

Opioid Overdose: Addressing the Growing Problem of Preventable Deaths



August 2014

Introduction

Overdose death rates in the U.S. have more than doubled over the past decade, surpassing motor vehicle accidents as the leading cause of injury-related death in the country.¹

According to the Centers for Disease Control and Prevention (CDC), more than 41,000 people died from an accidental or intentional drug overdose in the U.S. in 2011 – an average of 113 deaths every day.² Eighty percent of these deaths (over 33,000) were accidental – and nearly 17,000 of these deaths involved prescription opioids (compared to about 4,400 attributed to heroin).³

Many of these deaths could have been prevented. Proven strategies are available to reduce the harms associated with drug misuse, treat dependence and addiction, improve immediate overdose responses, enhance public safety and prevent fatalities. These strategies include expanding access to the life-saving medicine naloxone and its associated training; improving fact-based drug education for young people that includes an overdose prevention and response component; enacting legal protections that encourage people to call for help for overdose victims; and training people how to prevent, recognize and respond to an overdose.

911 Good Samaritan Limited Immunity Laws

911 Good Samaritan immunity laws provide protection from arrest and prosecution for witnesses who call 911 or seek emergency medical assistance.

The chance of surviving an overdose, like that of surviving a heart attack, depends greatly on how fast one receives medical assistance. Multiple studies show that most deaths actually occur one to three hours after the victim has initially ingested or injected

drugs.⁴ The time that elapses before an overdose becomes a fatality presents a vital opportunity to intervene and seek medical help.

Witnesses to heart attacks rarely think twice about calling 911, but witnesses to an overdose often squander precious time hesitating to call for help or, in many cases, simply don't make the call.⁵ The most common reason people cite for not calling 911 is fear of police involvement.⁶

Severe penalties for possession and use of illicit drugs, including state laws that impose criminal charges on individuals who provide drugs to someone who subsequently dies of an overdose, also intensify the fear that prevents many witnesses from seeking emergency medical help.⁷

An important solution to encourage overdose witnesses to seek medical help is to exempt them from arrest and criminal prosecution through the adoption of 911 Good Samaritan immunity laws.

Such legislation does not protect people from arrest for other offenses, such as selling or trafficking drugs. These policies generally only protect the caller and overdose victim from arrest and/or prosecution for simple drug possession, possession of paraphernalia, and/or being under the influence. Some states, like Utah and Indiana, do not extend any immunity from arrest or prosecution, but do permit the act of seeking medical assistance at the scene of an overdose as a mitigating factor at the time of sentencing.

Laws encouraging overdose witnesses and victims to seek medical attention may also be accompanied by training for law enforcement, EMS and other emergency and public safety personnel.⁸

DPA spearheaded passage of the nation's first 911 Good Samaritan law in New Mexico in 2007. Since then, nineteen additional states – Alaska, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Louisiana, Maryland, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Rhode Island, Vermont, Washington State and Wisconsin – as well as the District of Columbia have passed such laws.⁹

Initial results from an evaluation of Washington State's Good Samaritan law, adopted in 2010, found that 88 percent of people who use opioids said they would be more likely, and less afraid, to call 911 in the event of a future overdose after learning about the law.¹⁰

The most current information about the various 911 Good Samaritan policies and laws across the U.S. is collected by the Public Health Law Research program of the Robert Wood Johnson Foundation and can be found at: https://www.networkforphl.org/_asset/qz5pvn/network-naloxone-10-4.pdf. The efficacy and implementation of these laws vary considerably from state to state. It is recommended you research the Good Samaritan policy in your own state.

Risk of criminal prosecution or civil litigation can deter medical professionals, drug users and bystanders from aiding overdose victims. Well-crafted legislation can provide simple protections to alleviate these fears, improve emergency overdose responses and save lives.

Naloxone: An Antidote to Opioid Overdose

Chief among today's highly effective available practices to halt and reverse the growing toll of accidental opioid overdose fatalities is naloxone hydrochloride (also known as Narcan™), a low-cost drug available generically that was first approved by the FDA in 1971.

Naloxone is an opioid antagonist that blocks the brain cell receptors activated by heroin and other opioids, temporarily restoring normal breathing within two to three minutes of administration. Naloxone works by taking up opioid receptor sites in the brain; it has a higher affinity for these opioid receptor sites and stays bound longer than opioid activators, which bind and release rapidly.¹¹

Naloxone's only effects are to reverse respiratory failure resulting from an opioid overdose and to cause

uncomfortable withdrawal symptoms in the dependent user.¹² It has no pharmacological effect if administered to a person who has not taken opioids,¹³ has no potential for abuse¹⁴ and does not lead to increases in drug use.¹⁵

Ideally, emergency medical responders are summoned as soon as an overdose is detected. A dose of naloxone is then administered and rescue breathing is initiated if necessary. If the victim has not been revived after two minutes, another dose of naloxone is administered and so on until the naloxone has the desired effect. Naloxone's effects last for 30 to 75 minutes, allowing time for the arrival of emergency medical assistance.¹⁶

Naloxone is most commonly administered via intramuscular injection, but it can also be administered intranasally using an atomizer device that delivers a mist to the nasal mucus membrane.¹⁷ This latter form of administration has been used for many years by EMS responders and overdose prevention groups in several states and will soon be available as an FDA-approved delivery device. Several studies have demonstrated that intranasal naloxone can be distributed to potential bystanders and later administered safely and effectively to reverse opioid overdoses.¹⁸ This method of administration can be easier for pre-hospital responses to overdose. Most members of law enforcement prefer to carry and use intranasal naloxone to facilitate speed and ease of use.

