Making Naloxone available to potential overdose witnesses: evidence and policy opportunities

Simon Lenton
PhD MPsysch(clin)
Background

- Narcan® reverses opioid effects & respiratory depression
- Decades of use in emergency medicine
- Since 1990s calls for peer access
- Mid 1990s increased access in Europe
- 2000 MJA paper – call for trial
Heroin and other opioid overdose

People die of opioid overdose because they stop breathing.

The Pons, the respiratory centre, “breathe, breathe, breathe.”

Opioids depress this respiratory drive.
Reminder:
heroin-related overdose
(From Darke & Hall, 2003)

- Older (mid 20’s to early 30s) experienced users most at risk
- Being in drug treatment, particularly opioid substitution, is protective
- ODs overwhelmingly involve poly drugs (esp. benzos & alcohol)
- Voluntary (Rx) or enforced (custody) abstinence → ↓ tolerance & ↑ risk
- Deliberate OD is unusual, overwhelmingly most accidental
Reminder:

Heroin-related Overdose

Opportunity to prevent deaths
In about:

- 70-80% **no intervention** before death (Darke et al., 1999)
- 60% of fatal ODs **someone else is present** (Darke & Zador, 1996; Loxley & Davidson, 1998; McGregor et al., 1998)
- 70% death occurs **>1 hour after injection** (Darke et al., 1999)
- 60 -75% of deaths occur **in the home** (Darke, et al. 1999)
- only 50-60% of ODs an **ambulance is called**
  
  (Burris et al., 2000; Darke, Ross & Hall et al., 1996)
Reminder: Reducing risk
Evidence-based strategies (Darke & Hall, 2003)

- Increase access and engagement in treatment esp. opioid substitution
- OD prevention protocols for treatment discharge and prison release
- Educating users re OD prevention including:
  - risk of poly drug use (esp. benzos & alcohol)
  - reduction of tolerance following abstinence (esp. Rx & prison)
  - Not using alone
  - Small taste first
- Training in OD management including:
  - Signs of overdose & importance of not leaving them to “sleep it off”
  - Encouragement to call ambulance early
  - CPR and airway management
  - Naloxone for peer administration
- Protocols between police, ambulance, drug user orgs re reducing routine police attendance at OD. (McGregor et al, 2001)
Naloxone for peer Administration
(Lenton & Hargreaves, 2000)

- Safety? Few complications in managing Heroin OD
- Just one part of emergency response to OD
- Poly drug use? Removing opioid usually prevents death
- Using alone? In 60% of fatalities person not alone
- Intoxicated Admin? Simpler than many other interventions
- Lead to more hazardous H use? Unlikely to be widespread
- Lead to more H users? Unlikely as H OD not main barrier
- Delay calling ambos? Some international evidence
- Increased mortality & morbidity? Possible but unlikely
- Use as Rapid detox? Unlikely
Heroin related deaths in Australia

Number of accidental deaths due to opioids among those aged 15-54 years, Australia, 1988-2005

(Extracted from Black, Roxburgh et al. 2008)
OD rates rise continues elsewhere

(From Stancliff, 2010)

Source: National Vital Statistics System
Implementation in US

(Seal et al, 2005)
San Francisco

(Chicago Recovery Alliance, 2008)

(Green, Heimer & Grau, 2008)
New Mexico

(Seal et al, 2005) NYC

Now you can help.

- Get trained in OVERDOSE prevention and response
- EVERY Thursday 4-7
- PM

- Pick up NALOXONE
- EVERY Friday 1-3

Lower East Side Homeless Outreach Center
204 Ave A
(646) 206-6900

Things to do with an opiate/heroin overdose using Naloxone

Naloxone is a medication prescribed for the reversal of opiate intoxication. The person presenting naloxone has been trained in its safe usage and has demonstrated competency in managing opiate-related overdose situations.

This program is designed to reduce the yearly 100 opiate-related overdose deaths in Chicago and each year, your cooperation is appreciated.

Naloxone is a safe medicine to use. If the person is unresponsive, the effects of the drug could cause confusion and agitation.

There may be no one else present to give naloxone (if the person is unresponsive) and even someone who is aware of the overdose may not be able to help.

