DPMP
Drug Policy Modelling Program

NDRI
national drug research institute

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

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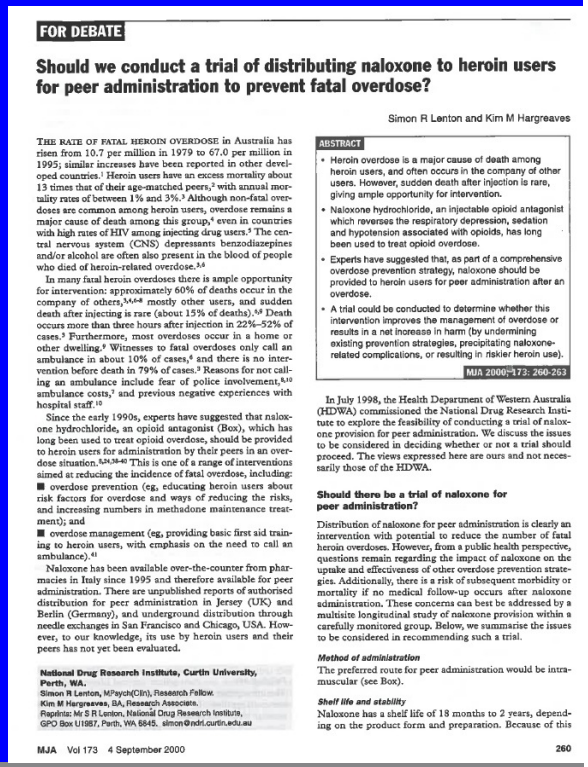
Background

- 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



FOR DEBATE

Should we conduct a trial of distributing naloxone to heroin users for peer administration to prevent fatal overdose?

Simon R Lenton and Kim M Hargreaves

ABSTRACT

- Heroin overdose is a major cause of death among heroin users, and often occurs in the company of other users. However, sudden death after injection is rare, giving ample opportunity for intervention.
- Naloxone hydrochloride, an injectable opioid antagonist which reverses the respiratory depression, sedation and hypotension associated with opioids, has long been used to treat opioid overdose.
- Experts have suggested that, as part of a comprehensive overdose prevention strategy, naloxone should be provided to heroin users for peer administration after an overdose.
- A trial could be conducted to determine whether this intervention improves the management of overdose or results in a net increase in harm (by undermining existing prevention strategies, precipitating naloxone-related complications, or resulting in riskier heroin use).

MJA 2000; 173: 260-263

THE RATE OF FATAL HEROIN OVERDOSE in Australia has risen from 10.7 per million in 1979 to 67.0 per million in 1995; similar increases have been reported in other developed countries.[1] Heroin users have an excess mortality about 13 times that of their age-matched peers,[2] with annual mortality rates of between 1% and 3%.[3] Although non-fatal overdoses are common among heroin users, overdose remains a major cause of death among this group,[4] even in countries with high rates of HIV among injecting drug users.[5] The central nervous system (CNS) depressants benzodiazepines and/or alcohol are often also present in the blood of people who died of heroin-related overdose.[3,6]

In many fatal heroin overdoses there is ample opportunity for intervention: approximately 60% of deaths occur in the company of others,[3,6-8] mostly other users, and sudden death after injecting is rare (about 15% of deaths).[3,9] Death occurs more than three hours after injection in 22%–52% of cases.[3] Furthermore, most overdoses occur in a home or other dwelling.[9] Witnesses to fatal overdoses only call an ambulance in about 10% of cases,[4] and there is no intervention before death in 79% of cases.[3] Reasons for not calling an ambulance include fear of police involvement,[8,10] ambulance costs,[7] and previous negative experiences with hospital staff.[10]

Since the early 1990s, experts have suggested that naloxone hydrochloride, an opioid antagonist (Box), which has long been used to treat opioid overdose, should be provided to heroin users for administration by their peers in an overdose situation.[8,34-40] This is one of a range of interventions aimed at reducing the incidence of fatal overdose, including:

- overdose prevention (eg, educating heroin users about risk factors for overdose and ways of reducing the risks, and increasing numbers in methadone maintenance treatment); and
- overdose management (eg, providing basic first aid training to heroin users, with emphasis on the need to call an ambulance).[41]

Naloxone has been available over-the-counter from pharmacies in Italy since 1995 and therefore available for peer administration. There are unpublished reports of authorised distribution for peer administration in Jersey (UK) and Berlin (Germany), and underground distribution through needle exchanges in San Francisco and Chicago, USA. However, to our knowledge, its use by heroin users and their peers has not yet been evaluated.

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In July 1998, the Health Department of Western Australia (HDWA) commissioned the National Drug Research Institute to explore the feasibility of conducting a trial of naloxone provision for peer administration. We discuss the issues to be considered in deciding whether or not a trial should proceed. The views expressed here are ours and not necessarily those of the HDWA.

Should there be a trial of naloxone for peer administration?

Distribution of naloxone for peer administration is clearly an intervention with potential to reduce the number of fatal heroin overdoses. However, from a public health perspective, questions remain regarding the impact of naloxone on the uptake and effectiveness of other overdose prevention strategies. Additionally, there is a risk of subsequent morbidity or mortality if no medical follow-up occurs after naloxone administration. These concerns can best be addressed by a multisite longitudinal study of naloxone provision within a carefully monitored group. Below, we summarise the issues to be considered in recommending such a trial.

Method of administration

The preferred route for peer administration would be intramuscular (see Box).

Shelf life and stability

Naloxone has a shelf life of 18 months to 2 years, depending on the product form and preparation. Because of this

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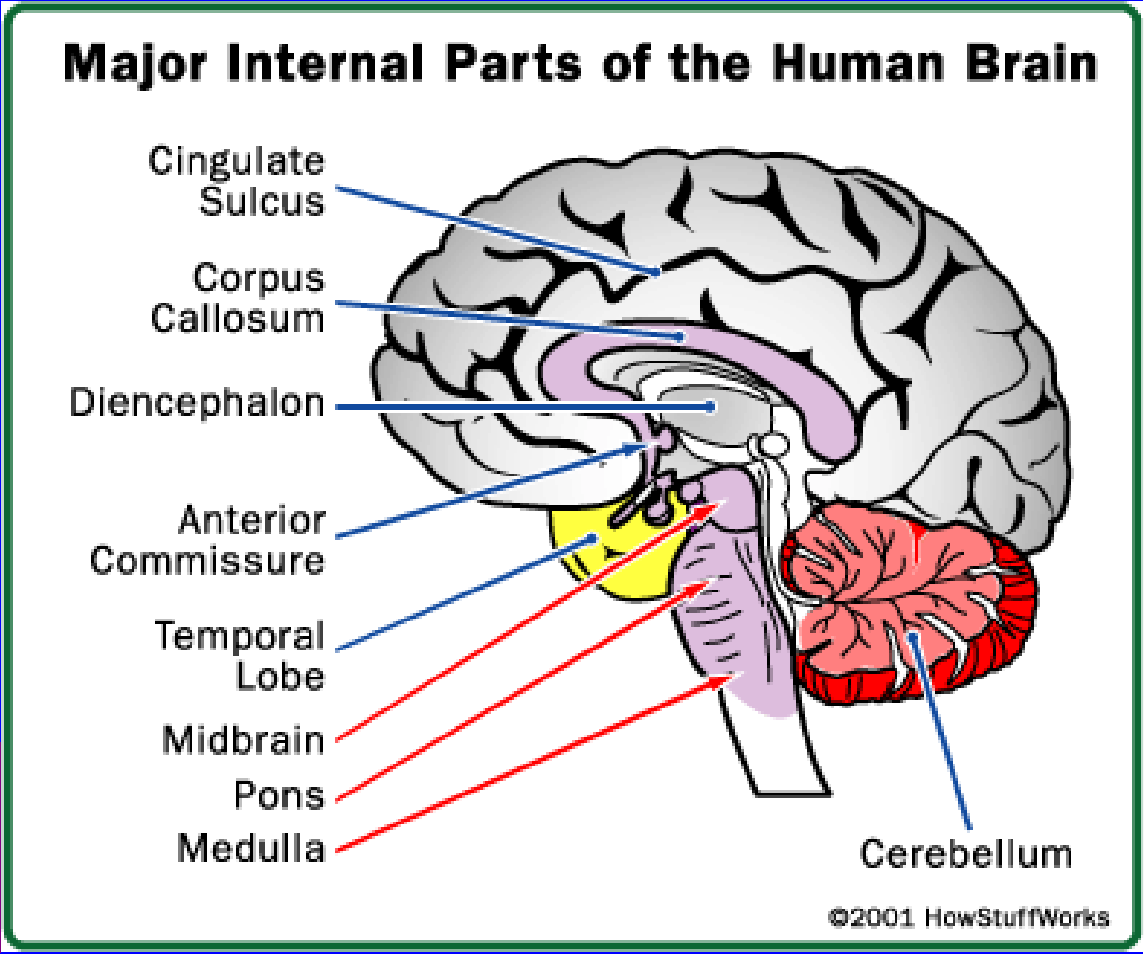
Heroin and other opioid overdose