In April 2014, the FDA approved a handheld intramuscular naloxone auto-injector device called Evzio. Evzio is available by prescription only. The device employs voice prompts to guide the user through the accurate administration of naloxone. It is the first naloxone delivery device to be approved by the FDA specifically for administration by laypeople outside of a healthcare setting.¹⁹

Naloxone Training for the Public

In the U.S. and around the world, naloxone distribution programs are currently training potential overdose witnesses to correctly recognize an overdose and administer the drug, greatly reducing the risk of accidental death. In addition, the programs involve overdose prevention education and training in how to recognize overdoses, perform rescue breathing and contact emergency medical services. Currently, such efforts are small when compared to the scope of the national accidental overdose crisis, but their results are highly encouraging.²⁰

Naloxone Saves Lives

Naloxone-availability efforts have been undertaken in cities and states around the country with considerable success:

- The Centers for Disease Control and Prevention (CDC) reports that, between 1996 and 2010, community-based opioid overdose prevention programs were established and began distributing naloxone at nearly 190 locations in 15 states across the country.
- *These programs have trained and equipped more than 53,000 people with naloxone, who have successfully reversed more than 10,000 opioid overdoses.*²¹
- Naloxone distribution programs in Massachusetts, for example, successfully trained nearly 3,000 laypeople in the use of naloxone, who reported more than 300 overdose reversals between 2002 and 2009.²² A 2013 study of these programs published in the *British Medical Journal* found that opioid overdose death rates were significantly reduced in communities that adopted naloxone programs compared to those that did not.²³

Because of naloxone's lifesaving potential, leading health organizations in the U.S. and internationally, have endorsed its expanded access and use by health professionals and/or laypeople, including the American Medical Association, the American Public Health Association, the Substance Abuse and Mental Health Services Administration, the Centers for Disease Control and Prevention, the American Society of Addiction Medicine, the World Health Organization and the United Nations Office on Drugs and Crime.²⁴

Twenty-eight states – California, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Maryland,

Maine, Minnesota, Missouri, North Carolina, New Mexico, New Jersey, New York, Ohio, Oklahoma, Utah, Rhode Island, Tennessee, Vermont, Virginia, Washington and Wisconsin – as well as the District of Columbia have passed laws providing for some form of access to naloxone access among first responders and/or laypeople.

Naloxone is Cost-Effective

Providing take-home naloxone to opioid users for later administration not only saves lives; it also saves money. A 2013 cost-benefit analysis published in the *Annals of Internal Medicine* concluded that “Naloxone distribution to heroin users is likely to reduce overdose deaths and is cost-effective, even under markedly conservative assumptions.”²⁵ Specifically, the study found that one life could be saved for every 164 naloxone kits that are distributed.²⁶

“Providing opioid overdose education and naloxone to persons who use drugs and to persons who might be present at an opioid overdose can help reduce opioid overdose mortality, a rapidly growing public health concern.”²⁷

– Centers for Disease Control and Prevention, 2012.

Expanding the Availability of Naloxone

Providing take-home naloxone to people who use opioids (and their family, friends and caretakers) for later administration in case of an overdose is a commonsense and cost-effective strategy to significantly reduce opioid overdose deaths.²⁸

Several community programs in major metropolitan areas are making important strides in increasing public access to naloxone. A number of syringe exchange programs in major U.S. cities have begun making naloxone available to people who inject illicit drugs. Many overdose prevention programs are paired with syringe exchange programs, creating important linkages between services that can help prevent both accidental overdose and the spread of HIV/AIDS, hepatitis and other infectious diseases among people who inject drugs.

While it's important to make naloxone available to people who visit syringe exchange programs, it is equally important to ensure naloxone availability to members of the public who use prescription opioids but do not use syringes or visit exchange programs.

Expanding access to naloxone in pharmacies.

A handful of states are beginning to make naloxone more readily available in pharmacies. States such as Rhode Island, New York and Washington permit pharmacists to dispense naloxone to patients, as long as a physician has an agreement with the pharmacy allowing them to do so; while states such as New Mexico have added naloxone to the list of drugs pharmacists are permitted to directly furnish to patients without a prior prescription. In June 2014, New York became the most recent state to reduce consumer barriers to naloxone.²⁹ Additionally, a bill in California (AB 1535) is currently heading toward the governor's desk for his signature and may be signed into law as early as August 2014.

Studies demonstrate that pharmacy-distribution of naloxone is safe and feasible.³⁰ Moreover, surveys of pharmacists show that they are highly willing to dispense naloxone to patients and other laypeople when permitted to do so – reflecting a growing awareness of the vital role that pharmacists can and must play to prevent opioid overdose.³¹

In fact, new evidence indicates that even laypeople who have not received naloxone training can still administer it accurately and effectively,³² suggesting that naloxone could potentially be made available as an over-the-counter medication.³³

Improving naloxone awareness among physicians and other providers.