Stimulation

- Call for help
- Lay the person on their stomach

Airway

- Make sure the breathing is clear

Rescue breathing

- Remember to breathe every 2 minutes

Evaluate

- Make sure the person is breathing

Muscular injection

- Make sure the person is breathing

Evaluate support

- Make sure the person is breathing

DPMP

Drug Policy Modelling Program

NDRI

National Drug Research Institute
Naloxone Programs

Training Components

- Variety of settings, durations and formats
- Many protocols, materials, videos, most available on-line
- Typical components include:
  - Review of the causes and how to prevent overdose
  - Assessment of an overdose
  - Necessity of calling an ambulance
  - Airway maintenance and rescue breathing
  - Naloxone and its administration
  - Post naloxone monitoring and support
  - Communication with ambulance and police services
  - Procedures for returns, new naloxone and reporting back
- Often pre-post evaluation
- May involve agreed OD management plan
2009 publications in MJA and DAR calling for increasing access to naloxone for peer administration in Australia
(Lenton, Dietze, Degenhardt, Darke, Butler)

Opioid overdose continues despite the ‘shortage’

International experience shows Naloxone safe and effective in hands of trained peers

A controlled trial in Australia no longer necessary

Called for:

- Increased availability with careful monitoring
- Good Samaritan legislation
- Support by key stakeholders for rescheduling
COMING ROUND TO NALOXONE

Anex and CAHMA: important advocacy

Push for heroin antidote scheme proposed

By Bruce Hall

ACI Health is investigating a trial program that would allow the family and friends of heroin users to obtain Naloxone hydrochloride (Naloxone) in the event of an overdose.

During the height of Australia’s heroin crisis of 1988-1991, an anti-drug 1000 Australian lives were lost to heroin-related events, including 280 deaths. The results of the inquiries have been learned, a 10-fold increase in 2000, an estimate that heroin use is on the rise.

ACI Health/The Australian Capital Territory government are developing and promoting the program, which is aimed at reducing the number of drug-related deaths and injuries, and providing a lifeline for those in need. Naloxone is an opioid antagonist that can reverse the effects of an overdose.

The push for the administration of the naloxone in the community is part of a national strategy to reduce drug-related deaths. The government is expected to announce the details of the program in the coming weeks.

ACI Health is also investigating a similar program in New South Wales and New South Wales, which has been ongoing for several years. The NSW program has already seen a reduction in the number of deaths, with a 20% drop in the first year.

The program is expected to be rolled out nationwide, with funding from the federal government, and will be available to anyone who requires it. The program is expected to cost around $1 million per year, with the cost being covered by a $2 per year prescription fee.
Survey of Overdose prevention programs: USA

Eliza Wheeler of Harm Reduction coalition (HRC) & Naloxone Overdose Prevention, Education (NOPE)

2010 on-line survey of programs known to the HRC

- ID 155 programs in 16 states ranging from state funded to underground (152 responded)
- Program duration ranged from 0-14 years (1996-2010)
- 53,339 kits dispensed
- 10,194 overdose reversals reported

Naloxone preparations distributed:

- 42% 1ml vials of naloxone
- 67 % 10ml vials of naloxone
- 17% 2ml Intranasal naloxone

Eliza Wheeler <wheeler@harmreduction.org>
Naloxone projects Worldwide

As of November 2010 programs distributing naloxone to drug users their peers, family members and others operated in:

- the U.K.
- the U.S.
- Canada
- Germany
- Georgia
- Russia
- Spain
- Norway
- Afghanistan
- China
- Kazakhstan
- Tajikistan
- Vietnam

It has been available across the counter in Italy since 1995.