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 >1hour 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)

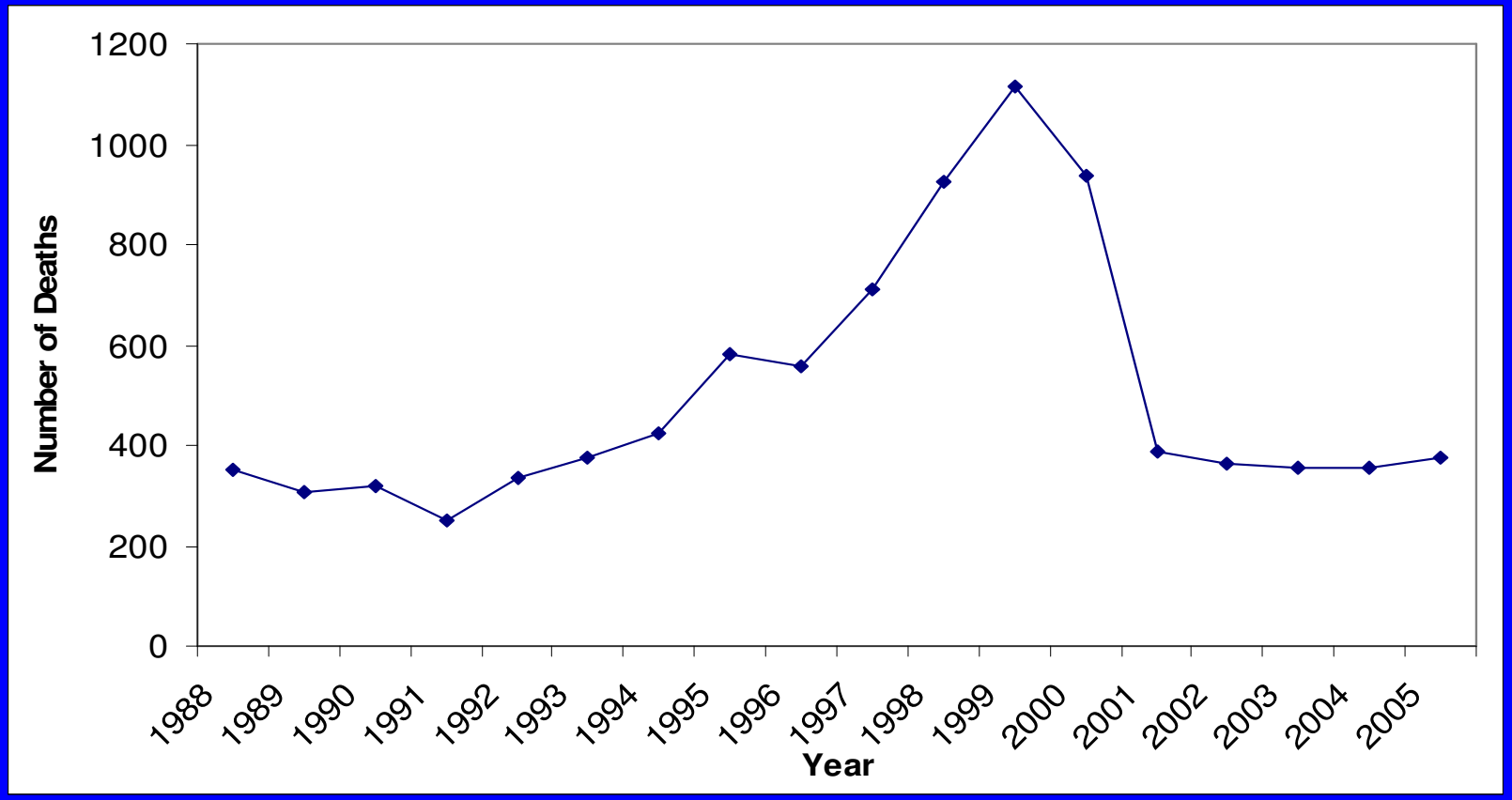
Naloxone for peer Administration

(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

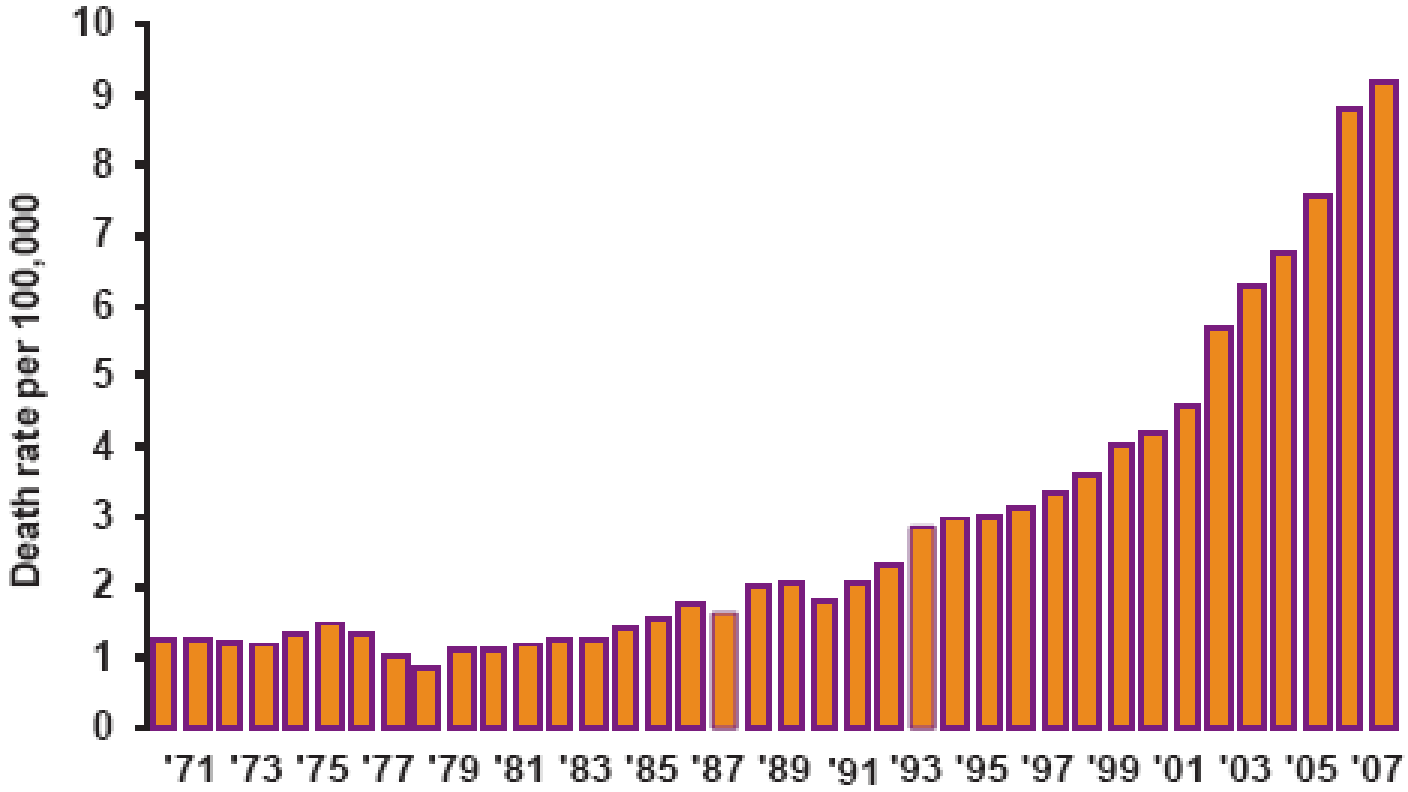
Number of accidental deaths due to opioids among those aged 15-54 years, Australia, 1988-2005