Support is growing among some physicians and other health professionals for regularly pairing naloxone with all opioid prescriptions.³⁴ Under this scenario, physicians would routinely write a prescription for naloxone to accompany every prescription for an opioid medication. Such a convention would have the dual benefits of safeguarding the life of the patient and normalizing naloxone by educating the greater public about its function and proper use. Physician education and training in naloxone prescription and use is vital to increase these efforts among providers treating patients at risk of opioid overdose.³⁵

It is particularly important to make naloxone available in methadone clinics, addiction treatment programs, syringe exchange programs, college and university health centers and emergency rooms.³⁶

Improving naloxone access for people being released from prison or jail.

Overdose risk is significantly greater following an extended period of abstinence or reduced use – whether of a voluntary nature, such as spending time in a rehabilitation facility, or involuntary, such as incarceration.³⁷ It is estimated that people who inject heroin have seven times the risk of death from an overdose during the first two weeks after their release from incarceration.³⁸

For example, a study of more than 70,000 individuals released from Washington State prisons found that, during the first two weeks post-release, their overdose rate was nearly 13 times that of the general population.³⁹

Recognizing this elevated risk, overdose education – including naloxone – should be provided to all opioid-dependent people released from prison or jail.⁴⁰

“I am confident that expanding the availability of naloxone has the potential to save the lives, families and futures of countless people across the nation.”⁴¹

– Attorney General Eric Holder, 2014.

Law Enforcement Embraces Naloxone

Law enforcement professionals and correctional personnel should also be trained on how to respond to opioid overdose, including rescue breathing and administration of naloxone. Research supports the expansion of naloxone among police, sheriffs, firefighters and all first-responders.⁴²

There appears to be a growing demand for overdose prevention information among members of the law enforcement community. A survey of law enforcement officers “indicated a desire to be more involved in overdose prevention and response, suggesting the potential for broader law enforcement engagement around this pressing public health crisis.”⁴³

Indeed, an increasing number of law enforcement agencies across the country are now equipping their officers, sheriffs and other personnel with naloxone. By May 2014, over a dozen departments were providing naloxone to law enforcement officers, with several more expected to do so by 2015. Cities where some officers are equipped with naloxone include San Diego, California; Bartlett, Bloomington, Downers

Grove, DuPage County, Hinsdale, Wheaton and Wood Dale, Illinois; Española, New Mexico; Gloucester and Quincy, Massachusetts; Indianapolis, Indiana; Lorain, Ohio; Nassau County, New York City, Rensselaer County and Suffolk County, New York.

The Office of National Drug Control Policy (ONDCP) has affirmed its support for expanding access to naloxone as part of an effective strategy to combat opioid overdose. In a White House blog post in February 2014, ONDCP stated that the administration “strongly encourages local law enforcement agencies to train and equip their personnel with this lifesaving drug.”⁴⁴

Attorney General Eric Holder echoed that support in a speech delivered in April 2014 to the Police Executive Research Forum when he said, “Today, I’m calling on all first responders – including state and local law enforcement agencies – to train and equip their men and women on the front lines to use the overdose-reversal drug known as naloxone.”⁴⁵

In July 2014, the Attorney General announced a plan to ensure that federal law enforcement agencies train and equip their personnel with naloxone.⁴⁶

“We encourage everyone to learn more about naloxone. Used in concert with “Good Samaritan” laws, which grant immunity from criminal prosecution to those seeking medical help for someone experiencing an overdose, it can and will save lives.”⁴⁷

– Office of National Drug Control Policy, 2014

Liability Mitigation and Other Measures to Remove Barriers to Naloxone Access

According to a 2012 article in the *Journal of the American Medical Association*, several barriers stand in the way of widespread diffusion of naloxone: “the price of naloxone has sky-rocketed in the context of a severe shortage; few prescribers are aware of and are willing to facilitate overdose prevention education and naloxone access; funding for program activities and evaluation research remains sparse; and the Food and Drug Administration (FDA)–approved formulation of naloxone is suboptimal for out-of-hospital use.”⁴⁸

One key barrier to broader naloxone access in the U.S. is its status as a prescription drug.⁴⁹ Depending on state law, prescriptions for naloxone must either be written to individuals who have requested to carry the

drug or may be made by programs operating under standing orders from a physician.⁵⁰

Even though naloxone is already governed by state and federal prescription drug laws, some physicians may be discouraged from distributing naloxone because of legal concerns.⁵¹ After years of federal prosecutions against physicians accused of professional negligence or corruption for prescribing opioids for pain, doctors supportive of naloxone availability are understandably concerned about potential liabilities stemming from any incorrect use of the drug or from unintended results.⁵²

Explicit legal protection for naloxone distribution programs and/or prescribers is offered by only a handful of states.⁵³ This lack of a consistent legal framework supporting national naloxone availability casts a shadow of uncertainty over good-faith efforts to save lives. Though no guarantees exist, several reviews of existing law have concluded that prescribing naloxone and providing proper training in its use does not expose physicians to an unusual risk of medical liability as long as the physician acts (1) in good faith, (2) in the course of professional practice and (3) for legitimate medical purpose.⁵⁴

In California, Governor Arnold Schwarzenegger signed the Overdose Treatment Liability Act (Senate Bill 767), which went into effect in 2008. The legislation protects physicians and healthcare providers who prescribe take-home naloxone to people at risk of overdose. Community-based syringe exchange and drug treatment programs that target people who use opioids in Los Angeles receive county funding to train clients on how to prevent an overdose, administer naloxone and assist with rescue breathing. Clients also receive information about treatment services and other resources.