(Eurasian Harm Reduction Network, November 2010; Curtis & Guterman, 2009)
The evidence:

1. Impact of training in OD management and Naloxone administration on knowledge and behaviour
UK (Strang et al, 2008)

- 239 opioid users in Rx pre- and post-training knowledge questionnaire and 3 month follow-up
- Significant improvements were seen in knowledge of risks of overdose, characteristics of overdose and appropriate actions to be taken; and in confidence in the administration of naloxone
- 78% of sample followed up at 3 months
- 18 overdoses (either experienced or witnessed) had occurred during the 3 months
- Naloxone was used on 12 occasions
- One death occurred in one of the 6 overdoses where naloxone was not used.
- In 12 Where naloxone was used, all 12 were reversed
UK (Williams, 2010)

- 187 family members and carers of opioid users
- 2 group RCT
  
  Experimental - 2 hour group training including naloxone

Control – 1 hour individual interview + DVD - no naloxone
UK (Williams, 2010)

Knowledge Domains

- **Risks**
  - Experimental
  - Control

- **Signs**
  - Experimental
  - Control

- **Actions**
  - Experimental
  - Control

- **Naloxone**
  - Experimental
  - Control

Comparisons across baseline, immediate, and 3-month follow-ups.
NYC (Markham Piper et al, 2007)

- 122 IDUs at NSPs trained in Skills, Knowledge and Overdose Prevention (SKOOP) (10-30 mins) + naloxone (2 x 1mg/ml) + script
- Re-interviewed when returned for re-fill
- Naloxone was administered 82 times
- In 68 (83%) the person lived, and the outcome in 14 (17%) cases was unknown (taken to hospital, rescuer left, etc)
- 82% of participants felt comfortable using naloxone if indicated
- 86% said they would want naloxone administered if overdosing

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td>Training methodology</td>
<td>Participants trained either individually, in pairs, or in small groups (5-15 people) by SEP and HRC staff</td>
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<tr>
<td>Duration of training</td>
<td>10–30 minutes</td>
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| Overdose prevention curriculum | (a) The causes of opiate overdose (i.e., loss of tolerance, mixing drugs, physical health and variation in strength of 'street drugs')
|                            | (b) How to avoid an opiate overdose (i.e., know your tolerance and supply, control your high, injection techniques, aware of risks of mixing drugs, and minimize using alone)
|                            | (c) Signs of an opiate overdose
| Naloxone curriculum        | (a) Information on naloxone
|                            | (b) Education about appropriate responses to opiate overdose (i.e., calling 911 and performing rescue breathing)
|                            | (c) Instructions on naloxone administration (intramuscular injection practices, the use of naloxone only with opiate-related overdose and the potential need for a second dose of naloxone)
|                            | (d) Methods of cooperating with police and medical staff post-naloxone administration and the importance of talking to drug using partners about naloxone and overdose response
| Physician involvement      | Posttraining, participants in the program met with an on-site physician for a brief (1–2 minutes), targeted medical history who then gave each participant a “naloxone kit”
| Naloxone kit               | A carrying case with the following contents: two doses of naloxone in pre-filled syringes (1 mg/ml), a rescue breathing mask, and written information summarizing overdose revival steps. A prescription was also give as proof of the legitimacy of the medication
NY State (Stancliff, 2010)

62 Naloxone distribution sites in state
- NSP, Hospitals, Community Health Centres,
- Drug Rx, Homeless shelters, HIV Rx

Legal protection From 2006
- Protects non-medical person administering naloxone from liability
- MD can provide naloxone for secondary admin.
- Must be dispensed by doctor or nurse

Of 353 reversals reported to the NY state Health Department:
- EMS called in at least 55%
- At least 55% needed only one dose
- 3 were reported as not surviving
Los Angeles (Wagner et al, 2010)

- 93 skid row IDUs trained (2006-2008)
- 66 enrolled in evaluation study and re-interviewed at 3 months
- 73% homeless or temporary accommodation
- Sig incr. in knowledge re OD and naloxone
- 22 responded to 35 overdoses
- 26 recovered, 4 died, 5 outcome unknown
- Responses:
  - 85% stayed with victim
  - 80% administered naloxone
  - 65% rescue breathing
  - 60% Calling EMS
  - 53% reported decreased drug use at FU
Boston (Doe-Simkins et al., 2009)

- August 2006 Boston Public Health Commission authorized program making intranasal naloxone kits available to potential overdose witnesses through NSPs
- 385 participants trained over 15 months without direct clinical care encounter
- 15 minute training, prefilled 2mg/2ml naloxone + atomiser
- FU with 278 participants
- 56 reported witnessing an OD
- 50 reported reversing an OD
- 74 successful reversals reported
- EMS involved in 21 of these
- Few complications reported

