

# Providing Naloxone to Non-Medical Personnel Can Prevent OD Deaths without Increasing Abuse

BY JAMES R. ROBERTS, MD

It's certainly no secret that opioid abuse and its associated morbidity and mortality has markedly increased in the United States over the past 10 years. No ED clinician can work a shift without seeing some opioid-related problem, be it an overdose, withdrawal, or a less-than-clandestine attempt by a drug aficionado to obtain more opioids by prescription.

Emergency physicians often get into arguments with patients, and then complaints are registered with the hospital's PR department and state organizations by the savvy and demanding ones. The frustration of emergency physicians is palpable. Our hospital alone had three visits over the past two years from the State of Pennsylvania, which is charged with investigating all complaints. All three involved the delay of opioid use in the ED or failure to prescribe opioids in sufficient amounts or at all to demanding patients. Patients know their rights, and frequently use multiple resources to further their drug use. Clinicians should consider two opposing, rather inexplicable, mandates: the well-publicized underuse of opioids for pain control versus the gargantuan issue of opioid abuse.

Emergency clinicians are a minor contributor to the opioid epidemic in this country. Physicians' offices and pain clinics dispense huge doses of opioids to multiple patients, often without a physical examination or verification of a problem, but even these have come under scrutiny by the DEA. Following the crackdown on prescription opioids, opioid abusers have turned to street heroin, which is easier to get and cheaper than oxycodone (OxyContin). Overdoses from heroin have skyrocketed, and to make matters worse, heroin additives or substitutes, such as fentanyl, make an injection even more lethal.

My July column discussed the intranasal use of naloxone by EMS, and noted that it generally works well and is often a fine substitute for IM or IV opioid reversal. (<http://bit.ly/1mEXEOK>.) This month's

column discusses an outreach program where naloxone has sporadically been and will increasingly be supplied to non-medical personnel, including police officers and family members, but also to individuals addicted to drugs. Such a concept is not without its critics, similar to the opposition in providing condoms to school students and offering clean needles to patients at risk for contracting AIDS.

## Community-Based Opioid Overdose Prevention Program Providing Naloxone — United States, 2010

MMWR 2012;61(6):101

This article by *Morbidity and Mortality Weekly Report* has noted that a number of programs since the mid-1990s have been providing the opioid antagonist naloxone to non-medical personnel. The Harm Reduction Coalition, a national advocacy program, surveyed sites in 2010 known to distribute naloxone to people who use drugs or to those who might be present at an opioid overdose. The authors note that about a third of all heroin users experience an unintentional drug overdose at some point during their addiction.

Community programs began combatting this problem by offering naloxone and other opioid overdose services to persons who use drugs, their family and friends, substance abuse programs, and homeless shelters. A total of 188 local opioid OD prevention programs distributed naloxone in 15 states in 2010, but their



**An FDA-approved naloxone auto-injector specifically designed to reverse an opioid overdose is designed to be used by individuals without medical training. It is now available in the United States by prescription. Similar to an epinephrine auto-injector, each auto-injector delivers a single 0.4 mg dose of naloxone into the thigh, either subcutaneously or intramuscularly. The device uses voice and visual cues to assist in guiding a user through the injection process. A training device is also available. The manufacturer emphasizes that emergency medical care should be immediately sought after administering naloxone.**

activity has remained largely under the public and physician radar. Most do not even know of this initiative.

MMWR identified 50 programs that provided such services since 1996. Survey results revealed that more than 50,000 persons, all non-medical, had obtained naloxone for out-of-hospital use. These programs reported about 10,000 overdose reversals using naloxone. The authors conclude that the distribution of naloxone and training non-medical personnel how to administer it may well have prevented numerous deaths from opioid overdose.

Recognizing the potential value of providing naloxone to a layperson, many states have recently passed laws and changed regulations to provide limited liability for prescribers who work in programs that provide naloxone to drug addicts. Most of the programs reported problems obtaining naloxone because of the cost and supply chain. These programs have provided naloxone for injection in multi- and single-dose vials. The concentration is the standard 0.4 mg/ml. Some of the vials have been adapted for intranasal injection using an atomization device that delivers 2 mg of naloxone through the nose via a spray. An increasingly common route of administration by EMS and naloxone distribution programs is the intranasal spray, utilizing 1 mg sprayed in each nostril. The response is generally quite good, within eight to 12 minutes, and the duration of action can be up to two hours.

**Comment:** Most clinicians have no idea this concept exists or of the entities that prescribe naloxone to drug addicts. Heroin use has shifted from an inner-city, low-income, minority-centered urban problem over the past 20 years to one that has widespread distribution, involving primarily affluent white men and women in their late 20s who live outside urban areas. Part of the problem has been the increase in prescription-related oxycodone use, and making opioids available by inhalation and IV injection. The idea behind providing naloxone to addicts is that drug addiction cannot be cured, society pays a great price for it, and the problem is largely unsolvable.