(Extracted from Black, Roxburgh et al. 2008)

OD rates rise continues elsewhere

Figure 1: Rate of unintentional drug overdose death in the United States, 1970-2007



(From Stancliff, 2010)

Source: National Vital Statistics System

Implementation in US

(Seal et al, 2005)
San Francisco

(Piper et al, 2007) NYC


Overdose takes the lives of nearly 1,000 people in New York City each year.

Now you can help.

✓ Get trained in OVERDOSE prevention and response
EVERY Thursday 4-7
Friday 12-2:30

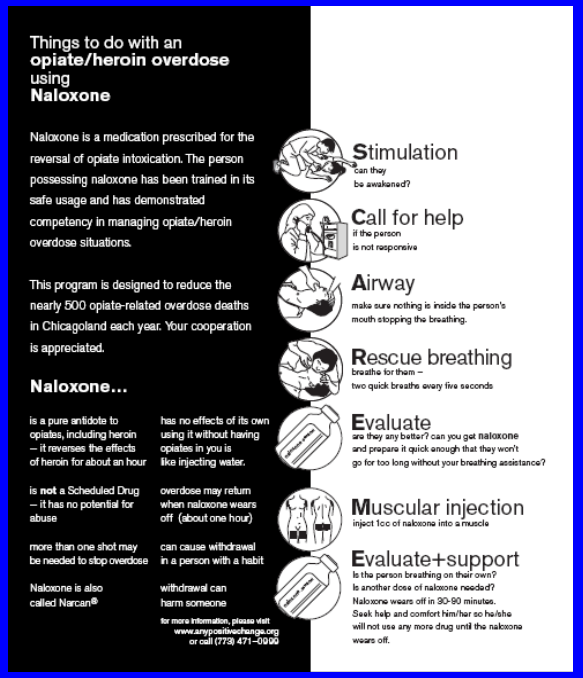
✓ Pick up NALOXONE
EVERY Friday 1-3

Lower East Side Harm Reduction Center
25 Allen Street
212-226-6333x143

Figure 2
Recruitment flyer used in SKOOP program by staff at Syringe Exchange Programs in New York City.

(Green, Heimer & Grau, 2008)
New Mexico

Philip Finty


Things to do with an **opiate/heroin overdose** using **Naloxone**

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

This program is designed to reduce the nearly 500 opiate-related overdose deaths in Chicagoland each year. Your cooperation is appreciated.

Naloxone...

is a pure antidote to opiates, including heroin – it reverses the effects of heroin for about an hour

is **not** a Scheduled Drug – it has no potential for abuse

more than one shot may be needed to stop overdose

Naloxone is also called Narcan®

has no effects of its own using it without having opiates in you is like injecting water.

overdose may return when naloxone wears off (about one hour)

can cause withdrawal in a person with a habit

withdrawal can harm someone

for more information, please visit www.anypositivechange.org or call (773) 471–0900

Stimulation
can they be awakened?

Call for help
if the person is not responsive

Airway
make sure nothing is inside the person's mouth stopping the breathing.

Rescue breathing
breathe for them – two quick breaths every five seconds

Evaluate
are they any better? can you get naloxone and prepare it quick enough that they won't go for too long without your breathing assistance?

Muscular injection
inject 1cc of naloxone into a muscle

Evaluate+support
Is the person breathing on their own?
Is another dose of naloxone needed?
Naloxone wears off in 30-90 minutes.
Seek help and comfort him/her so he/she will not use any more drug until the naloxone wears off.

(Chicago Recovery Alliance, 2008)

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

Naloxone for administration by peers in cases of heroin overdose

Simon R Lenton, Paul M Dietze, Louisa Degenhardt, Shane Darke and Tony G Butler

To the Editor: We wish to call for the removal of scheduling and legislative barriers in Australia that prevent easy access to naloxone for administration by peers to people suffering from a heroin overdose.

Use of illicit opioids, typically heroin, remains the major cause of illicit drug-related mortality in this country, with at least one accidental opioid overdose currently occurring each day.[1] Although population levels have not reached those seen during the peak in the late 1990s, geographically localised and transient increases in overdoses are evident.[2]

Death from heroin overdose typically occurs some time after use. In many cases, other people are present, and there is considerable scope for intervention to prevent death.[3] Yet, in more than 70% of cases of fatal overdose, there is no intervention, and, where action is taken, calling an ambulance is seldom the first strategy, resulting in even greater risk of death.[3]

Opioid substitution treatment (with methadone or buprenorphine) is the mainstay of overdose prevention in Australia. Other interventions implemented here include outreach services and education for injecting drug users about the risks of overdose and how to respond to it.[3]

In 2000, Lenton and Hargreaves summarised the evidence for distributing the opioid antagonist naloxone for administration by peers to prevent deaths from heroin overdose. They concluded that an Australian research trial was needed.[4] However, in 2001, the Australian heroin market was disrupted, heroin use and overdoses declined, and the trial did not proceed.

Since then, emerging international evidence has demonstrated that injecting drug-using peers, family members and outreach workers can successfully administer naloxone to reverse heroin overdose — with few, if any, adverse effects.[5] By December 2008 in the United States, 52 programs distributing naloxone for administration by peers were operating in 17 states, with over 1000 documented overdose reversals resulting from these programs.[5] Most concerns about the intervention — such as the possibility of unsafe naloxone administration, reintoxication or more risky drug use — appear to have been unfounded, and naloxone administration by trained peers has been shown to be a remarkably safe intervention.[5]

In our view, the international evidence clearly indicates that increased naloxone availability will prevent many cases of fatal overdose, that conducting a trial in Australia is now unnecessary, and that naloxone should be made available without delay to be administered by peers in cases of opioid overdose. Careful monitoring and evaluation should be a part of this process.

We call on all Australian states and territories to immediately enact Good Samaritan legislation to legally protect laypeople using naloxone in emergency situations. Naloxone should be reclassified from a Schedule 4 (S4) drug (available only on prescription) to S3 or S2 to make it available over the counter. As naloxone is no longer under patent,[5] there may be little financial incentive for a drug company to pursue rescheduling. However, it could be rescheduled in Australia under provisions that allow state health authorities, professional associations or the National Drugs and Poisons Schedule Committee to initiate the process.

