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Preventing Opiate Overdose Deaths: Examining Objections to Take-Home Naloxone

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Abstract

Opiate overdose persists as a major public health problem, contributing to significant morbidity and mortality among opiate users globally. Opiate overdose can be reversed by the timely administration of naloxone. Programs that distribute naloxone to opiate users and their acquaintances have been successfully implemented in a number of cities around the world and have shown that non-medical personnel are able to administer naloxone to reverse opiate overdoses and save lives. Objections to distributing naloxone to non-medical personnel persist despite a lack of scientific evidence. Here we respond to some common objections to naloxone distribution and their implications.

Keywords

Naloxone; opiates; overdose; harm reduction

Opiate overdose persists as a major public health problem, contributing to significant morbidity and mortality among opiate users around the world,[1–3] In the U.S., heroin overdose contributes to roughly 2,000 deaths per year, and overdose deaths from prescription opiate analgesics have risen rapidly to more than 10,000 yearly.[4,5] Overdose-related deaths are concentrated among those most affected by opiate dependence: the poor, racial and ethnic minorities, and individuals cycling in and out of the criminal justice system.[6–9] These deaths are preventable through the timely administration of naloxone, a mu-opioid receptor competitive antagonist that displaces opiates from these receptors in the brain and reverses respiratory depression that can lead to death. Naloxone is safe, effective, inexpensive, and relatively easy to administer via intramuscular injection or nasal spray. Other than reversing the deleterious action of excess opiates, naloxone has no psychoactive effects and does not present any potential for abuse. Adverse reactions are rare, and arguably, these reactions are attributable to the presence of other drugs or the physiologic complications of overdose rather than the effects of naloxone itself.[10] Emergency medical professionals have long administered naloxone in response to cases of suspected opiate

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overdose. More recently, naloxone has been successfully distributed to opiate users and their friends and family in the U.K., Italy, Germany, Australia and a number of U.S. cities.[11–20] Early findings confirm that non-medical personnel are willing and able to administer naloxone when confronted with a life-threatening overdose, and when supplied with naloxone, many successfully use it to reverse overdoses and save lives.[11,15–19,21–24]

Despite these compelling findings, naloxone is available only to a small fraction of opiate users in the U.S., primarily through a limited number of local programs. A growing body of evidence suggests that provision of naloxone does not encourage opiate users to increase their drug consumption, nor does it increase the likelihood that they will harm themselves or those around them.[16,18,20] Nevertheless, objections to distributing naloxone to non-medical personnel persist. The challenge lies in addressing the concerns raised by policymakers and the public while allowing researchers to focus on evidence-based implementation and evaluation of the effectiveness of these programs.

Naloxone distribution programs are firmly rooted in the principles of harm reduction. They acknowledge the reality that drug use often continues despite an array of prevention and treatment efforts. Though treating substance dependence and stopping substance misuse are the ultimate goals, interventions to reduce the negative consequences of drug use, such as death from opiate overdose, are critical intermediary steps. Reducing morbidity and mortality through expansion of naloxone distribution responds directly to the epidemic of unnecessary opiate overdose deaths. Syringe exchange programs and opiate substitution therapy are other notable examples of harm reduction interventions that have gained considerable traction as evidence-based interventions despite initial resistance. Like these other harm reduction interventions, naloxone distribution programs are designed to improve the health of an unpopular population.[25] Negative social perceptions of drug users and an abstinence-oriented approach to drug dependence limit the political will to advocate for harm reduction interventions, with support for harm reduction interventions often taken to signal support for drug use.[26]

With naloxone distribution, as happened with other harm reduction measures for drug users, the burden of proof is placed inappropriately on researchers to dispel speculations about harm reduction that are based primarily on judgments about drug use and drug users. Drug users have long been stigmatized and remain the target of discrimination.[27–29] As a result, policy changes that protect the health, or improve the status of, drug users are low social priorities. Syringe exchange programs have been advanced on the basis of their ability to avert preventable HIV infections, the treatment of which incurs high costs for society. Overdose, which can often result in death, has not been addressed with the same enthusiasm, possibly because reducing overdose-related deaths does not produce clear economic benefits. Naloxone distribution programs remain among the last harm reduction programs be implemented widely. Here we describe some objections to take-home naloxone and their implications to illustrate how the controversy surrounding naloxone is shaped by judgments that undervalue the lives of individuals who use opiates.