From “Four Tales of Overdose Survival” www.mass.gov.dph.bras
Other evidence: Re-intoxication

Naloxone has a shorter half life than heroin & many prescription opioids
Risk of people dropping again after administered naloxone wears off

ED concluded if they have normal vital signs, Glasgow Coma Scale score,
and are able to walk one hour after administration of naloxone they can be
safely released

Vilke et al (2003) Studied records of 998 Opioid ODs attended by EMS where
individual refused transport. Could not find 1 case where person died in the
12 hour period post naloxone

Maxwell et al (2006) not one case in 319 peer naloxone admin dropped again

In case of peer administered training
need to emphasize monitoring and
caring, refraining from further use
getting medical review

From Adelaide Advertiser Dec 2010
Other evidence: Secondary benefits engagement & empowerment

Stancliff (2010) Naloxone as part of OPP:
- Makes drug user health a priority in diverse settings
- Endorses IDUs as capable and concerned with their community
- A useful additional tool in outreach

"If you ever get in a meeting with some professional-type people, tell ‘em that, you know, people like us—
no, we’re not professionals, but if we have it at hand
we can save somebody’s life with this stuff
[naloxone] . . . it’s a lifesaver, there’s no question”.

"I’ve saved three people’s lives . . . Each time that
I’ve helped someone out it’s touched me somehow.
I start crying because I think, that could’ve been me,
you know, if I was still on the heroin.”

“Life is precious. I hope to god I’m never on it again,
but if I do relapse I hope someone has it [naloxone]
on them to save my life. Life is definitely precious”

From Maxwell (2010)

The evidence:

2. Impact of Naloxone distribution programs on rates of overdose in the community
The evidence: Wider distribution of Naloxone on OD indicators

Caveats

- There are observational studies which show that there have been reductions in OD deaths where naloxone programs have been implemented.
- These findings are compelling but can’t definitively attribute the declines to the naloxone programs as no control group/location comparisons.

However:

- Local experts often observe that other explanations are unlikely.
- Many public health interventions are not amenable to evaluation through RCTs.
- Some of our most effective interventions in the field of IDU, such as NSPs, rely on observational evidence of effectiveness.
The evidence: Wider distribution of Naloxone on OD indicators (Chicago)

Heroin-related Overdose Deaths in Cook County
1996 - 2007
Source: Cook County Medical Examiner’s Office

From Stancliff (2010)
The evidence: Wider distribution of Naloxone on OD indicators (NYC)

From Stancliff (2010)

Number of deaths:
- 1999: 663
- 2000: 675
- 2001: 799
- 2002: 766
- 2003: 827
- 2004: 778
- 2005: 812
- 2006: 874
- 2007: 749
- 2008: 666

Age-adjusted mortality rate per 100,000 New Yorkers:
- 2001: 12.5
- 2002: 11.9
- 2003: 12.7
- 2004: 12.0
- 2005: 12.4
- 2006: 13.2
- 2007: 11.1
- 2008: 9.7

Law passed establishing Naloxone programs

DPMP
Drug Policy Modelling Program

NDRI
National Drug Research Institute
Measures taken to facilitate Naloxone distribution programs internationally
New Mexico – Statutes for individuals & Programs in 2001

7.32.7.8 INDIVIDUAL AUTHORIZATION TO ADMINISTER OPIOID ANTAGONIST:
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.

The UK changed the legal status of naloxone in June 2005 so that it could be administered legally by a member of the public in an emergency situation

“exemption for parenteral administration in an emergency to human beings of certain prescription only medicines - Naloxone Hydrochloride”
(See http://www.opsi.gov.uk/si/si2005/20051507.htm Part 3, amendment 7)
International Legal Developments (2)

Baltimore City Health Department - House Bill 368: Overdose Prevention Pilot Program (July 1 2009 - June 30 2014)
Establishes an Overdose Prevention Pilot Program including the certification of individuals to administer an intranasal opioid antagonist under specific circumstances