Recently, police have been supplied with nasal naloxone, and use of this antidote by the lay public has also escalated. A single-use auto-injector (Evzio) was approved by the FDA in April via a fast-track effort, and it delivers 0.4 mg of naloxone either intramuscularly or subcutaneously, resulting in drug levels comparable with standard syringe administration. The device is equipped with visual and voice instructions, and is prescribed to family members and caregivers. It's sort

of like an epinephrine auto-injector for opioid overdose. Distribution is currently very limited, and Mark Herzog, a vice president for the manufacturer Kaléo, said the wholesale price for two auto-injectors is \$575. Out-of-pocket costs for patients are expected to be in the typical co-pay range, and the company has a patient assistance program for those unable to afford the product.

The fear of legal repercussions has always been a barrier to layperson use of naloxone, and many states do not have a Good Samaritan law to protect families and fellow drug users who might intervene. Given the increasing purity of heroin and potent additives such as fentanyl, it is unclear if a single 0.4 mg injection would be adequate for all ODs. Most of the more potent concoctions will be lethal quickly, and would require much more naloxone for reversal.

**Overdose Rescue by Trained and Untrained Participants and Change in Opioid Use among Substance Using Participants in Overdose Education and Naloxone Distribution Programs: A Retrospective Cohort Study**  
Doe-Simkins M, Quinn E, et al  
*BMC Public Health* 2014;14:297  
[www.biomedcentral.com/1471-2458/14/297](http://www.biomedcentral.com/1471-2458/14/297)

This article coins a new term — Overdose Education and Naloxone Distribution (OEND), which is a

program that has been in existence since 2006 — and describes the results of the program from 2006 to 2010. OEND programs have been implemented primarily to give naloxone in a rescue kit to substance users who are at high risk for overdose or to those likely to witness another person overdosing. The article states that opinions about the right level of training and the availability of naloxone rescue still exist. Options include giving naloxone to drug users (essentially to those without any medical training) and to giving it only to trained medical personnel.

It is always a concern, of course, to provide drug users with the skills to recognize and respond to an opioid overdose. Many believe that readily available naloxone may increase opioid use or delay entry into an addiction program. This is an intuitive concern; no data from existing OEND programs have yet demonstrated increased drug use by the participants. This report attempted to evaluate the management of opioid overdose by trained and untrained rescuers reporting the use of out-of-hospital naloxone. It also attempted to address how opioid use changed after receiving opioid education and naloxone distribution.

The study evaluated approximately 500 substance abusers who participated in a Massachusetts program. About eight percent of the subjects reported administering naloxone during an overdose rescue. The program provided training sessions to potential

## The Opioid Epidemic

- A total of 113 people die every day in the United States as a result of drug overdose.
- Drug overdose was the leading cause of injury-related death in 2010.
- More than 38,000 drug overdose deaths occurred in the United States in 2010.
- Almost half of the yearly deaths are caused by opioid analgesics.
- Drug overdose death rates in the United States have tripled since 1990.
- Drug overdose deaths exceeded the number of deaths from motor vehicle accidents in 2011.
- The CDC characterized opioid overdose as an epidemic in 2012, with most deaths deemed preventable.
- Layperson training and naloxone distribution has resulted in more than 10,000 opiate overdoses reversed between 1996 and 2010.
- Drug misuse and abuse caused about 2.5 million ED visits in 2011. More than 1.4 million of those ED visits were related to pharmaceuticals.

Source: Centers for Disease Control and Prevention. Prescription Drug Overdose in the United States: Fact Sheet, July 3, 2014; <http://1.usa.gov/1jQziHt>

bystanders to opioid overdose. The participants received a naloxone rescue kit that contained two pre-filled syringes of naloxone, 2 mg/2 ml, and two mucosal atomization devices. The participants were instructed to deliver 1 ml (1 mg) to each nostril of the overdose victim. The second dose was used if the first one was not effective. A total of 599 overdose rescues occurred, most frequently by friends of the victim. Most of the overdoses occurred in a private setting, and the majority were managed with only one dose of intranasal naloxone. About half of the victims received rescue breathing, rescuers called 911 in a quarter of cases, and most of the rescuers stayed with the

victim and turned over care to emergency medical personnel. Overall, there were no statistically significant differences in the overdose treatment by those who were trained and untrained. No clear increase in use of heroin was seen after receiving OEND services. It was not determined whether naloxone rescue kits would meet an over-the-counter standard, and it was concluded that the OEND programs should be expanded because no increased heroin use occurred.

**Comment:** Deaths in towns that had the OEND programs were reduced 27 to 40 percent. The authors noted that no statistical difference was seen in trained versus untrained participants in their attempts to seek help, the institution of rescue breathing, staying with the victim, or success in naloxone administration. Interestingly, no increase in the use of opioids or other drugs of abuse was found following resuscitation. One of the theoretical objections to such programs is that naloxone distribution would increase opioid use by giving recipients a sense of security, enabling risky behavior, but two studies evaluating such criticisms found a decrease in drug use following naloxone distribution. (*J Urban Health* 2005;82[2]:303; *Int J Drug Policy* 2010;21[3]:186.)