Heroin overdose deaths are preventable. We need to take action now to enable peer-led intervention to reduce this serious outcome.

Competing interests: Louisa Degenhardt has received an untied educational grant from Reckitt Benckiser to investigate the diversion and injection of buprenorphine. No funder had any input to this letter.

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3 Darke S, Hall W. Heroin overdose: research and evidence-based intervention. *J Urban Health* 2003; 80: 189-200.
4 Lenton SR, Hargreaves KM. Should we conduct a trial of distributing naloxone to heroin users for peer administration to prevent fatal overdose? *Med J Aust* 2000; 173: 260-263.
5 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* 2006; 96: 402-407.

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EDITORIAL

Now is the time to take steps to allow peer access to naloxone for heroin overdose in Australia

Heroin overdose deaths are preventable. Overdose prevention in Australia has largely rested on opioid substitution treatment supplemented with outreach services and education for injecting drug users (IDUs) about overdose risks and responses. We believe now is the time to make naloxone hydrochloride (Narcan ®) available to Australian IDUs to help prevent overdose deaths.

At the end of 2000 heroin availability and harm in Australia rapidly declined [1].

Despite this, overdoses involving heroin or diverted pharmaceutical opioids continue to account for most illicit drug-related deaths in this country. In 2005, the last year reliable data were available [2], at least one citizen died from accidental opioid overdose each day, most related to the injection of heroin [3]. Heroin is still the drug of choice among the majority of Australian IDUs [2]. To date, there is no evidence that levels of heroin overdoses have increased to levels seen in the 1990s. However, transient geographical clusters of overdoses are evident in ambulance transport data (e.g. [4]). This pattern is consistent with the high number of low weight 'scatter importations' of heroin (through mail and air passenger traffic) that increasingly characterise heroin importations detected at the Australian border since 2004 [5].

Since the mid 1990s there have been calls to make naloxone available to heroin users, their peers and family members to prevent overdose deaths [6,7]. Lenton and Hargreaves reviewed the literature in 2000 and concluded that peer naloxone had real promise as part of a comprehensive overdose–response, but that an Australian trial was needed before naloxone was made more widely available in this country [8,9]. The dramatic decline in heroin overdose that accompanied the heroin 'shortage' [1,10] meant that the proposed trial did not proceed.

However, accumulating international evidence since 2000 shows that the provision of naloxone, with appropriate training, to IDU peers, family members and outreach workers can lead to successful heroin overdose reversals with few, if any, adverse effects (e.g. [11–13]). Indeed, many thousands of doses of naloxone have been distributed for this purpose. In the US alone, over a thousand cases of overdose reversal by peers using naloxone have been documented [11]. By December 2008 there were 52 peer–naloxone distribution programs operating across 17 US States [13]. None of the major concerns about the intervention (such as unsafe administration of naloxone, problems with re-intoxication where longer acting opioids have been used, or more risky drug use if heroin were to be seen as less dangerous) have eventuated and naloxone has been shown to be a remarkably safe intervention when administered by trained IDU peers [11,13–15]. The effectiveness of the intervention probably reflects the fact that training heroin users and their peers in naloxone administration has only been implemented as part of a comprehensive approach to overdose management (e.g. [12,16–18]).

A major concern relating to peer naloxone has been the legal ramifications of administering drugs to a third party [8,19]. In response to this concern, specific 'Good Samaritan' legislation has been enacted in some jurisdictions (e.g. the UK and some states of the USA) in order to indemnify against prosecution those third parties who in good faith administer a life-saving drug. Prescription and scheduling issues also present as possible systemic barriers to implementing these programs. In California, New York, New Mexico and Connecticut naloxone can be legally prescribed to third-party lay people [13]. In other jurisdictions (e.g. Italy) naloxone is available over-the-counter, thereby eliminating the necessity of a prescription, and there have been no adverse consequences reported [13]. Another concern has been raised around the potential for blood-borne virus transmission as naloxone has traditionally been administered by injection [20]. However, intranasal administration of the drug has been successfully trialled with paramedics, thereby decreasing any risk of blood-borne virus transmission through needle stick injury [21]. Intranasal naloxone kits are distributed by health authorities in New Mexico and Massachusetts [13] and there are now case reports of 74 successful overdose reversals by peers using intranasal naloxone in Boston [16]. These developments show that the barriers to wider naloxone distribution are certainly surmountable [19]. An

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Anex and CAHMA: important advocacy

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Overdoses are again in the news, but this time the community is learning that a range of prescription drugs can also put people at risk when misused or mixed with other depressants including alcohol. This edition of the Bulletin looks primarily at opiate overdoses.

NALOXONE 101

Naloxone Hydrochloride (trade name Narcan®) is a pure opioid antagonist that reverses the effects of opiate overdose. It has no agonist properties, and in the absence of opioids naloxone exhibits little significant pharmacologic activity.

Overdose from the use of illicit opioids, particularly heroin, continues to account for most illicit drug-related deaths in Australia. However, a majority of overdoses involving heroin or diverted pharmaceutical opioids are preventable. Emergency responders such as paramedics and emergency room physicians have been using Naloxone since the 1970s to revive people who are suffering from an opioid overdose.

Evidence suggests that in a majority of opioid overdose situations other people are present, creating considerable scope for intervention to prevent death by overdose.

Intranasal Naloxone has been successfully trialled by paramedics in the US. A pilot is underway in the UK. Intranasal naloxone has also been successfully trialled in Victoria.

A series of peer-reviewed articles about naloxone can be downloaded from the Anex website.

COMING ROUND TO NALOXONE

The push for naloxone administration by non-medical personnel needs to be regenerated with "bold pragmatism" that characterised Australia's early needle and syringe programs, clinician and leading drug researcher Professor Simon Lenton believes.

"I reckon it will happen, the question is when? It's about whether we take the steps we should sensibly be taking now in terms of looking at legislation, the barriers," Professor Lenton told the Bulletin.

"If we go back to mid-80s when NSPs were starting to evolve, the people that were involved recognised that there was a need and got on and did it, rather than sitting around waiting for controlled trials," Professor Lenton said.

"They knew there were some concerns, but knew it was worth getting on with. This debate about naloxone hasn't been characterised by that pragmatic stance," he said.

Professor Lenton is one of two Deputy Directors at the National Drug Research Institute at Curtin University in Western Australia. He is also a clinical psychologist in private practice.

"The heroin shortage hit at the end of 2000, and all the momentum for moving forward on naloxone distribution to peers and others fell away. The focus has been on amphetamines, but latest figures still show that on average one Australian dies of a heroin overdose each day," he said.

Although fatal and non-fatal overdoses are currently no where near the peak years associated with the heroin glut, it is no excuse for inaction or complacency, said Professor Lenton.

"We shouldn't be waiting for the next heroin glut and spike in overdoses to generate the momentum to roll out this safe and effective intervention," he said.

The call for progress is echoed by many experts in the field, including Sydney-based clinician, Professor Nick Lintzeris, who told The Bulletin of signs that Australia's first pilot naloxone distribution amongst non-medical personnel is a possibility.

An early co-implementer of non-medical personnel naloxone programs in the United States city of Boston, Ms Maya Doe-Simkins, remains surprised that non-medical personnel access to the lifesaving medication remains off limits in Australia.

"It is ironic that the country that gave the world the first seat belt laws is falling behind in this vital accidental death prevention," Ms Doe-Simkins told the Bulletin.