One common objection to distributing naloxone to opiate users is that doing so might encourage increased drug use. Existing data on naloxone distribution in community settings do not support this claim.[16,18,20] Two studies of naloxone distribution and overdose prevention programs report a reduction in self-reported drug use.[18,20] In the absence of data that suggest naloxone distribution increases drug use, it is problematic to limit access to take-home naloxone under the assumption that drug users, given an apparent safety valve, will increase their opiate consumption. While the harm that could result from increased opiate use is a legitimate concern, this potential harm would have to be weighed against the

potential for naloxone to prevent overdose deaths. It is unethical to allow a narrow focus on the harms of drug use to overshadow an opportunity to save human lives.

Another objection raised to naloxone distribution relates to the perceived influence of an overdose-related hospital admission on motivating behavioral change.[30] It has been argued that enabling opiate users to reverse an overdose without being admitted to a medical setting delays entry to drug treatment and allows people to continue using opiates without facing some of the negative consequences of opiate misuse.[30] There is, however, no evidence to support this claim, and individuals who die as the result of an overdose because those around them are afraid to call 911 or because the ambulance arrives too late lose the opportunity to enter drug treatment. Training people to always call for medical assistance remains an important component of naloxone interventions because naloxone has a shorter half-life than heroin, which may cause respiratory depression to return even after an overdose has been reversed.[31] While having naloxone might reduce the likelihood that emergency services would be called in the event of an overdose, no data demonstrate this. One overdose prevention program in New York City found that 74% of participants called for help after administering naloxone,[17] which is similar to reports of the proportion of drug users in NYC who call for help after witnessing a heroin-related overdose.[32]

An additional objection to naloxone distribution is that an opiate overdose is a serious medical problem that must be handled by trained professionals, not by lay people.[33] Multiple studies, however, have shown that with basic training, drug users are fully capable of recognizing and responding to an opiate overdose.[11,15,19,21,22] Though substance dependence can impair decision-making and influence behavior, opiate-dependent individuals can still be competent to use naloxone to reverse an overdose. Green et al. found that trained drug users were as adept as medical experts in distinguishing the signs of an opiate overdose and determining whether naloxone was indicated.[22] For other medical emergencies, we often trust non-medical personnel to respond and provide them with the tools to do so. For instance, many individuals are trained in cardiopulmonary resuscitation (CPR), rescue breathing, and first aid. In many public places, automated external defibrillators are available for non-medical personnel to respond to cardiac arrest. It makes sense for a safe, effective, and easy-to-use tool for reversing opiate overdose to be readily available to drug users and those around them. Claiming that naloxone belongs exclusively in the hands of medical professionals represents, at best, unjustified paternalism based on scientifically unsupported perceptions about what is in the best interest of opiate users. At worst, it represents a denial of drug users' basic human dignity by devaluing their lives.

Until recently, the U.S. Office of National Drug Control Policy spoke out against the distribution of naloxone to drug users,[30,33] and in 2006 Congress failed to pass the Drug Overdose Reduction Act, which would have provided funding to expand naloxone distribution and other overdose prevention programs in the U.S.[34] In June 2009, the Drug Overdose Reduction Act was reintroduced to Congress.[35] With new leadership, there is an opportunity to support and expand naloxone distribution at a national level in order to control the epidemic of opiate overdose-related deaths in the U.S.

With take-home naloxone, as with other harm reduction interventions, the burden of proof falls on researchers to refute objections based on judgments about drug users. Providing overdose prevention training and take-home naloxone can empower drug users to protect themselves and those around them. Proposed methods to increase the availability of naloxone include encouraging physicians to prescribe naloxone to patients who use opiates, expanding distribution programs in community and correctional settings, and relabeling naloxone as an over-the-counter medication.[36,37] Working to prevent overdose deaths rather than focusing exclusively on stopping drug use may enable opiate users to live long enough

to have the opportunity to pursue effective treatment when they are ready. While research that further establishes the efficacy of naloxone may assist in expanding its distribution, the research and public policy agenda should not be defined primarily by objections that undervalue the lives of individuals who use opiates.