Nevertheless, it remains illegal in most jurisdictions for physicians to prescribe naloxone to a family member for use on a loved one who has not seen the doctor. It is also illegal for the prescription recipient to use naloxone on another person for whom it was not prescribed. New Mexico’s Overdose Prevention and Response Initiative addresses these failings by explicitly authorizing non-healthcare providers “to administer an opioid antagonist if they believe in good faith that the other person is experiencing an opioid drug overdose and they act with reasonable care.”⁵⁵

Provisions for the legal dispensing, use and/or possession of naloxone can be included in 911 Good Samaritan legislation, as was the case in Washington's Good Samaritan bill, or as stand-alone legislation. A handful of other states have taken similar action to protect naloxone availability. For example, in 2005, New York State passed a far-reaching law that provides for state regulation of overdose prevention programs, defines the use of naloxone as "first aid" and clarifies that persons who administer naloxone are immune from civil liability or criminal prosecution for the provision of overdose treatment in good faith. The law also directs the state commissioner to publish opioid overdose death and emergency data,⁵⁶ an invaluable tool in tracking and responding to accidental drug overdoses.

Experts generally agree that any possible malpractice liability can be reduced by ensuring that those who are given a naloxone overdose kit understand its proper use⁵⁷ and that naloxone programs train participants in the full range of overdose responses and maintain thorough documentation.⁵⁸

Experts also point to the routine practice of making lifesaving medications available to third parties trained in emergency management,⁵⁹ to the training of family and friends to administer drugs such as glucagon for diabetes or epinephrine for anaphylaxis, both of which have far greater potential for adverse reactions than naloxone,⁶⁰ and to the wide latitude provided by federal law for the prescription of drugs for uses beyond those indicated on their labels.⁶¹

Public Outreach and Education

Providing practical, life-saving information to people who use opioids can dramatically reduce the likelihood of fatal overdose. A major factor in drug overdose incidence in New Mexico, for example, is the mixing of drugs such as opioids with alcohol or cocaine. In response, the state has undertaken an outreach and education initiative to inform people who use drugs about the risks of using multiple substances simultaneously.

The key to combating the rise in overdose among users of pain medications is education – not only for patients, but also for their doctors and caregivers. Pain patients must be adequately informed about the dangers of taking larger and/or more frequent doses of opioid medication than prescribed, and mixing opioids with alcohol or other drugs. Medication-specific risks

must be carefully explained, and patients must be given detailed information about dosages, time frames and complementary pain management strategies.

Recommendations:

- Enact 911 Good Samaritan immunity laws at all jurisdictional levels to protect overdose witnesses from arrest and prosecution for minor drug law violations.
- Expand access to naloxone among people who use opioids, as well as their friends, family members, caretakers and doctors.
- Promote fact-based drug education for young people about potentially dangerous drug combinations and how to prevent and respond to an overdose.
- Provide education in prevention and overdose reversal to people residing in homeless shelters and to individuals prior to their release from jails, prisons, residential treatment facilities and detoxification programs.
- Increase awareness about overdose prevention, recognition and response among high school and college students.
- Provide overdose prevention, recognition and response education at methadone clinics and all syringe exchange programs.
- Support public education initiatives to foster awareness of any overdose policy reforms and improve cooperation with ambulance and police services.
- Encourage doctors to prescribe naloxone to patients using prescription opioids and better educate their patients about the risks inherent to opioid analgesics.
- Develop and deliver overdose trainings and education campaigns targeted at general- and family-practice physicians, registered nurses, pharmacists and other medical personnel.
- Shield first responders from liability should the use of naloxone prove ineffective.

¹ Center for Disease Control and Prevention (CDC), "Prescription Drug Overdose in the United States: Fact Sheet," <http://www.cdc.gov/homeandrecreationalsafety/overdose/facts.html>; C. M. Jones, K. A. Mack, and L. J. Paulozzi, "Pharmaceutical overdose deaths, United States, 2010," *JAMA* 309, no. 7 (2013).

² Center for Disease Control and Prevention (CDC), "Prescription Drug Overdose in the United States: Fact Sheet".