Mr Tony Trimmingham established Family Drug Support after his son died of an overdose. He said his organisation supports making naloxone available to non-medical personnel, including family members of people who use opiates illicitly.

A proposal for a pilot peer distribution of naloxone program has been developed by the ACT drug user organisation, Canberra Alliance for Harm Minimisation and Advocacy (CAHMA).

According to CAHMA Manager, Ms Nicole Wiggins, the ACT program proposes a two year pilot that will train 200 peers in naloxone administration and overdose management and then distribute naloxone to the participants on completion of the training.

continued on page 6...

CHICAGO PIONEER EXPLAINS

What would you say to people in Australia who are considering non-medical personnel distribution of naloxone, or doctors who wonder if they should get involved through prescriptions?

"I have been a doctor for 25 years and being involved in this is the single most rewarding thing I have done in my career. Not many doctors can say I have saved more than 2000 lives. Not many health administrators can say I did something that saved 500 lives last year. To be able to do that is just unreal. It's a real lifesaver."

Full story backpage

AGEING COHORT OVERDOSE RISK

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OUTREACH WORKER A REVIVER

Page 6

Canberra Times October 2010

News

Push for heroin overdose drug

Canberra Times 1/12/10 p.3.

Overdose antidote scheme proposed

By Bianca Hall

ACT Health is investigating a trial program that would allow the families and friends of heroin and opiate users to resuscitate them in the event of an overdose.

During the height of Australia's heroin glut of 1998-2001, an estimated 1000 Australian lives were lost to overdose each year.

But drug and health workers say while heroin use rates are dropping in Australia, opiate use – including pharmaceutical opiate prescriptions – continues to be widespread.

Family Drug Support founder Tony Trimington said, "The deaths have still been running at the rate of about 400 a year and we have evidence that heroin is on the rise again."

Mr Trimington's son Damien died of a heroin overdose in a Sydney alley in 1997, aged 23.

"As a father who lost his son to an overdose I can say that to have a supply [of the anti-overdose drug Narcan] on the premises would save lives. I regard it as very important."

According to ACT Health figures, ambulance officers attended more than 120 heroin overdoses last year.

In Australia, only emergency personnel such as ambulance workers and paramedics are authorised to administer the anti-overdose drug nalaxone, commonly known by its brand name Narcan.

The proposal, which would be an Australian first, was put to ACT Health by the Alcohol Tobacco and Other Drug Association.

Association health worker Geoffrey Ward said, "It's a town with a lot of substance abuse issues across the board, really, but there was a spike in methamphetamine use that has settled down.

"We're now trending back to use of opiates."

If the association's proposal succeeds, an opiate user would be prescribed Narcan to be administered by a third party such as a housemate, partner or family member. That third party would be trained to administer the drug in the event of overdose.

Narcan works by blocking the brain receptors activated by opiates, instantly reversing an overdose. It is effective against heroin and prescription opiate overdoses.

In the United States, where a heroin or opiate user's peers can administer Narcan for them in 17 states, 1000 lives were saved in 2008, according to the *American Journal of Public Health*.

The association says it would be most beneficial for people recently released from prison, who are of high risk of overdose.

It says the initiative could be tried for 24 months for $200,000, including an external evaluation and the establishment of a peer-supported drug-user group to implement the program.

ACT Health spokeswoman Hasnah Scheding said the organisation was investigating whether there were legal barriers to introducing a pilot program and whether it had the support of local medical practitioners.

"Preliminary advice is that it is something that could potentially save lives and, if targeted well and supported by key groups locally, it may be a valuable addition to current drug overdose prevention interventions in the ACT," she said.

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:

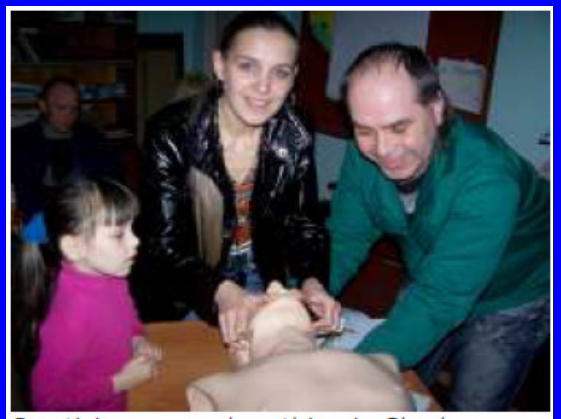
- 42% **1ml vials** of naloxone
- 67 % **10ml vials** of naloxone
- 17% **2ml Intranasal** naloxone

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



Practicing rescue breathing in Cherkassy

PHOTO: CHRISTOPHER IONS

PHOTO: CHRISTOPHER IONS

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



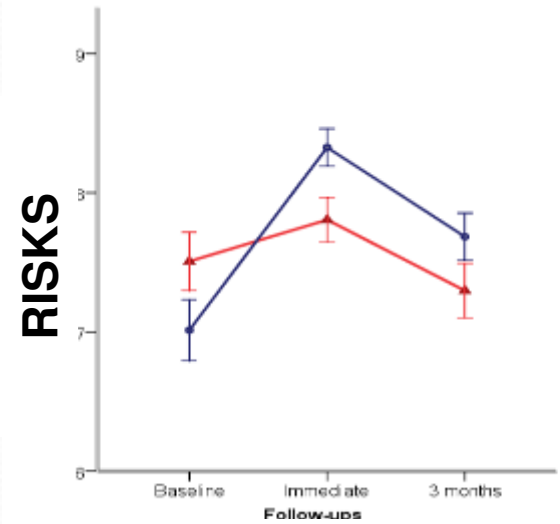
Control –1 hour individual interview + DVD - no naloxone

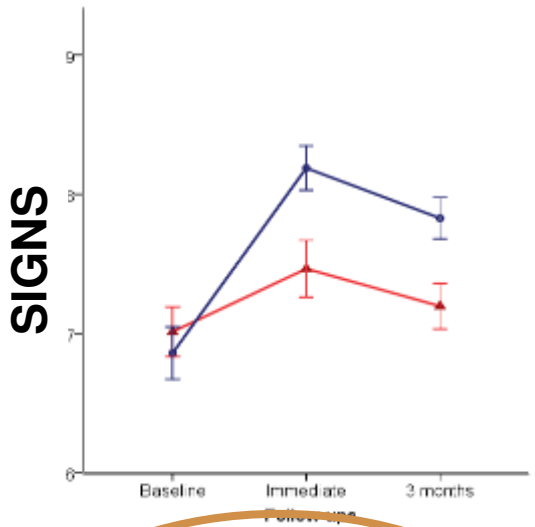
UK (Williams, 2010)

