most (92%) believed that patients would benefit from greater access to naloxone, however 31% also believed that opioid use would increase as access to naloxone increases. Time was the most frequently identified barrier (39%) to prescribing, followed by a perceived inability to properly educate patients on naloxone use (25%).

**Conclusions:** In this study of emergency medicine providers, the majority of respondents were amendable to prescribing naloxone, yet almost half had not done so and some believed that doing so would increase opioid use. Barriers included time constraints and perceived self-reported knowledge deficits regarding naloxone education. More information is needed to gauge the impact of individual barriers to prescribing naloxone, but these findings may provide information that can be incorporated in provider education and potential clinical pathways designed to increase naloxone prescribing.


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## INTRODUCTION

Opioid-related injury and death are major public health problems that result in thousands of deaths per year. Deaths due to opioid overdose have steadily risen in the past 2 decades. In 2018, opioids were involved in 46,802 recorded overdose deaths, 69.5% of all drug overdose deaths.[1] The trend of opioid-related mortality in Wisconsin reflects that of the nation as a whole, as statewide opioid-related deaths have steadily increased over the past decade, from 410 in 2010 to 1226 deaths in 2020.[2]

Naloxone is a competitive opioid antagonist used as an antidote for opioid poisoning that can reverse opioid overdose and save lives. It was approved in 1971, carries virtually no overdose risk or potential for nonmedical use,[3] and has a long (2-year) shelf life. While medical professionals typically deliver naloxone intravenously, prefilled Narcan intranasal naloxone delivery spray devices have made it easier for laypersons with no medical training to administer naloxone effectively.[4] While Narcan may perhaps be more user-friendly, naloxone vial and syringe(s) kits are often the least expensive option for laypersons.[5] Since 1996, a growing number of naloxone distribution programs across the US have provided naloxone kits to laypersons, including those at risk of overdose, their loved ones, and potential bystanders, which have been used successfully to reverse tens of thousands of potentially fatal overdoses.[6] Initiatives to educate and distribute naloxone to populations

at risk of opioid misuse have been shown effective at reducing the risk of death. For example, a program was carried out in Wilkes County in rural northwestern North Carolina, which had some of the highest rates of drug overdose deaths in the country prior to the implementation of Project Lazarus—a program that provides opioid overdose education and naloxone distribution.[7] After project implementation, the overdose death rate dropped from 46.6 per 100,000 in 2009 to 29.0 per 100,000 in 2010.[7] Similarly, opioid-related overdose death rates improved in Massachusetts areas where opioid overdose education and naloxone distribution was implemented compared to those where it was not.[8] Other naloxone education programs across the country have effectively increased laypersons' skills and knowledge regarding naloxone administration.[9] Even brief education sessions have increased at-risk individuals' competence in naloxone administration.[10]

When using opioids to manage patients with chronic pain, the Centers for Disease Control and Prevention recommends that clinicians consider offering naloxone to patients with risk factors for opioid overdose or nonmedical use, including histories of overdose and substance use disorder, higher dosages of opioids (≥50 MME/day), and concurrent use of benzodiazepines with opioids.[11] In response to the increased number in opioid-related deaths, all 50 states and the District of Columbia have passed legislation to increase access to naloxone, including state standing orders for naloxone, ability for prescribers and pharmacists to enter into prescribing agreements, and latitude for pharmacists to prescribe and dispense on their own.[12] Furthermore, because the nature of opioid overdose renders patients unable to administer naloxone to themselves, at least 45 states and the District of Columbia have permitted third-party naloxone prescriptions, making naloxone more accessible to families and acquaintances of overdose victims who may be on scene to administer it.[13]