³ Ibid; John Fauber and Kristina Fiore, "Overdose deaths from opioids, heroin on the rise," *Milwaukee Journal Sentinel*, July 2 2014. Evidence indicates that some prescription opioid consumers may have switched to heroin in recent years. Their initiation to heroin use seems to have been precipitated by the relatively cheap price of street heroin compared to prescription opioids,³ lack of access to prescription opioids – perhaps as a result of states' efforts to restrict access to such medications – or the difficulties of snorting or injecting new deterrent-resistant formulations of prescription drugs. See, e.g., Theodore J. Cicero et al., "The Changing Face of Heroin Use in the United States," *JAMA Psychiatry*

10.1001/jamapsychiatry.2014.366(2014); S. G. Mars et al., "Every 'Never' I Ever Said Came True": Transitions from opioid pills to heroin injecting," *Int J Drug Policy* 25, no. 2 (2014); C. M. Jones, "Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers - United States, 2002-2004 and 2008-2010," *Drug Alcohol Depend* 132, no. 1-2 (2013); S. E. Lankenau et al., "Initiation into prescription opioid misuse amongst young injection drug users," *Int J Drug Policy* 23, no. 1 (2012); K. M. Peavy et al., "'Hooked on' prescription-type opiates prior to using heroin: results from a survey of syringe exchange clients," *J Psychoactive Drugs* 44, no. 3 (2012); R. A. Pollini et al., "Problematic use of prescription-type opioids prior to heroin use among young heroin injectors," *Subst Abuse Rehabil* 2, no. 1 (2011); Theodore J. Cicero, Matthew S. Ellis, and Hilary L. Surratt, "Effect of Abuse-Deterrent Formulation of OxyContin," *New England Journal of Medicine* 367, no. 2 (2012).

⁴ Peter J. Davidson et al., "Witnessing heroin-related overdoses: the experiences of young injectors in San Francisco," *Addiction* 97, no. 12 (2002).

⁵ M. Tracy et al., "Circumstances of witnessed drug overdose in New York City: implications for intervention," *Drug Alcohol Depend* 79, no. 2 (2005).

⁶ Peter J. Davidson et al., "Witnessing heroin-related overdoses: the experiences of young injectors in San Francisco; K. C. Ochoa et al., "Overdosing among young injection drug users in San Francisco," *Addict Behav* 26, no. 3 (2001); Robin A. Pollini et al., "Response to Overdose Among Injection Drug Users," *American journal of preventive medicine* 31, no. 3 (2006); M. Tracy et al., "Circumstances of witnessed drug overdose in New York City: implications for intervention."

⁷ C. J. Banta-Green et al., "Police Officers' and Paramedics' Experiences with Overdose and Their Knowledge and Opinions of Washington State's Drug Overdose-Naloxone-Good Samaritan Law," *J Urban Health* 90, no. 6 (2013).

⁸ Traci C. Green et al., "Law enforcement attitudes toward overdose prevention and response," *Drug and Alcohol Dependence* 133, no. 2 (2013); C. J. Banta-Green et al., "Police Officers' and Paramedics' Experiences with Overdose and Their Knowledge and Opinions of Washington State's Drug Overdose-Naloxone-Good Samaritan Law."

⁹ Utah and Indiana adopted laws providing for mitigation in cases of good-faith reporting of an overdose, but these states do not provide immunity.

¹⁰ Banta-Green CJ et al., "Washington's 911 Good Samaritan Drug Overdose Law - Initial Evaluation Results," (Alcohol & Drug Abuse Institute, University of Washington, 2011); C. J. Banta-Green et al., "Police Officers' and Paramedics' Experiences with Overdose and Their Knowledge and Opinions of Washington State's Drug Overdose-Naloxone-Good Samaritan Law."

¹¹ Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit," (Rockville, Maryland: SAMHSA, 2013); M. M. Straus, U. E. Ghitzza, and B. Tai, "Preventing deaths from rising opioid overdose in the U.S. - the promise of naloxone antidote in community-based naloxone take-home programs," *Subst Abuse Rehabil* 2013, no. 4 (2013).

¹² S. Maxwell et al., "Prescribing naloxone to actively injecting heroin users: a program to reduce heroin overdose deaths," *J Addict Dis* 25, no. 3 (2006); Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit."

¹³ Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit."

¹⁴ Ibid; S. Maxwell et al., "Prescribing naloxone to actively injecting heroin users: a program to reduce heroin overdose deaths; D. Kim, K. S. Irwin, and K. Khoshnood, "Expanded access to naloxone: options for critical response to the epidemic of opioid overdose mortality," *Am J Public Health* 99, no. 3 (2009).

¹⁵ Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit; Maya Doe-Simkins et al., "Overdose rescues 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," *BMC Public Health* 14, no. 1 (2014); L. Beletsky, J. D. Rich, and A. Y. Walley, "Prevention of fatal opioid overdose," *JAMA* 308, no. 18 (2012).

¹⁶ Sporer, K.A. "Strategies for preventing heroin overdose." *British Medical Journal* 326 (22 February 2003): 442-444; Galea S., J. Ahern, D. Vlahov, C. Fuller, A.C. Leon, and K. Tardiff. "Income Distribution and Risk of Fatal Drug Overdose in New York City Neighborhoods." *Drug and Alcohol Dependence* 70 (2003): 139-148; and Coffin, P.O., M. Tracy, A. Bucciarelli, D. Ompad, D. Vlahov, S. Galea. "Identifying Injection drug users at risk of nonfatal overdose." *Academic Emergency Medicine* 14 (2007): 616-623.

