

Opioid Overdose: Addressing the Growing Problem of Preventable Deaths



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Introduction

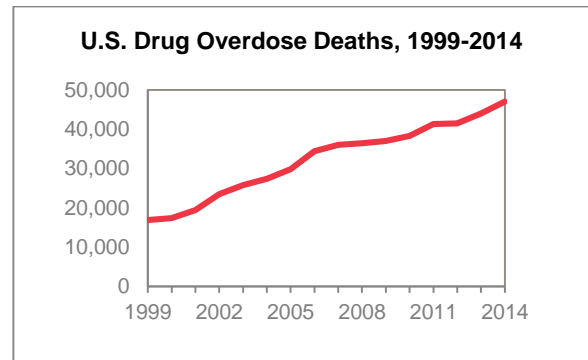
Overdose death rates in the U.S. have more than doubled over the past decade, surpassing motor vehicle accidents as the leading cause of injury-related death in the country.¹

According to the Centers for Disease Control and Prevention, 47,055 people – an average of 128 people a day – died from drug overdoses in 2014.² More people died of overdoses in 2014 than in any previous year on record.

Nearly half a million people have died of drug overdoses in the U.S. since 2000.³ Roughly 80 percent of overdose fatalities each year are deemed accidental.⁴

More than 18,000 overdose deaths in 2014 involved prescription opioids, compared to more than 10,000 that were attributed to heroin.⁵ Heroin overdose deaths have been increasing as some people who use or are dependent on prescription opioids have switched to heroin in recent years.⁶ Prior dependence on prescription opioids is the leading risk factor for heroin initiation, use and potential misuse.⁷

For some, initiation of heroin use may be driven by the relatively cheap price of street heroin compared to diverted prescription opioids, 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.⁸



Source: Centers for Disease Control and Prevention, 2016.⁹

Nearly half a million people have died of overdoses in the United States since 2000.

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.

Most overdose deaths actually occur one to three hours after the victim has initially ingested or injected drugs.¹⁰ The chance of surviving an overdose, like that of surviving a heart attack, depends greatly on how fast one receives medical assistance. Witnesses to heart attacks rarely think twice about calling 911, but witnesses to an overdose often hesitate to call for help or, in many cases, simply don't make the call. The most common reason people cite for not calling 911 is fear of police involvement.¹¹

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.¹²

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.

Exempting overdose witnesses from criminal prosecution encourages people to seek medical help right away in the event of an overdose. Such laws may also be accompanied by training for law enforcement, EMS and other emergency and public safety personnel.

This policy only protects the caller and victim from arrest and prosecution for simple drug possession, possession of paraphernalia, and/or being under the influence. Such legislation does not protect people from arrest for drug sales or other offenses.

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

DPA spearheaded passage of the nation's first 911 Good Samaritan law in New Mexico in 2007. Since then, 31 additional states – Alabama, Alaska, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Kentucky, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oregon, Pennsylvania, Rhode Island, Tennessee, Vermont, Washington State, West Virginia and Wisconsin – as well as the District of Columbia, have passed such laws.¹³

Some states, like Utah, Indiana and Virginia, 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.

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.¹⁴

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: <http://lawatlas.org/query?dataset=good-samaritan-overdose-laws>. 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.

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.¹⁵

Naloxone's only effects are to reverse respiratory failure resulting from an opioid overdose and to cause uncomfortable withdrawal symptoms in people who are opioid-dependent.¹⁶ It has no pharmacological effect if administered to a person who has not taken opioids,¹⁷ has no potential for abuse¹⁸ and does not lead to increases in drug use.¹⁹

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 takes effect. Naloxone's effects last for 30 to 75 minutes, allowing time for the arrival of emergency medical assistance.²⁰ 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.²¹ This latter form of administration has been used for many years by EMS responders and overdose prevention groups in several states. In November 2015, the FDA approved an intranasal naloxone formulation to be marketed under the brand name Narcan™ Nasal Spray.²²

Several studies have demonstrated that intranasal naloxone can be distributed to potential bystanders and later administered safely and effectively to reverse opioid overdoses.²³ 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 was the first naloxone delivery device to be approved by the FDA specifically for administration by laypeople outside of a healthcare setting.²⁴ A 2015 survey of physicians and people who use drugs reported that both groups found the device simple and easy to use to automatically detect an overdose and save a life.²⁵

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.²⁶ Currently, such efforts are small when compared to the scope of the national accidental overdose crisis, but their results are highly encouraging.²⁷