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Notes

1. Warner-Smith M, Darke S, Lynskey M, et al. Heroin overdose: causes and consequences. Addiction 2001 Aug;96(8):1113–1125. [PubMed: 11487418]
2. Warner-Smith M, Darke S, Day C. Morbidity associated with non-fatal heroin overdose. Addiction 2002 Aug;97(8):963–967. [PubMed: 12144598]
3. Darke S, Hall W. Heroin overdose: research and evidence-based intervention. J Urban Health 2003 Jun;80(2):189–200. [PubMed: 12791795]
4. Paulozzi LJ, Budnitz DS, Xi Y. Increasing deaths from opioid analgesics in the United States. Pharmacoepidemiol Drug Saf 2006 Sep;15(9):618–627. [PubMed: 16862602]
5. Warner, M.; Chen, LH.; Makuc, DM. Increase in fatal poisonings involving opioid analgesics in the United States, 1999–2006 (NCHS Data Brief, no 22). Hyattsville, MD: National Center for Health Statistics; 2009. Available at: http://www.cdc.gov/nchs/data/databriefs/db22.pdf
6. Krinsky CS, Lathrop SL, Brown P, et al. Drugs, detention, and death: a study of the mortality of recently released prisoners. The American Journal of Forensic Medicine and Pathology 2009 Mar; 30(1):6–9. Available at: http://www.bhc.state.nm.us/pdf/ASA_MAT_Workgroup_Post-release_Overdose_in_NM.pdf. [PubMed: 19237844]
7. Galea S, Vlahov D. Social determinants and the health of drug users: socioeconomic status, homelessness, and incarceration. Public Health Rep 2002 Jan;117 Suppl 1:S135–S145. [PubMed: 12435837]
8. Galea S, Ahern J, Tardiff K, et al. Racial/ethnic disparities in overdose mortality trends in New York City, 1990–1998. J. Urban Health 2003 Jun;80(2):201–211. [PubMed: 12791796]
9. Binswanger IA, Stern MF, Deyo RA, et al. Release from prison—a high risk of death for former inmates. N Engl J Med 2007 Jan;356(2):157–165. [PubMed: 17215533]
10. Hsu W, Rao RB, Nelson LS. Naloxone hazards overstated. J Toxicol Clin Toxicol 1997;35(2): 215–217. 219–220. [PubMed: 9120896]
11. Strang J, Manning V, Mayet S, 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 2008 Oct;103(10):1648–1657. [PubMed: 18821875]
12. Simini B. BOLOGNA Naloxone supplied to Italian heroin addicts. The Lancet 1998 Sep; 352(9132):967.
13. Dettmer K, Saunders B, Strang J. Take home naloxone and the prevention of deaths from opiate overdose: two pilot schemes. BMJ 2001 Apr;322(7291):895–896. [PubMed: 11302902]
14. Gaston RL, Best D, Manning V, et al. Can we prevent drug related deaths by training opioid users to recognise and manage overdoses? Harm Reduct J 2009 Sep;6:26. [PubMed: 19781073]
15. Doe-Simkins M, Walley AY, Epstein A, et al. Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose. Am J Public Health 2009 May;99(5):788–791. [PubMed: 19363214]
16. Maxwell S, Bigg D, Stanczykiewicz K, et al. Prescribing naloxone to actively injecting heroin users: a program to reduce heroin overdose deaths. J Addict Dis 2006 Jan;25(3):89–96. [PubMed: 16956873]