¹⁷ D. A. Rastegar and A. Y. Walley, "Preventing prescription opioid overdose deaths," *J Gen Intern Med* 28, no. 10 (2013); L. Beletsky, J. D. Rich, and A. Y. Walley, "Prevention of fatal opioid overdose."

¹⁸ M Doe-Simkins et al., "Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose," *Am J Public Health* 99, no. 5 (2009); A. Y. Walley et al., "Opioid overdose prevention with intranasal naloxone among people who take methadone," *J Subst Abuse Treat* 44, no. 2 (2013); Ali Mohammad Sabzghabae et al., "Naloxone therapy in opioid overdose patients: intranasal or intravenous? A randomized clinical trial," *Archives of Medical Science: AMS* 10, no. 2 (2014); D. Kerr et al., "Randomized controlled trial comparing the effectiveness and safety of intranasal and intramuscular naloxone

for the treatment of suspected heroin overdose," *Addiction* 104, no. 12 (2009); D. Kerr, P. Dietze, and A. M. Kelly, "Intranasal naloxone for the treatment of suspected heroin overdose," *ibid.* 103, no. 3 (2008); Anne-Maree Kelly, Debra Kerr, and Dietze Paul, "Intranasal Naloxone for Treatment of Opioid Overdose," in *Opiate Receptors and Antagonists*, ed. Reginald Dean, Iii, Edwardj Blisky, and S. Stevens Negus, *Contemporary Neuroscience* (Humana Press, 2009).

¹⁹ Food and Drug Administration, "FDA approves new hand-held auto-injector to reverse opioid overdose," (2014).

²⁰ See, e.g., Traci C Green, Robert Heimer, and Lauretta E Grau, "Distinguishing signs of opioid overdose and indication for naloxone: an evaluation of six overdose training and naloxone distribution programs in the United States," *Addiction* 103, no. 6 (2008); A. S. Bennett et al., "Characteristics of an overdose prevention, response, and naloxone distribution program in Pittsburgh and Allegheny County, Pennsylvania," *J Urban Health* 88, no. 6 (2011); J Strang et al., "Overdose training and take-home naloxone for opiate users: prospective cohort study of impact on knowledge and attitudes and subsequent management of overdoses," *Addiction* 103, no. 10 (2008); A. V. Williams, J. Marsden, and J. Strang, "Training family members to manage heroin overdose and administer naloxone: randomized trial of effects on knowledge and attitudes," *ibid.* 10.1111/add.12360(2013); L. Enteen et al., "Overdose prevention and naloxone prescription for opioid users in San Francisco," *J Urban Health* 87, no. 6 (2010); Trevor Bennett and Katy Holloway, "The impact of take-home naloxone distribution and training on opiate overdose knowledge and response: An evaluation of the THN Project in Wales," *Drugs: education, prevention and policy* 19, no. 4 (2012); K. D. Wagner et al., "Evaluation of an overdose prevention and response training programme for injection drug users in the Skid Row area of Los Angeles, CA," *Int J Drug Policy* 21, no. 3 (2010); K. E. Tobin et al., "Evaluation of the Staying Alive programme: training injection drug users to properly administer naloxone and save lives," *ibid.* 20, no. 2 (2009); Tinka Markham Piper et al., "Evaluation of a Naloxone Distribution and Administration Program in New York City," *Substance Use & Misuse* 43, no. 7 (2008); Andrew McAuley et al., "From evidence to policy: The Scottish national naloxone programme," *Drugs: education, prevention and policy* 19, no. 4 (2012); S. E. Lankenau et al., "Injection drug users trained by overdose prevention programs: responses to witnessed overdoses," *J Community Health* 38, no. 1 (2013); S. Albert et al., "Project Lazarus: community-based overdose prevention in rural North Carolina," *Pain Med* 12 Suppl 2(2011).

²¹ Centers for Disease Control and Prevention, "Community-based opioid overdose prevention programs providing naloxone - United States, 2010," *Morbidity and Mortality Weekly Report* 61, no. 6 (2012).

²² A. Y. Walley et al., "Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis," *BMJ* 346(2013).

²³ Ibid.

²⁴ American Medical Association, "AMA Adopts New Policies at Annual Meeting," (2012), <http://www.ama-assn.org/ama/pub/news/news/2012-06-19-ama-adopts-new-policies.page>; American Public Health Association, "APHA Policy Statement 20133: Preventing Overdose Through Education and Naloxone Distribution," (Washington, DC: American Public Health Association, 2013); American Society of Addiction Medicine, "Public Policy Statement on the Use of Naloxone for the Prevention of Drug Overdose Deaths," (2010); United Nations Office on Drugs and Crime and World Health Organization, "Opioid overdose: preventing and reducing opioid overdose mortality: Contribution of the United Nations Office on Drugs and Crime and the World Health Organization to improving responses by Member States to the increasing problem of opioid overdose deaths," (New York: United Nations, 2013); Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit; Centers for Disease Control and Prevention, "Community-based opioid overdose prevention programs providing naloxone - United States, 2010."