New York State Legal protection From 2006 (Opioid Overdose Prevention Programs, Section 80.138 Regulations)
- Protects non-medical person administering naloxone from liability
- MD can provide naloxone for secondary admin.
- Must be dispensed by doctor or nurse

Scotland National Patient Group Directive (NPGD) (August 2010)
Allows naloxone to be prescribed by appropriately qualified nurses and pharmacists to assist the development of Take Home Naloxone programmes throughout Scotland
Policy options re availability of naloxone in Australia for use by potential overdose witnesses

- Do nothing until opioid overdoses increase?
- Do nothing until we get more evidence?
- Conduct / await a controlled trial?
- Address Good Samaritan Legislation?
- Commence & monitor prescription naloxone demonstration projects?
- Commence re-scheduling application?
- Advocacy based on program implementation internationally?
Policy options re availability of naloxone in Australia for use by potential overdose witnesses

❌ Do nothing until opioid overdoses increase
❌ Do nothing until we get more evidence
❌ Conduct / await a controlled trial
✓ Address Good Samaritan Legislation
✓ Commence & monitor prescription naloxone demonstration projects
✓ Consider a re-scheduling application
✓ Advocacy based on program implementation internationally
Australian Developments: Anex and CAHMA: important advocacy

Overdose antidote scheme proposed

By Bruce Lead

ACT Health is investigating a trial program that would allow the family and friends of heroin users who overdose to administer naloxone, an opioid antagonist, at the scene (the event of an overdose).

During the 2004-2005 period, 41 people died in the ACT as a result of a heroin overdose. An additional 92 individuals were hospitalised due to an overdose event. In 2006-07, 25 people died and 54 were hospitalised due to a heroin overdose.

Naloxone is a fully-approved drug that can reverse the effects of an opioid overdose by blocking the brain receptors activated by opioids, immediately reversing an overdose. It is effective against heroin and prescribed pain medications.

In the United States, where a program has been underway for over 20 years, the drug is carried by police officers and first aid teams. The program, known as Overdose Emergency Response Teams (OERT), has been replicated in 1,000 cities, according to the American Journal of Public Health.

The program says it would be most beneficial for people who use opioids and have a support network, who are often younger people. Without the initiative, it would be too late for 26% of people, 9,000 annually, including an exponential phenomenon and the exponential nature of a peer-supported drug-use group (as per the US model). The health spokesperson, Bruce Lead, stressed that the program was developed to assist those who are not in the treatment system, do not access the system, and who are not drug users. Similarly, the scheme is for those who are not in the treatment system, do not access the system, and who are not drug users.

The program’s success is in convincing people to take systemic action and not rely on emergency services to deal with drug use. The program’s goal is to reduce the risk of overdose and to support people in accessing treatment. It also aims to reduce stigma and discrimination by providing support to those who use drugs and their families.

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A.C.T. developments

Great policy and advocacy work by CAHMA, Anex and others

ACT Health Minister made supportive public statements re peer naloxone

Expanding Naloxone Availability in the A.C.T (ENAACT) committee
CAHMA, ATODA, ACT Health, ACT Div of GP, ACT Ambulance service, Pharmacy Guild, ATSI health services, Family Drug Support, Burnet, NDRI

Purpose: to provide expert guidance and support to key stakeholders to develop a program to expand naloxone availability in the ACT

Actions:
Meeting
Commenced design of prescription naloxone program
Collecting and adapting resources – training, evaluation etc.
Consulting with other experts
Commenced designing the evaluation
Communication strategy
Summary

- Naloxone is not a silver bullet for opioid overdose
- It is an additional intervention to those already used
- Good published studies from overseas show that:
  - Opioid users, peers and family members can be trained to recognise signs of OD and appropriately administer naloxone
  - Naloxone has been safely administered through these programs and helped save many lives
  - Very few adverse outcomes have been reported
  - Naloxone programs can facilitate outreach and empower users
- Observational evidence shows:
  - OD fatalities have been reduced in locations where naloxone programs have been implemented, but not able to say this is causal
- In Australia we should:
  - Commence and evaluate demonstration projects of prescription naloxone
  - Make policy and legal changes to facilitate expanding access