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 2014, community-based opioid overdose prevention programs were established and began distributing naloxone at nearly 650 locations across the country.²⁸
- *During this time period, these programs trained and equipped more than 152,283 laypeople with naloxone, who have successfully reversed 26,463 opioid overdoses.*²⁹
- 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 2009.³⁰ 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.³¹

Similar successes have been reported at community-based naloxone programs across the country. As of June 2015:

- The Chicago Recovery Alliance has trained 36,450 people and reversed 5,430 overdoses since 1996.
- The DOPE Project/HRC in San Francisco has trained 5,321 people and reversed 1,500 overdoses since 2003.
- The People's Harm Reduction Alliance in Seattle has trained 8,000 people and reversed 4,967 overdoses since 2005.
- The Harm Reduction Action Center in Denver has trained 307 people and reversed 101 overdoses since 2012.
- The North Carolina Harm Reduction Coalition has trained 2,232 people and reversed 115 overdoses statewide since 2013.
- The Prevention Point Overdose Prevention Project in Pittsburgh, PA, has trained 1,023 people and reversed 1,002 overdoses since 2005.

Systematic reviews of take-home naloxone have concluded that such programs prevent overdose fatalities.³²

- A 2015 systematic review conducted by the European Monitoring Centre for Drugs and Drug Addiction concluded that "There is evidence that educational and training interventions with provision of take-home naloxone decrease overdose-related mortality.... Take-home naloxone provision is an emergency life-saving intervention."³³
- A 2014 systematic review published in the *Journal of Addiction Medicine* reached similar conclusions, finding that "bystanders (mostly opioid users) can and will use naloxone to reverse opioid overdoses when properly trained, and...this training can be done successfully through opioid overdose prevention programs."³⁴

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.³⁵

Forty-two states – Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Michigan, Minnesota, Mississippi, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, 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.³⁶

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."³⁷ Specifically, the study found that one life could be saved for every 164 naloxone kits that are distributed.³⁸

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.³⁹

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.

Several states have begun making naloxone more readily available in pharmacies. Rhode Island, New York and Washington permit pharmacists to dispense naloxone to patients as long as a physician has an agreement with the pharmacy 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 further reduced consumer barriers to naloxone;⁴⁰ and in September 2014, California passed a law allowing for direct pharmacy dispensing of naloxone without a standing order or prescription – joining Vermont as the two states with the most expansive laws of their kind in the country.⁴¹

CVS pharmacies now sell naloxone without a prescription in 14 states.⁴² CVS, along with Rite Aid, Duane Reade and Walgreens, sell naloxone over-the-counter in New York City, while Ralph’s pharmacies do so throughout California.

Studies demonstrate that pharmacy-distribution of naloxone is safe and feasible.⁴³ 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.⁴⁴

Evidence indicates that laypeople who have not received naloxone training can still administer it accurately and effectively,⁴⁵ suggesting that naloxone should be made available as an over-the-counter medication throughout the U.S.⁴⁶

“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.”⁴⁷

– Centers for Disease Control and Prevention, 2012.

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.⁴⁸ 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.⁴⁹

While it is standard practice for paramedics in all 50 states to carry and use naloxone, a 2014 review of naloxone laws across the country found that only three states permitted basic life support personnel to carry and use naloxone. All first responders should be trained and permitted to carry and use naloxone.⁵⁰

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.^{51,52}

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.⁵³ 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.⁵⁴

For example, a study of more than 70,000 people released from Washington State prisons found that their overdose rate was nearly 13 times that of the general population during the first two weeks post-release.⁵⁵

Recognizing this elevated risk, overdose education – including naloxone – should be provided to all opioid-dependent people released from prison or jail.⁵⁶

“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.”⁵⁷

– 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.⁵⁸

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.”⁵⁹

Indeed, an increasing number of law enforcement agencies across the country are now equipping their officers, sheriffs and other personnel with naloxone. As of late 2014, law enforcement agencies in roughly a dozen states – California, Illinois, Indiana, Massachusetts, Michigan, New Jersey, New Mexico, New York, Ohio, Oklahoma, Rhode Island, Vermont – provide (or plan to provide) naloxone to their officers, deputies and other personnel – with many more departments expected to follow suit in coming years. Cities where some officers are equipped with naloxone include San Diego, California; Bartlett, Bloomingdale, 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.