²⁵ Phillip O. Coffin and Sean D. Sullivan, "Cost-Effectiveness of Distributing Naloxone to Heroin Users for Lay Overdose Reversal," *Annals of Internal Medicine* 158, no. 1 (2013).

²⁶ Ibid.

²⁷ Centers for Disease Control and Prevention, "Community-based opioid overdose prevention programs providing naloxone - United States, 2010."

²⁸ Wilson M Compton et al., "Expanded access to opioid overdose intervention: research, practice, and policy needs," *Annals of internal medicine* 158, no. 1 (2013); Corey Davis, "Reducing opioid overdose by changing law and policy" (presented at the 141st APHA Annual Meeting (November 2-November 6, 2013), 2013); C. Davis, D. Webb, and S. Burris, "Changing law from barrier to facilitator of opioid overdose prevention," *J Law Med Ethics* 41 Suppl 1(2013).

²⁹ Governor Andrew Cuomo, "Governor Cuomo Signs Legislation to Combat Heroin, Opioid and Prescription Drug Abuse Epidemic," June 23, 2014 2014.

³⁰ ND Zaller et al., "The feasibility of pharmacy-based naloxone distribution interventions: a qualitative study with injection drug users and pharmacy staff in Rhode Island," *Subst Use Misuse* 48, no. 8 (2013); A. M. Bailey and D. P. Wermeling, "Naloxone for opioid overdose prevention: pharmacists' role in community-based practice settings," *Ann Pharmacother* 48, no. 5 (2014); Centers

for Disease Control and Prevention, "Community-based opioid overdose prevention programs providing naloxone - United States, 2010."

³¹ ND Zaller et al., "The feasibility of pharmacy-based naloxone distribution interventions: a qualitative study with injection drug users and pharmacy staff in Rhode Island; A. M. Bailey and D. P. Wermeling, "Naloxone for opioid overdose prevention: pharmacists' role in community-based practice settings; DeAnna Marshall, "Barriers and Facilitators to Implementing a Naloxone Collaborative Drug Therapy Agreement: A Qualitative Study of Washington State Pharmacists" (University of Washington, 2013).

³² Maya Doe-Simkins et al., "Overdose rescues 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."

³³ L. Beletsky et al., "Physicians' knowledge of and willingness to prescribe naloxone to reverse accidental opiate overdose: challenges and opportunities," *J Urban Health* 84, no. 1 (2007).

³⁴ Coffin, P.O., C. Fuller, L. Vadnai, S. Blaney, S. Galea, D. Vlahov. "Preliminary evidence of health care provider support for naloxone prescription as overdose fatality prevention strategy in New York City." *Journal of Urban Health* 80 (2003): 288-290.

³⁵ S. Mayet et al., "Impact of training for healthcare professionals on how to manage an opioid overdose with naloxone: effective, but dissemination is challenging," *Int J Drug Policy* 22, no. 1 (2011); L. Beletsky et al., "Physicians' knowledge of and willingness to prescribe naloxone to reverse accidental opiate overdose: challenges and opportunities."

³⁶ Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit; Centers for Disease Control and Prevention, "Community-based opioid overdose prevention programs providing naloxone - United States, 2010." See also, Alexander Y Walley et al., "Nasal naloxone rescue kits in an emergency department overdose education program," *Drug and Alcohol Dependence* 140(2014); A. Y. Walley et al., "Opioid overdose prevention with intranasal naloxone among people who take methadone; L. Beletsky, J. D. Rich, and A. Y. Walley, "Prevention of fatal opioid overdose."

³⁷ I. A. Binswanger et al., "Risk factors for all-cause, overdose and early deaths after release from prison in Washington state," *Drug Alcohol Depend* 117, no. 1 (2011); I. A. Binswanger et al., "Mortality after prison release: opioid overdose and other causes of death, risk factors, and time trends from 1999 to 2009," *Ann Intern Med* 159, no. 9 (2013); S. E. Wakeman et al., "Preventing death among the recently incarcerated: an argument for naloxone prescription before release," *J Addict Dis* 28, no. 2 (2009). See also, Sporer, K.A. "Strategies for preventing heroin overdose." *British Medical Journal* 326 (22 February 2003): 442-444; Galea S., J. Ahem, D. Vlahov, C. Fuller, A.C. Leon, and K. Tardiff. "Income Distribution and Risk of Fatal Drug Overdose in New York City Neighborhoods." *Drug and Alcohol Dependence* 70 (2003): 139- 148; Coffin, P.O., M. Tracy, A. Bucciarelli, D. Ompad, D. Vlahov, S. Galea. "Identifying injection drug users at risk of nonfatal overdose." *Academic Emergency Medicine* 14 (2007): 616-623; Seal, K.H. "Predictors and Prevention of Non-Fatal Overdose Among Street-Recruited Heroin Users in the San Francisco Bay Area, 1998-1999." *American Journal of Public Health* 1842 (2001): 91; I. A. Binswanger et al., "Risk factors for all-cause, overdose and early deaths after release from prison in Washington state; I. A. Binswanger et al., "Return to drug use and overdose after release from prison: a qualitative study of risk and protective factors," *Addict Sci Clin Pract* 7, no. 1 (2012); E. L. Merrill et al., "Meta-analysis of drug-related deaths soon after release from prison," *Addiction* 105, no. 9 (2010).