Despite its well-established effectiveness in reversing opioid poisoning and growing legislation to increase access, naloxone may be underutilized in general and after emergency department (ED) encounters. In a sample of 138,108 individuals, 1 study found that only 1.5% of patients at high risk of opioid overdose were prescribed naloxone following encounters with the health care system broadly.[14] Another found that only 1.1% of patients utilized insurance to fill a prescription for naloxone within 30 days of an opioid-related ED encounter specifically.[15] There is little disagreement about the effectiveness of naloxone as an overdose reverser. For example, Wilson and colleagues[16] found that 86.5% of internal medicine physicians agreed that naloxone is effective in preventing opioid overdose deaths. Acceptance and knowledge of prescribing naloxone has gradually increased in primary care clinicians in the past 2 decades,[17] but acceptance among emergency medicine providers is relatively unknown and there still exists multiple barriers that have prevented it from becoming a universal practice.

### Perceived Usefulness, Utilization, and Influences on Patient Behaviors

Academic clinicians (ie, emergency medicine, primary care and internal medicine, and hospital medicine) reported apprehension that increased access to naloxone may enable nonmedical opioid use behavior as a barrier to increased naloxone prescribing,[18,19] despite findings showing that increased naloxone access is not a risk factor for increased nonmedical use behavior and overdoses.[20,21] Additionally, primary care staff have cited the stigma of nonmedical opioid use and wishing to avoid eliciting negative reactions and patient dissatisfaction from those who may not see themselves at risk for overdose.[22]

Moreover, some clinicians are concerned that that laypersons would not be able to properly respond to overdoses.[18,19,22] Unlike most prescription drugs that the patient self-administers, naloxone is typically administered by another individual, which may complicate the utility of naloxone from a practicality standpoint, as not only the at-risk patient would need to be educated on administering naloxone, but ideally the patient also would be teaching that information to people who may be present during an overdose.[19,22] However, it has been shown that even brief education sessions are sufficient to teach proper naloxone administration.[10]

### Clinician Perceptions of Their Own Knowledge About Naloxone

One of the most commonly reported barriers to prescribing naloxone is not patient-centric but due to the clinicians themselves not feeling adequately trained to responsibly prescribe take-home naloxone,[16,17,23-25] and some academic clinicians (ie, emergency medicine, primary care and internal medicine, and hospital medicine) would rather defer to clinicians who may be more knowledgeable, such as pain management specialists.[18]

### Logistical Barriers to Prescribing Naloxone

Some physicians cite lack of time during a clinical encounter as a barrier to prescribing, as it may be too time-consuming during a patient visit for a proper discussion on using naloxone—not only due to the time needed to explain the use of the naloxone delivery device itself, but also because patients who use opioids often have extensive problem lists that are multifactorial in nature and necessitate prioritization.[22]

Between 2005 and 2014, nationwide ED visits related to opioid misuse and overdose increased 99.4% from 89.1 per population of 100,000 to 177.7.[26] Special considerations need to be taken for patients who present to the ED for treatment of a nonfatal opioid overdose. About 1 in 20 of these patients will die within 1 year of their visit, with two-thirds of these deaths being directly attributed to subsequent opioid-related overdose. Naloxone can be especially life-saving for these patients.[27]

Emergency medicine providers are in a unique position to identify and treat patients with opioid overdoses, opioid misuse and use disorders, and opioid-related injuries. Much of the litera-

**Table 1.** Sample Demographics

| | n (%) |
|---|---|
| Sex | |
| Male | 25 (69) |
| Female | 11 (31) |
| Role | |
| Faculty physician | 27 (75) |
| Resident physician | 7 (19) |
| Physician assistant | 2 (6) |
| Years in practice | |
| <5 | 15 (43) |
| 5–9 | 12 (34) |
| 10–19 | 4 (11) |
| 20+ | 4 (11) |
| Amendable to prescribing naloxone | |
| Yes | 34 (94) |
| Prescribed naloxone from the emergency department in the past | |
| Yes | 21 (58) |

ture on physician attitudes towards naloxone prescribing focuses on primary care and may not be representative of emergency medicine providers or the state of Wisconsin. For this study, we aimed to investigate the attitudes and perceptions of Wisconsin emergency medicine providers regarding naloxone prescribing. We hypothesized that they have varying attitudes and behaviors around naloxone prescribing and that barriers to prescribing naloxone would be multifactorial. We aimed to provide findings that EDs can utilize to address potential underutilization of naloxone in this unique setting.