“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.”⁶⁰

– Office of National Drug Control Policy, 2014

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 2014, ONDCP stated that the administration “strongly encourages local law enforcement agencies to train and equip their personnel with this lifesaving drug.”⁶¹

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.”⁶²

In July 2014, the Attorney General announced a plan to ensure that federal law enforcement agencies train and equip their personnel with naloxone.⁶³

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 skyrocketed 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.”⁶⁴

One key barrier to broader naloxone access in the U.S. is its status as a prescription drug.⁶⁵ 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.⁶⁶

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.⁶⁷ 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.⁶⁸

Explicit legal protection for naloxone distribution programs and/or prescribers is offered by only a handful of states.⁶⁹ 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.⁷⁰

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."⁷¹

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,⁷² 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 use⁷³ and that naloxone programs train participants in the full range of overdose responses and maintain thorough documentation.⁷⁴

Experts also point to the routine practice of making lifesaving medications available to third parties trained in emergency management;⁷⁵ 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;⁷⁶ and to the wide latitude provided by federal law for the prescription of drugs for uses beyond those indicated on their labels.⁷⁷

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 of 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 Rose A Rudd et al., "Increases in Drug and Opioid Overdose Deaths—United States, 2000–2014," *MMWR. Morbidity and mortality weekly report* 64, no. 50-51 (2016).

² Ibid.

³ Ibid.

⁴ Centers for Disease Control and Prevention, "Table 40. Specific Drugs Involved in Drug Poisoning Deaths, 2008–2013," http://www.cdc.gov/nchs/pressroom/heroin_deaths.pdf.

⁵ Rudd et al., "Increases in Drug and Opioid Overdose Deaths—United States, 2000–2014." A certain number of overdose deaths involve both prescription opioids and heroin (in 2013, it was 1,342).

⁶ Ibid.

⁷ Ibid.

⁸ See Margaret Warner, Holly Hedegaard, and Chen Li Hui, "Trends in Drug-poisoning Deaths Involving Opioid Analgesics and Heroin: United States, 1999–2012," (National Center for Health Statistics, Centers for Disease Control and Prevention, 2014) http://www.cdc.gov/nchs/data/hestat/drug_poisoning/drug_poisoning_deaths_1999-2012.pdf; N. Dasgupta et al., "Observed transition from opioid analgesic deaths toward heroin," *Drug Alcohol Depend* 145C(2014). See, e.g., Theodore J. Cicero et al., "The Changing Face of Heroin Use in the United States," *JAMA Psychiatry* (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).

⁹ Centers for Disease Control and Prevention, "Number and age-adjusted rates of drug-poisoning deaths involving opioid analgesics and heroin: United States, 2000–2014," http://www.cdc.gov/nchs/data/health_policy/AADR_drug_poisoning_involving_OA_Heroin_US_2000-2014.pdf.

¹⁰ Strang, J. Kelleher, M. Best, D. Mayet, S. Manning, V. "Preventing opiate overdose deaths with emergency naloxone: medico-legal consideration of new potential providers and contexts." Submitted to *British Medical Journal* 3 (16 September 2005); Peter J. Davidson et al., "Witnessing heroin-related overdoses: the experiences of young injectors in San Francisco," *Addiction* 97, no. 12 (2002).

¹¹ Ibid.; 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," *Drug Alcohol Depend* 79, no. 2 (2005).

¹² 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).

¹³ Michigan adopted a 911 Good Samaritan law that applies to minors only.

¹⁴ Banta-Green CJ et al., "Washington's 911 Good Samaritan Drug Overdose Law - Initial Evaluation Results," (Alcohol & Drug Abuse Institute, University of Washington,, 2011) <http://adai.uw.edu/pubs/infobriefs/ADAI-IB-2011-05.pdf>; 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."

¹⁵ Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit," (Rockville, Maryland: SAMHSA, 2013) <http://store.samhsa.gov/product/opioid-overdose-prevention-toolkit/all-new-products/sma13-4742>; M. M. Straus, U. E. Ghitza, and B. Tai, "Preventing deaths from rising opioid overdose in the US - the promise of naloxone antidote in community-based naloxone take-home programs," *Subst Abuse Rehabil* 2013, no. 4 (2013).

¹⁶ 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."

¹⁷ Substance Abuse and Mental Health Services Administration, "Opioid Overdose Prevention Toolkit," (Rockville, Maryland: SAMHSA, 2014) <http://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit-Updated-2014/SMA14-4742>.

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