Many positive points support expanding the distribution of naloxone to laypeople, and opinions abound on the rationale for such an intervention. The decreased death rate with no abuse

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**Reader Feedback:** Readers are invited to ask specific questions and offer personal experiences, comments, or observations on InFocus topics. Literature references are appreciated. Pertinent responses will be published in a future issue. Please send comments to [emn@lww.com](mailto:emn@lww.com).

**Timely Article on Hydrocodone**

**Dr. Roberts:** Thank you for the interesting and timely article. (*EMN* 2014;36[5]:8; <http://bit.ly/1iOoxCR>.) I would like to have had more information about the FDA proposal to change hydrocodone mixtures to Schedule II, which could have a huge impact on emergency medicine. I wonder if the FDA understands the potential firestorm of complaints from our 25,000 emergency physicians and their patients if we all become shackled by Schedule II red tape. It seems to me more sensible to address hydrocodone overuse by limiting pills per prescription (15-20?), phone prescriptions (none), and refills per prescription (none, except maybe from pain doctors). — **David Hoyer, MD, Houston**

**Dr. Roberts responds:** Cogent thoughts, Dr. Hoyer. Unfortunately, the FDA works on its own agenda, but many physicians and groups are for and against the change. The constraints on medication are fixed by the FDA schedule, so I don't think it will be possible to have different regulations for different medications. Limiting the number of pills has its own drawbacks when patients truly need analgesics, and making it more difficult to prescribe spawns its own problems.

Heroin use skyrockets in the United States, for example, when attempts to limit physician prescriptions of oxycodone are successful. Now heroin is easier to score than oxycodone. The problem of drug abuse is a gargantuan one. If only there were an easy answer. Simply trying to limit ED prescriptions of opiates is controversial. Of course, some people would rather be high than not, and the drugs are very addicting. Never underestimate drug abusers' to get and worldwide drug makers' ability to produce new drugs and other stimulants and hallucinogens. We have essentially given up trying to regulate marijuana.

# Naloxone

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potential and the rare adverse reactions to naloxone are all positive. The studies have demonstrated that no significant training is required, and overdose prevention can be undertaken by the vast

majority of drug addicts and their friends. The precipitation of withdrawal was not addressed, but no significant interactions occurred where naloxone administration kept victims from receiving EMS/hospital care. Overall, only limited negative social consequences were seen for providing naloxone for out-of-hospital opioid overdose.

California recently passed a bill that allows health care providers to prescribe, dispense, and issue standing orders for an opioid antagonist to those at risk for an overdose, their family members, and their associates who are in a position to assist patients at risk. Such individuals would not be liable under civil or criminal statutes if they acted with reasonable care. The American College of Medical Toxicology has submitted a proposal to members advocating wide use of education, legal protection, and naloxone distribution to try to halt the burgeoning increase in opioid deaths. This concept will likely garner significant interest, and have advocates as well as detractors. Simply stated, opioid use is a chronic illness with usually no cure, similar to diabetes and hypertension. One

wonders if ED clinicians will be soon be expected to prescribe naloxone to those resuscitated by the ED.

Whether this concept garners praise or criticism, one thing is certain: Opioid use is largely a medical illness, like alcoholism, but this understanding is still overshadowed by misconceptions that drug use is a moral weakness or entirely a willful choice. (*JAMA* 2014;311[14]:1393.) Methadone and buprenorphine programs have been successful in extending the life of many opioid users, and many official organizations support medication-assisted treatment. **EMN**

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**Learning Objectives for This Month's CME Activity:** After participating in this CME activity, readers should be better able to identify the benefits and pitfalls of prescribing naloxone to drug addicts and those who might assist them in overdose situations.



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## Read It, See It, Hear It!



**Read It!** By James R. Roberts, MD, & Martha Roberts, ACNP, CEN  
Read [This month in the Procedural Pause blog: How to Do a Mental Nerve Block](#)



**Read It!** By Rick Pescatore, DO  
Read [Little White Coats](#) to follow Dr. Pescatore as he starts his emergency medicine residency.

**New Blog!** By Gregory S. LaSala, MD, Rita G. McKeever, MD, & Jolene Okaneku, MD  
Case reports from [The Tox Cave](#) by three EPs doing medical toxicology fellowships. This month: **DRESS: Drug Rash with Eosinophilia and Systemic Symptoms**

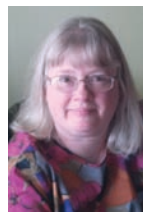
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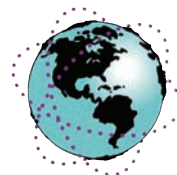


**Hear It!** By Ryan Stanton, MD  
This month in the [Everyday Medicine for Physicians Podcast: Stroke Care Resources at Community Hospitals](#)



**New Blog!** By Loice Swisher, MD  
Don't think zebras; think [Lions and Tigers and Bears](#), a new blog that exposes the cases out there ready to bite.

This month: **"Blood is Draining Inside My Head"** Don't think zebras; think Lions and Tigers and Bears. This month: Leriche Syndrome



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