## METHODS

An institutional review board-approved, cross-sectional survey consisting of demographics and 28 multiple choice, 6-point Likert-scale items (eg, highly agree to highly disagree), and a final opened-ended free response item was created using Qualtrics and administered via email to providers (ie, physicians and advanced practice providers [nurse practitioners, physician assistants]) in an academic ED within a large, urban city. The study received a waiver to document informed consent, and the invitation email informed potential respondents that clicking on the email link inferred their consent to participate in the study. Respondents were not offered compensation for participation. They were asked about their behaviors, attitudes, and beliefs around naloxone and prescribing naloxone, as well as barriers to naloxone prescribing in the ED. The 6 response categories were condensed into 2 (agree/disagree), and frequency counts and descriptive statistics were calculated.

## RESULTS

### Sample Characteristics

The survey was sent to 124 emergency medicine providers, 36 of whom responded (29%). The majority (n = 25; 69%) were male. Participants included 27 (75%) faculty physicians, 7 (19%) residents, and 2 (6%) physician assistants (Table 1). Although the response rate may seem low, 1 study group found that response rates and responsiveness for email surveys may only approximate 25% to 30%, especially without follow-up email and reinforcements.[28,29]

### Naloxone Knowledge

All respondents (100%) knew that naloxone is effective in reversing opioid overdoses, and most (89%) knew that it reduces the likelihood of death due to opioid overdose (Table 2). Most respondents knew that there are no considerable health risks associated with naloxone use (69%), but 25% reported they were unsure of the risks. Most (75%) indicated that they could properly educate patients on proper naloxone use. Most (75%) indicated that they could properly educate patients on naloxone use. All thought that bystanders could effectively administer naloxone, but 31% were unsure if bystanders could administer it with little training.

### Perceived Usefulness, Utilization, and Influences on Patient Behaviors

The majority of respondents (58%) had previously prescribed naloxone in an ED setting, and the great majority (94%) indicated they were at least open to possibly prescribing naloxone (Table 1) and thought that emergency medicine providers should prescribe naloxone (86%) (Table 2). Most (92%) thought that patients would benefit from greater access to naloxone.

Respondents expressed concern that naloxone would affect patient behaviors around opioid use and contact with first responders. A quarter of respondents agreed that someone who uses opioids nonmedically would increase use if given increased access to naloxone, and 31% reported that increased naloxone access to patients would likely increase opioid use because patients would believe that they have a safety net with naloxone. Finally, 67% reported that an opioid overdose survivor who is subsequently revived with naloxone would be less likely to contact emergency medical services.

### Barriers to Prescribing Naloxone

Some respondents (18%) thought that patients get offended by the suggestion of naloxone due to the inference that they may have a drug use problem, while 36% believed that there is not enough time during a clinical encounter to properly discuss naloxone use with a patient.

## DISCUSSION

Increased naloxone availability is associated with decreased opioid-related mortality.[6,21] Yet, providers at our urban academic emergency department reported a range of behaviors and opinions about prescribing naloxone. All respondents agreed that naloxone itself is an effective agent in reversing overdose, suggesting that hesitance to prescribing naloxone may not be rooted in

doubt about the effectiveness of naloxone itself.

The majority of gaps and barriers appear to center around knowledge. For example, 25% of respondents indicated that they are not effectively able to educate their patients on proper naloxone administration, suggesting a lack of knowledge among some providers regarding naloxone that may preclude prescribing; and 25% indicated that they were unsure about the health safety profile of naloxone. Further, it has been repeatedly shown in multiple studies that laypersons with minimal training are able to effectively administer naloxone,[10,22] but nearly a third of our respondents indicated that they were unsure about training required for bystanders. Increased education about the virtually nonexistent negative side effects or drug interactions of naloxone, as well as its ease of use among laypersons with even short durations of training, may increase prescribing behavior.