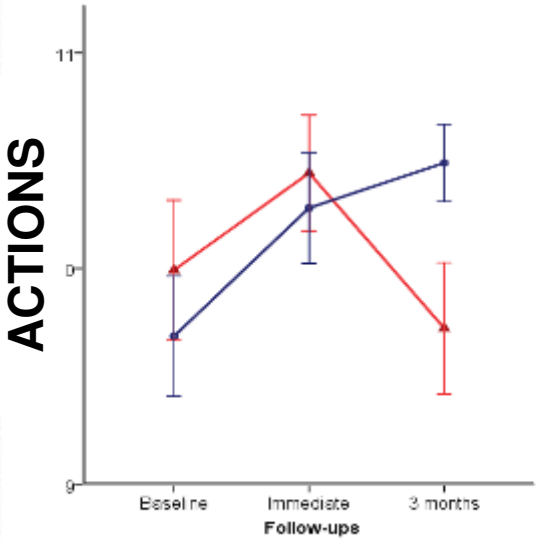
Knowledge Domains

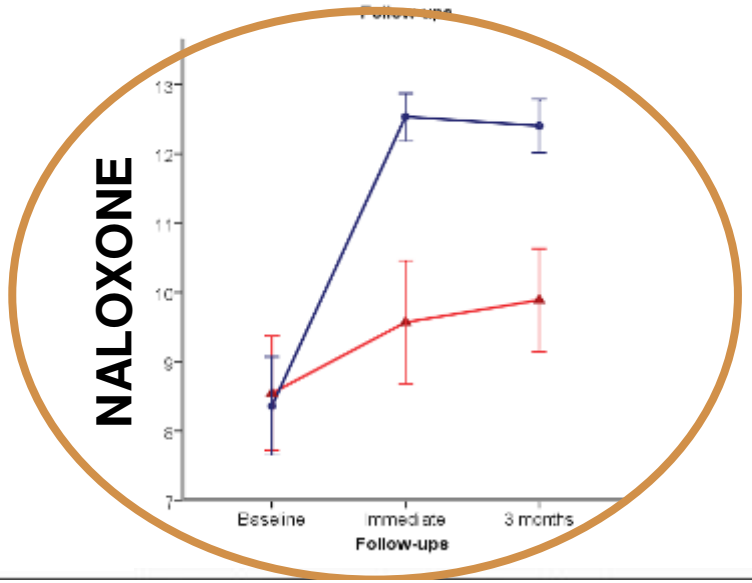
Experimental

Control









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 1
Overview of SKOOP Training Program

Component	Description
Training methodology	Participants trained either individually, in pairs, or in small groups (5–15 people) by SEP and HRC staff
Duration of training	10–30 minutes
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

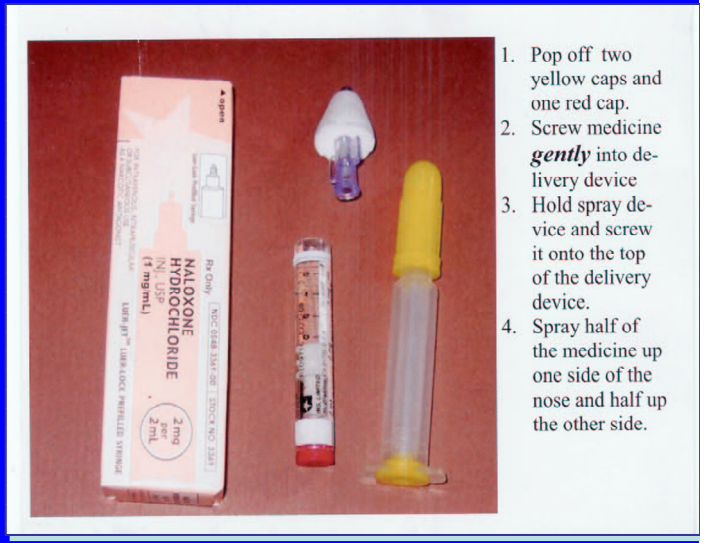
NSP, Hospitals , Community Health Centres, Drug Rx, Homeless shelters, HIV Rx

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

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Research paper

Evaluation of an overdose prevention and response training programme for injection drug users in the Skid Row area of Los Angeles, CA

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ABSTRACT

Background: Fatal opioid overdose is a significant cause of mortality among injection drug users (IDUs). Methods: We evaluated an overdose prevention and response training programme for IDUs run by a community-based organisation in Los Angeles, CA. During a 1-h training session participants learned skills to prevent, recognise, and respond to opioid overdoses, including: calling for emergency services, performing rescue breathing, and administering an intramuscular injection of naloxone (an opioid antagonist). Between September 2006 and January 2008, 93 IDUs were trained. Of those, 66 (71%) enrolled in the evaluation study and 47 participants (71%) completed an interview at baseline and 3-month follow-up. Results: Twenty-one percent of participants were female, 42% were white, 29% African American, and 18% Latino. Most were homeless or lived in temporary accommodation (73%). We found significant increases in knowledge about overdose, in particular about the use of naloxone. Twenty-two participants responded to 35 overdoses during the follow-up period. Twenty-six overdose victims recovered, four died, and the outcome of five cases was unknown. Response techniques included: staying with the victim (85%), administering naloxone (80%), providing rescue breathing (65%), and calling emergency services (60%). The average number of appropriate response techniques used by participants increased significantly from baseline to follow-up ($p < 0.05$). Half (53%) of programme participants reported decreased drug use at follow-up.
Conclusion: Overdose prevention and response training programmes may be associated with improved overdose response behaviour, with few adverse consequences and some unforeseen benefits, such as reductions in personal drug use.

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Introduction

Fatal opioid overdose is a significant cause of premature mortality. The U.S. Centers for Disease Control and Prevention reported that in 2005, 33,541 persons died of drug-induced causes in the United States (Kung, Hoyert, Xu, & Murphy, 2008). In 2003, opioids were responsible for more drug-related deaths than any other drug as reported by the U.S. Drug Abuse Warning Network (DAWN) (SAMHSA Office of Applied Studies, 2005). Heroin or metabolites specific to heroin were reported in over a third of opioid-related overdose deaths, though prescription opioids such as methadone, hydrocodone, and oxycodone, also contributed significantly (SAMHSA Office of Applied Studies, 2005; Zacny et al., 2003).

Intravenous administration of opioids significantly elevates the risk of overdose (Sporer, 1999). Studies among IDUs in the U.S. and elsewhere have found rates of witnessed drug overdose ranging from 54% to 92% (Galea et al., 2006; Pollini et al., 2006; Seal et al., 2003; Strang et al., 1999), and rates of non-fatal overdoses experienced by IDUs ranging from 40% to 68% (Galea et al., 2006; Kerr et al., 2007; Pollini et al., 2006; Strang et al., 1999). Opioid overdose results in mortality by depressing respiration in the overdose victim, ultimately leading to hypoxia and death (White & Irvine, 1999). However, as this can takes between 1 and 3 h, there is time for medical intervention (Sporer, 1999).
IDUs have demonstrated a willingness to be trained to respond to opioid overdoses among their peers (Seal et al., 2003; Strang et al., 1999; Strang, Best, Man, Noble, & Gossop, 2000), and preliminary evaluations suggest training programmes can increase knowledge and response skills, potentially saving lives (Green, Heimer, & Grau, 2008). Training programmes have been implemented in the U.S. in New York (Galea et al., 2006; Piper et al., 2007), Chicago (Maxwell,

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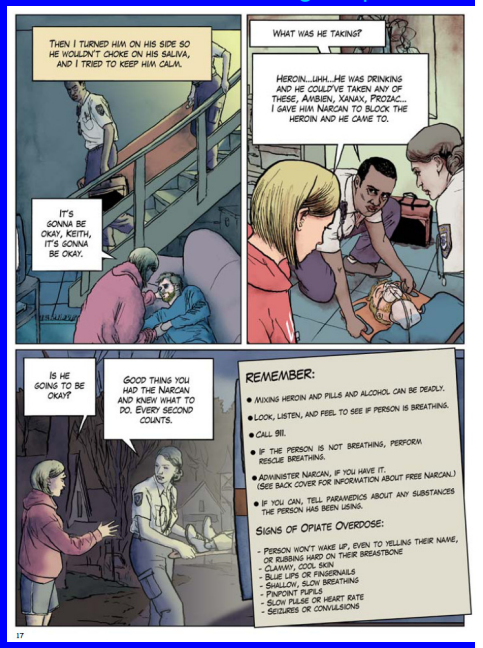
DPMP Drug Policy Modelling Program

NDRI national drug research institute

Boston (Doe-Simkins et al., 2009)