17. Piper T, Stancliff S, Rudenstine S, et al. Evaluation of a naloxone distribution and administration program in New York City. Subst Use Misuse 2008;43(7):858–870. [PubMed: 18570021]
18. Seal KH, Thawley R, Gee L, et al. Naloxone distribution and cardiopulmonary resuscitation training for injection drug users to prevent heroin overdose death: a pilot intervention study. J Urban Health 2005 Jun;82(2):303–311. [PubMed: 15872192]
19. Tobin KE, Sherman SG, Beilenson P, et al. Evaluation of the Staying Alive programme: training injection drug users to properly administer naloxone and save lives. Int J Drug Policy 2009 Mar; 20(2):131–136. [PubMed: 18434126]
20. Wagner KD, Valente TW, Casanova M, 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 2010 May;21(3):186–193. [PubMed: 19268564]
21. Galea S, Worthington N, Piper TM, et al. Provision of naloxone to injection drug users as an overdose prevention strategy: early evidence from a pilot study in New York City. Addict Behav 2006 May;31(5):907–912. [PubMed: 16139434]
22. Green TC, Heimer R, Grau LE. Distinguishing signs of opioid overdose and indication for naloxone: an evaluation of six overdose training and naloxone distribution programs in the United States. Addiction 2008 Jun;103(6):979–989. [PubMed: 18422830]
23. Lagu T, Anderson BJ, Stein M. Overdoses among friends: drug users are willing to administer naloxone to others. J Subst Abuse Treat 2006 Mar;30(2):129–133. [PubMed: 16490676]
24. Baca CT, Grant KJ. What heroin users tell us about overdose. J Addict Dis 2007;26(4):63–68. [PubMed: 18032233]
25. Des Jarlais DC, Paone D, Friedman SR, et al. Regulating controversial programs for unpopular people: methadone maintenance and syringe exchange programs. Am J Public Health 1995 Nov; 85(11):1577–1584. [PubMed: 7485676]
26. Riley, D.; O'Hare, P. Harm reduction: history, definition and practice. In: Inciardi, JA.; Harrison, LD., editors. Harm reduction: national and international perspectives. Thousand Oaks, CA: Sage Publications; 2000. p. 1-26.
27. Ahern J, Stuber J, Galea S. Stigma, discrimination and the health of illicit drug users. Drug Alcohol Depend 2007 May;88(2–3):188–196. [PubMed: 17118578]
28. Young M, Stuber J, Ahern J, et al. Interpersonal discrimination and the health of illicit drug users. Am J Drug Alcohol Abuse 2005 Jan;31(3):371–391. [PubMed: 16161724]
29. Room R. Stigma, social inequality and alcohol and drug use. Drug Alcohol Rev 2005 Mar;24(2): 143–155. [PubMed: 16076584]
30. Knox, R. Overdose rescue kits save lives. Washington, DC: National Public Radio; 2008 Jan 2. Available at: http://www.npr.org/templates/story/story.php?storyId=17578955
31. Baca CT, Grant KJ. Take-home naloxone to reduce heroin death. Addiction 2005 Dec;100(12): 1823–1831. [PubMed: 16367983]
32. Tracy M, Piper TM, Ompad D, et al. Circumstances of witnessed drug overdose in New York City: implications for intervention. Drug Alcohol Depend 2005 Aug;79(2):181–190. [PubMed: 16002027]
33. Smith, S. Globe Staff. Addicts to receive overdose antidote: kit and training for heroin users. Boston, MA: Boston Globe; 2007 Nov 2. Available at: http://www.boston.com/news/local/articles/2007/11/02/addicts_to_receive_overdose_antidote/
34. Drug Overdose Reduction Act. S. 3557. 109th Cong., 2d Sess. ed. 2006.
35. Drug Overdose Reduction Act. H.R. 2855. 111th Cong., 1st Sess. ed. 2009.
36. Kim D, Irwin KS, Khoshnood K. Expanded access to naloxone: options for critical response to the epidemic of opioid overdose mortality. Am J Public Health 2009 Mar;99(3):402–407. [PubMed: 19150908]
37. Wakeman SE, Bowman SE, McKenzie M, et al. Preventing death among the recently incarcerated: an argument for naloxone prescription before release. J Addict Dis 2009;28(2):124–129. [PubMed: 19340674]