Importantly, some respondents were concerned that increased access to naloxone would increase patients' nonmedical opioid use. It is important to ensure that clinicians are educated on naloxone's apparent ability to save lives short-term, as well as its ability to serve as an entrée for longer-term treatment engagement.[30] Concerns among clinicians that increased naloxone prescription may increase risky opioid use behavior and increased morbidity/mortality is not uncommon. However, growing evidence actually suggests the opposite; the provision of naloxone does not encourage opioid users to increase their drug consumption or harm themselves.[20,21] It is important to educate clinicians on this harm reduction strategy.

**Table 2.** Survey Results by Domain and Question

| Domain/Survey Question | Response | N (%) |
|---|---|---|
| Knowledge | | |
| There are considerable health risks to naloxone use (other than failure to overturn overdose) | Yes | 2 (6) |
| | No | 25 (69) |
| | Unsure | 9 (25) |
| I am able to effectively educate patients on how to administer naloxone | Agree | 27 (75) |
| | Disagree | 9 (25) |
| Naloxone is effective in reversing opioid overdoses | Agree | 36 (100) |
| | Disagree | 0 (0) |
| Prescribing naloxone reduces the likelihood of death due to opioid overdose | Agree | 32 (89) |
| | Disagree | 4 (11) |
| Naloxone can be effectively administered by laypersons with very little training | Yes | 25 (69) |
| | No | 0 (0) |
| | Unsure | 11 (31) |
| Bystanders will not be able to effectively administer naloxone | Agree | 0 (0) |
| | Disagree | 36 (100) |
| Perceptions and behaviors | | |
| Overall, patients would benefit from greater access to naloxone | Agree | 33 (92) |
| | Disagree | 3 (8) |
| Someone who abuses opioids, when given increased access to naloxone, will increase his/her opioid usage | Agree | 9 (25) |
| | Disagree | 27 (75) |
| Patients will likely increase opioid usage because they feel as if they have a safety net in naloxone | Agree | 11 (31) |
| | Disagree | 25 (69) |
| It is better for an untrained bystander to attempt to administer naloxone to an unresponsive person than to do nothing at all | Yes | 34 (94) |
| | No | 0 (0) |
| | Unsure | 2 (6) |
| An overdose victim who is revived with naloxone is less likely to call emergency medical services or report to the hospital | Agree | 24 (69) |
| | Disagree | 11 (31) |
| Who should prescribe naloxone? (check all that apply) | Primary care providers | 33 (92) |
| | Emergency providers | 31 (86) |
| | Pain management specialists | 33 (92) |
| Barriers | | |
| Patients are offended by the suggestion of naloxone because it implies that they have opioid-use problems | Agree | 6 (18) |
| | Disagree | 28 (82) |
| There is not enough time during a clinical encounter to properly discuss naloxone use with a patient | Agree | 13 (36) |
| | Disagree | 23 (64) |

In addition to belief barriers, results also revealed logistical barriers to prescribing naloxone. For example, many respondents acknowledged a lack of the time necessary to educate patients about proper naloxone use during a clinical encounter. In our current clinical work environments where output and efficiency are often prioritized, it can be challenging to find time and resources to dedicate to patient education. This is not uncommon, with more EDs aiming to increase patient "throughput" and shortening patients' total length of stay. Efforts to recognize patients early in the patient encounter via nursing education and posted patient inclusion criteria information materials may integrate workflow without slowing down patient care. Specially designed bundled order sets and templates in the electronic medical record can prevent charting delays. Strategies to streamline patient education can include prewritten discharge instructions for naloxone indications and administration, which can be provided verbally by clinicians, pharmacists, social workers, or nurses and can be made available to take home for further review by patients. EDs can adopt workflows that include patient education provided by multiple types of staff during an encounter (eg, nurses, social workers). Some EDs are fortunate to partner with individuals with lived experience (eg, certified peer support specialists, recovery coaches) who can be consulted to provide additional patient education and support in the ED and beyond.