- August 2006 Boston Pubic 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.bsas



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

Christenson et al (2000, 2001) Monitored of 573 cases of opioid OD treated at 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

From Adelaide Advertiser Dec 2010

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

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

From Maxwell (2010)

"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 et al (2006)

The evidence:

2. Impact of Naloxone distribution programs on rates of overdose in the community

The evidence: Wider distribution of Naloxone on OD indicators

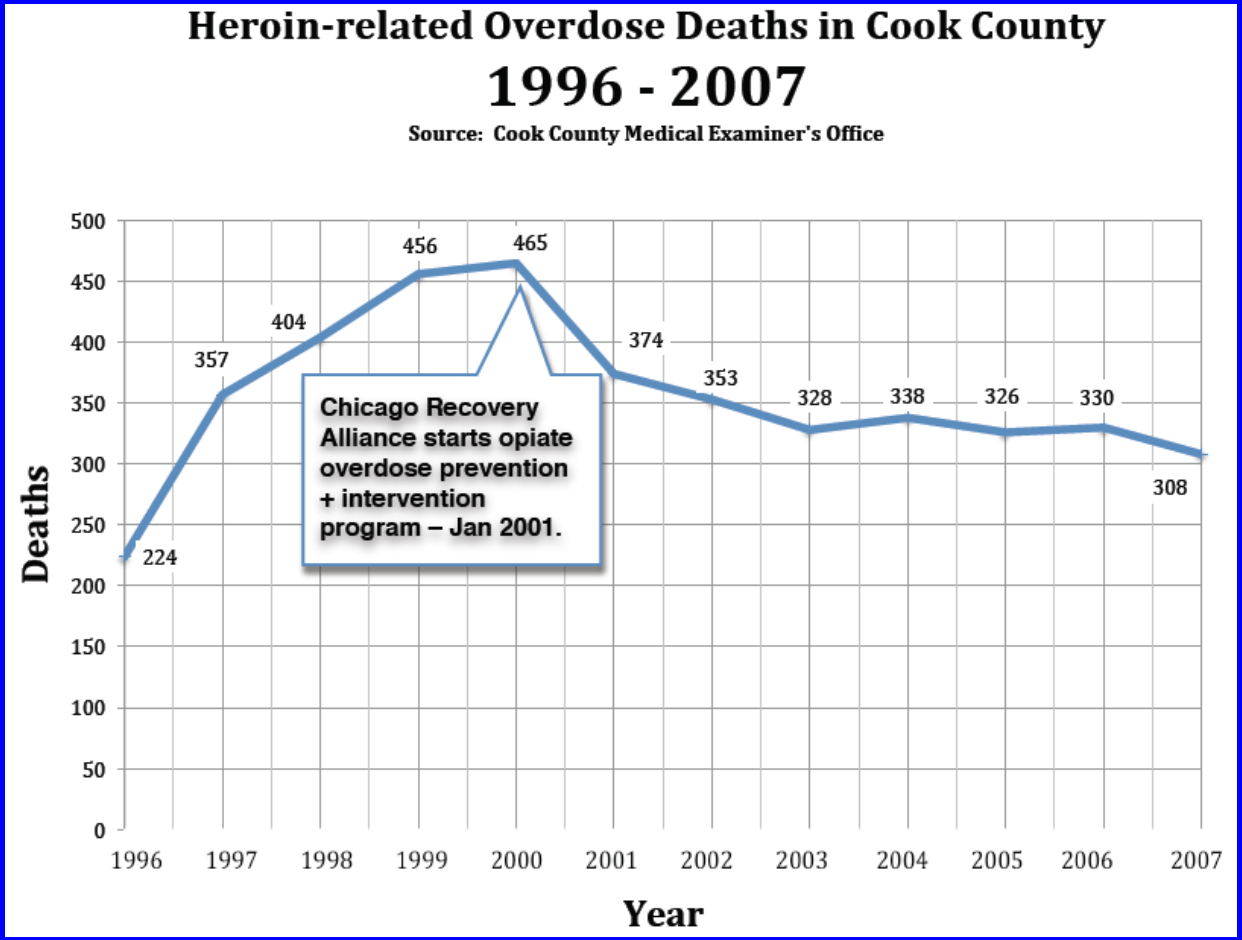
Caveats

- 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:

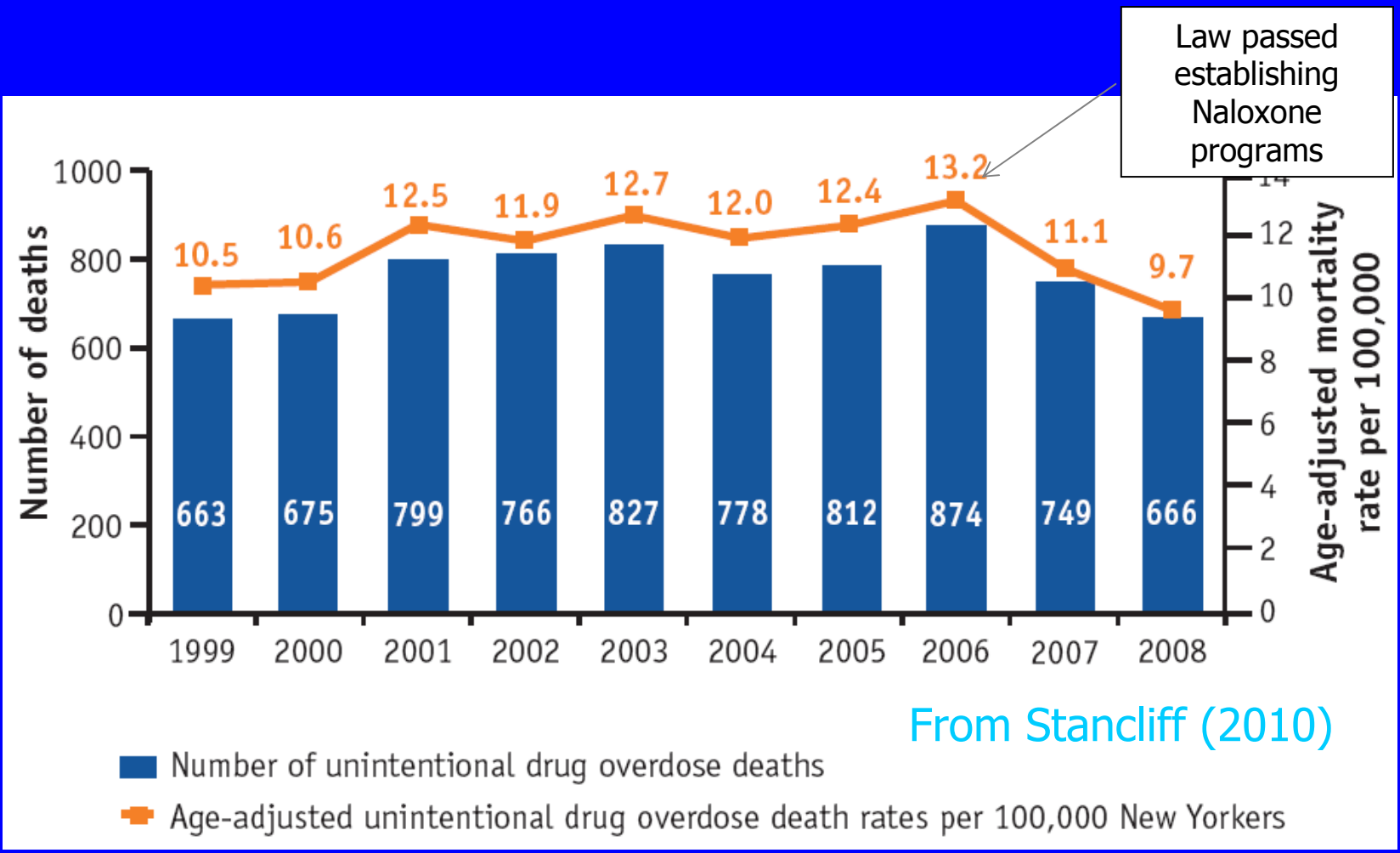
- Local experts often observe that other explanations are unlikely
- Many public health interventions are not amenable to evaluation though RCTs.
- Some of our most effective interventions in the field of IDU, such as NSPs, rely on observational evidence of effectiveness.