³⁸ KA Sporer and AH Kral, "Prescription naloxone: a novel approach to heroin overdose prevention," *Ann Emerg Med* 49, no. 2 (2007).

³⁹ I. A. Binswanger et al., "Mortality after prison release: opioid overdose and other causes of death, risk factors, and time trends from 1999 to 2009."

⁴⁰ J. Strang, S. M. Bird, and M. K. Parmar, "Take-home emergency naloxone to prevent heroin overdose deaths after prison release: rationale and practicalities for the N-ALIVE randomized trial," *J Urban Health* 90, no. 5 (2013); S. E. Wakeman et al., "Preventing death among the recently incarcerated: an argument for naloxone prescription before release; Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit."

⁴¹ Department of Justice, "Attorney General Holder Announces Plans for Federal Law Enforcement Personnel to Begin Carrying Naloxone," (2014), <http://www.justice.gov/opa/pr/2014/July/14-ag-805.html>.

⁴² Corey S. Davis et al., "Expanded Access to Naloxone Among Firefighters, Police Officers, and Emergency Medical Technicians in Massachusetts," *American Journal of Public Health* 10.2105/AJPH.2014.302062(2014).

⁴³ Traci C. Green et al., "Law enforcement attitudes toward overdose prevention and response."

⁴⁴ Office of National Drug Control Policy to ONDCP Blog, 2014, 5 Things to Know about Opioid Overdoses, <http://www.whitehouse.gov/blog/2014/02/11/5-things-know-about-opioid-overdoses>.

⁴⁵ Attorney General Eric Holder, "Remarks at the 2014 Police Executive Research Forum," (2014).

⁴⁶ Department of Justice, "Attorney General Holder Announces Plans for Federal Law Enforcement Personnel to Begin Carrying Naloxone".

⁴⁷ Office of National Drug Control Policy, 5 Things to Know about Opioid Overdoses.

⁴⁸ L. Beletsky, J. D. Rich, and A. Y. Walley, "Prevention of fatal opioid overdose."

⁴⁹ T. C. Green et al., "Barriers to medical provider support for prescription naloxone as overdose antidote for lay responders," *Substance use & misuse* 48, no. 7 (2013); A. R. Bazazi et al., "Preventing opiate overdose deaths: examining objections to take-home naloxone," *J Health Care Poor Underserved* 21, no. 4 (2010); Maya Doe-Simkins et al., "Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose," *American Journal of Public Health* 99, no. 5 (2009); S Burris, J Norland, and B Edlin, "Legal aspects of providing naloxone to heroin users in the United States," *Int J Drug Policy* 12, no. 3 (2001).

⁵⁰ Maya Doe-Simkins et al., "Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose; S Burris, J Norland, and B Edlin, "Legal aspects of providing naloxone to heroin users in the United States."

⁵¹ See, e.g., KA Sporer and AH Kral, "Prescription naloxone: a novel approach to heroin overdose prevention; Bridget M Kuehn, "Back From the Brink: Groups Urge Wide Use of Opioid Antidote to Avert Overdoses," *JAMA* 311, no. 6 (2014); L. Beletsky et al., "Physicians' knowledge of and willingness to prescribe naloxone to reverse accidental opiate overdose: challenges and opportunities; M. M. Straus, U. E. Ghitzza, and B. Tai, "Preventing deaths from rising opioid overdose in the U.S. - the promise of naloxone antidote in community-based naloxone take-home programs."

⁵² S Burris, J Norland, and B Edlin, "Legal aspects of providing naloxone to heroin users in the United States."

⁵³ M Doe-Simkins et al., "Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose."

⁵⁴ L. Beletsky, J. D. Rich, and A. Y. Walley, "Prevention of fatal opioid overdose; S Burris, J Norland, and B Edlin, "Legal aspects of providing naloxone to heroin users in the United States; Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit."

⁵⁵ New Mexico Administrative Code 7.32.7.8 "Individual Authorization to Administer Opioid Antagonist" (2001)("Persons, other than a licensed health care professional permitted by law to administer an opioid antagonist, are authorized to administer an opioid antagonist to another person if he, in good faith, believes the other person is experiencing an opioid drug overdose and he acts with reasonable care in administering the drug to the other person. It is strongly recommended that any person administering an opioid antagonist to another person immediately call for Emergency Medical Services.")

⁵⁶ State of New York Codes, Rules and Regulations 10.80.138 Opioid Overdose Prevention Programs; New York State Public Health Law Article 33, Title 1, Sec. 3309.

⁵⁷ S Burris, J Norland, and B Edlin, "Legal aspects of providing naloxone to heroin users in the United States."

⁵⁸ Ibid.

⁵⁹ Ibid; Maya Doe-Simkins et al., "Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose."

⁶⁰ S. Maxwell et al., "Prescribing naloxone to actively injecting heroin users: a program to reduce heroin overdose deaths."

⁶¹ S Burris, J Norland, and B Edlin, "Legal aspects of providing naloxone to heroin users in the United States."