Although we did not specifically ask about financial barriers—specifically the cost of naloxone—as it related to the willingness of providers to prescribe, it may be useful to do so in the future. One respondent indicated in the free-response portion of the survey a lack of knowledge about the pricing and availability of naloxone. This is a valid point of concern, given the rising cost of naloxone over the past decade. Although there are community-

based organizations that may provide naloxone for free, the cost of a 2-pack of Narcan intranasal devices is in the range of $150.[5] Generic naloxone may be available for a more affordable price, and insurance may cover a substantial part of the cost;[31] however, analyses of insurance claims suggest that many patients do not fill prescriptions—at least with insurance—for naloxone after an opioid-related ED visit.[15] It may be beneficial for clinicians to have a more comprehensive knowledge of naloxone pricing, and it would be impactful to gauge whether naloxone pricing relates to prescribing behaviors.

Lack of knowledge on naloxone and education of their patients suggests that greater incorporation of naloxone information into clinician education may lead to improved knowledge and confidence regarding naloxone usage, patient education, and subsequent prescribing. Consistent with the trend of growing acceptance of prescribing naloxone,[18] most (94%) of the respondents indicated that they are open to prescribing it, but only 58% have actually done so, suggesting that there is room for education regarding when and how to appropriately prescribe naloxone or removal of barriers is indicated.

### Future Directions and Limitations

As we are a large academic ED, we have a rich variety of resident physicians, new faculty physicians, and advanced practice providers coming to us from all over the country. We have weekly academic conferences that all are encouraged to attend, and there have been various didactic sessions on opioid use disorder over time that many of our providers have attended. Given the results of this survey, there is certainly opportunity to provide additional evidence-based practice recommendations at our site.

More information is needed to gauge the effect of individual barriers to prescribing naloxone, but our findings may provide opportunity for education about the impact and benefits of greater naloxone availability. Providing prefilled naloxone kits to high-risk patients from the ED may increase comfort with emergency medicine providers and patients and lead to greater naloxone accessibility in the community.

Our study had several limitations. The results are subject to all limitations related to self-report and survey methodology. Our sample was limited to a single ED, and results are not necessarily generalizable to other institutions or departments. The survey was limited in length in attempt to achieve a higher response rate—we plan to resurvey our sample population with more focused surveys to investigate the roles of additional logistical barriers, institutional protocols, and local provider cultures. In addition, we sent a reminder to complete the survey but experienced low response rates commonly reported with email[28,32] and physician samples.[33] Low response rates have raised concerns about nonresponse bias or the likelihood that nonresponding physicians will be systematically different from the population under study.[34] This concern is supported by research showing modest differences between responders and nonresponders and between early and late responders on demographic and/or practice-related characteristics.[35]

## CONCLUSIONS

In a cross-sectional survey study of emergency medicine providers at an urban academic ED, the majority of providers were open to prescribing naloxone, yet most had not done so. Self-reported barriers to prescribing naloxone included concerns about patient behavior with increased naloxone access (eg, increased opioid use), lack of one's own knowledge about naloxone, and logistical barriers such as lack of time on clinical shift to adequately educate patients. More information is needed to gauge the impact of individual barriers to prescribing naloxone, but these findings may provide important information to EDs that want to increase patient access to life-saving naloxone. We hope that key information identified in this survey can further guide education efforts for clinicians, as well as inform improvements in naloxone education and discharge planning and ultimately lay foundations for other important harm reduction practices such as ED-based buprenorphine induction. We are currently developing an ED-based buprenorphine induction program that includes dispensing home naloxone as an important harm reduction technique—one of the first of its kind in Wisconsin.

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