The evidence: Wider distribution of Naloxone on OD indicators (Chicago)



From Stancliff (2010)

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



Measures taken to facilitate Naloxone distribution programs internationally

International Legal Developments (1)

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

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Australian Developments: Anex and CAHMA: important advocacy

anex bulletin
volume 9
edition 1
October 2010

Overdoses are again in the news, but this time the community is learning that a range of prescription drugs can also put people at risk when misused or mixed with other depressants including alcohol. This edition of the Bulletin looks primarily at opiate overdoses.

NALOXONE 101

Naloxone Hydrochloride (trade name Narcan®) is a pure opioid antagonist that reverses the effects of opiate overdose. It has no agonist properties, and in the absence of opioids naloxone exhibits little significant pharmacologic activity.

Overdose from the use of illicit opioids, particularly heroin, continues to account for most illicit drug-related deaths in Australia. However, a majority of overdoses involving heroin or diverted pharmaceutical opioids are preventable. Emergency responders such as paramedics and emergency room physicians have been using Naloxone since the 1970s to revive people who are suffering from an opioid overdose.

Evidence suggests that in a majority of opioid overdose situations other people are present, creating considerable scope for intervention to prevent death by overdose.

Intranasal Naloxone has been successfully trialled by paramedics in the US. A pilot is underway in the UK. Intranasal naloxone has also been successfully trialled in Victoria.

A series of peer-reviewed articles about naloxone can be downloaded from the Anex website.

COMING ROUND TO NALOXONE

The push for naloxone administration by non-medical personnel needs to be regenerated with "bold pragmatism" that characterised Australia's early needle and syringe programs, clinician and leading drug researcher Professor Simon Lenton believes.

"I reckon it will happen, the question is when? It's about whether we take the steps we should sensibly be taking now in terms of looking at legislation, the barriers," Professor Lenton told the Bulletin.

"If we go back to mid-80s when NSPs were starting to evolve, the people that were involved recognised that there was a need and got on and did it, rather than sitting around waiting for controlled trials," Professor Lenton said.

"They knew there were some concerns, but knew it was worth getting on with. This debate about naloxone hasn't been characterised by that pragmatic stance," he said.

Professor Lenton is one of two Deputy Directors at the National Drug Research Institute at Curtin University in Western Australia. He is also a clinical psychologist in private practice.

"The heroin shortage hit at the end of 2000, and all the momentum for moving forward on naloxone distribution to peers and others fell away. The focus has been on amphetamines, but latest figures still show that on average one Australian dies of a heroin overdose each day," he said.

Although fatal and non-fatal overdoses are currently no where near the peak years associated with the heroin glut, it is no excuse for inaction or complacency, said Professor Lenton.

"We shouldn't be waiting for the next heroin glut and spike in overdoses to generate the momentum to roll out this safe and effective intervention," he said.

The call for progress is echoed by many experts in the field, including Sydney-based clinician, Professor Nick Lintzeris, who told The Bulletin of signs that Australia's first pilot naloxone distribution amongst non-medical personnel is a possibility.

An early co-implementer of non-medical personnel naloxone programs in the United States city of Boston, Ms Maya Doe-Simkins, remains surprised that non-medical personnel access to the lifesaving medication remains off limits in Australia.

"It is ironic that the country that gave the world the first seat belt laws is falling behind in this vital accidental death prevention," Ms Doe-Simkins told the Bulletin.

Mr Tony Trimmingham established Family Drug Support after his son died of an overdose. He said his organisation supports making naloxone available to non-medical personnel, including family members of people who use opiates illicitly.

A proposal for a pilot peer distribution of naloxone program has been developed by the ACT drug user organisation, Canberra Alliance for Harm Minimisation and Advocacy (CAHMA).

According to CAHMA Manager, Ms Nicole Wiggins, the ACT program proposes a two year pilot that will train 200 peers in naloxone administration and overdose management and then distribute naloxone to the participants on completion of the training.

continued on page 6...

CHICAGO PIONEER EXPLAINS

What would you say to people in Australia who are considering non-medical personnel distribution of naloxone, or doctors who wonder if they should get involved through prescriptions?

"I have been a doctor for 25 years and being involved in this is the single most rewarding thing I have done in my career. Not many doctors can say I have saved more than 2000 lives. Not many health administrators can say I did something that saved 500 lives last year. To be able to do that is just unreal. It's a real lifesaver."

Full story backpage

AGEING COHORT OVERDOSE RISK

Page 5

OUTREACH WORKER A REVIVER

Page 6

Canberra Times October 2010

News

Push for heroin overdose drug

Canberra Times 1/12/06 p.3.

Overdose antidote scheme proposed

By Bianca Hall

ACT Health is investigating a trial program that would allow the families and friends of heroin and opiate users to resuscitate them in the event of an overdose.

During the height of Australia's heroin glut of 1998-2001, an estimated 1000 Australian lives were lost to overdose each year.

But drug and health workers say while heroin use rates are dropping in Australia, opiate use – including pharmaceutical opiate prescriptions – continues to be widespread.

Family Drug Support founder Tony Trimington said, "The deaths have still been running at the rate of about 400 a year and we have evidence that heroin is on the rise again."

Mr Trimington's son Damien died of a heroin overdose in a Sydney alley in 1997, aged 23.

"As a father who lost his son to an overdose I can say that to have a supply [of the anti-overdose drug Narcan] on the premises would save lives. I regard it as very important."

According to ACT Health figures, ambulance officers attended more than 120 heroin overdoses last year.

In Australia, only emergency personnel such as ambulance workers and paramedics are authorised to administer the anti-overdose drug nalaxone, commonly known by its brand name Narcan.

The proposal, which would be an Australian first, was put to ACT Health by the Alcohol Tobacco and Other Drug Association.

Association health worker Geoffrey Ward said, "It's a town with a lot of substance abuse issues across the board, really, but there was a spike in methamphetamine use that has settled down.

"We're now trending back to use of opiates."

If the association's proposal succeeds, an opiate user would be prescribed Narcan to be administered by a third party such as a housemate, partner or family member. That third party would be trained to administer the drug in the event of overdose.

Narcan works by blocking the brain receptors activated by opiates, instantly reversing an overdose. It is effective against heroin and prescription opiate overdoses.

In the United States, where a heroin or opiate user's peers can administer Narcan for them in 17 states, 1000 lives were saved in 2008, according to the *American Journal of Public Health*.

The association says it would be most beneficial for people recently released from prison, who are of high risk of overdose.

It says the initiative could be tried for 24 months for $200,000, including an external evaluation and the establishment of a peer-supported drug-user group to implement the program.

ACT Health spokeswoman Hasnah Scheding said the organisation was investigating whether there were legal barriers to introducing a pilot program and whether it had the support of local medical practitioners.

"Preliminary advice is that it is something that could potentially save lives and, if targeted well and supported by key groups locally, it may be a valuable addition to current drug overdose prevention interventions in the ACT," she said.

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