Opportunities for progressing a Pilot Peer Administer Naloxone Program in the ACT

Introduction

Heroin overdose is a major cause of preventable death among heroin users. Death from heroin overdose typically occurs some time after use and in many cases other people are present. These factors allow sufficient and considerable opportunity for intervention. Naloxone hydrochloride is an injectable opioid antagonist which has been used routinely for decades in emergency treatment of opioid overdose. Naloxone is a pure opiate antagonist that has no physical effect other than opiate blockade, and no adverse reactions save precipitation of opiate abstinence syndrome in opiate dependant individuals.

Peer Distribution of Naloxone

Distribution of naloxone for peer administration is an intervention with the potential to reduce the number of fatal heroin overdoses. Since the early 1990's, Australian experts have suggested that Naloxone hydrochloride should be provided to heroin users for administration by their peers in an overdose situation. Peer distribution programs have been successfully operating internationally for a number of years with few, if any adverse effects. By 2008 there were 52 peer-naloxone programs operating across 17 states in the US. Naloxone has been shown to be a remarkably safe intervention when administered by trained IDU peers with none of the major concerns [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] about the intervention having eventuated.

Purpose of peer distribution program

- Reduction in opioid overdose morbidity and mortality;

Achieved through:

- Increased effectiveness of interventions in opioid overdose management;
- Provision of comprehensive overdose management training;
- Provision of take-home Naloxone to ACT opioid users;
- Reduction in opioid overdose through overdose prevention education;

Additional benefits are reduction in costs to ACT health system through:

- Reduction in ambulance call outs;
• Reduction in hospitalisation as a result of opioid overdose.

• Current situation in the ACT

Heroin Overdose – Non fatal

The 2007 ACT IDRS report provides data on heroin overdose patterns amongst survey participants. The following information is taken directly from the 2007 ACT IDRS report.

• “In 2007, sixty percent of participants reported having overdosed on heroin at least once at some point in their lives. In 2006, similar figures were reported with 56% of the sample having overdosed on opioids at some time in their lives. .... in 2007, six percent of participants reported having overdosed on heroin in the year prior to the interview; this was the same in 2006. These figures are the lowest since data collection began in 2000....Two participants reported overdosing on heroin in the past month.”

• “The majority (82%) of participants in 2007 reported that they had been present at a heroin overdose at least once in their lifetime, though this was down from 97% the previous year. Of those that reported being present at another person’s overdose, 86% had been present at a heroin overdose in the previous 12 months, compared to 89% in 2006.”

• Seventy-five percent of participants who reported ever having overdosed on heroin reported having overdosed one to five times, 8% reported having overdosed between six and ten times and 10% reported eleven or more times. The median time to last heroin overdose was 72 months (range 2-360 months), the same as in 2006 (range 0-252 months)”.

Heroin Overdose - Fatal

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of accidental deaths due to opioids among those aged 15-54 years, ACT and Australia, 1988-2005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>ACT</th>
<th>Australia</th>
<th>% ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>2</td>
<td>351</td>
<td>0.6</td>
</tr>
<tr>
<td>1989</td>
<td>2</td>
<td>307</td>
<td>0.7</td>
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<tr>
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<td>0</td>
<td>321</td>
<td>0.0</td>
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<td>1991</td>
<td>2</td>
<td>250</td>
<td>0.8</td>
</tr>
<tr>
<td>1992</td>
<td>4</td>
<td>336</td>
<td>1.2</td>
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<tr>
<td>1993</td>
<td>5</td>
<td>374</td>
<td>1.3</td>
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<tr>
<td>1994</td>
<td>3</td>
<td>425</td>
<td>0.7</td>
</tr>
<tr>
<td>1995</td>
<td>13</td>
<td>582</td>
<td>2.2</td>
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<tr>
<td>1996</td>
<td>17</td>
<td>557</td>
<td>3.1</td>
</tr>
<tr>
<td>1997</td>
<td>9</td>
<td>713</td>
<td>1.3</td>
</tr>
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<td>1998</td>
<td>14</td>
<td>927</td>
<td>1.5</td>
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<td>1999</td>
<td>11</td>
<td>1,116</td>
<td>1.0</td>
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<tr>
<td>2000</td>
<td>10</td>
<td>938</td>
<td>1.1</td>
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<tr>
<td>2001</td>
<td>12</td>
<td>386</td>
<td>3.1</td>
</tr>
<tr>
<td>2002</td>
<td>8</td>
<td>364</td>
<td>2.2</td>
</tr>
</tbody>
</table>
Fatalities from overdose are largely preventable and while the numbers are relatively small in comparison to number of deaths from alcohol and tobacco, they account for a significant number of potential life years lost. “Given the average age of those who die from heroin related overdose is 30 years, the potential life years lost per premature death is greater than that associated with death resulting from tobacco or alcohol”.

Heroin Overdose – Morbidity

Non-fatal heroin overdose is common amongst heroin users with estimates that between 12,000 and 21,000 non-fatal overdoses occur in Australia every year. There are a broad range of complications arising from overdose where medical morbidity associated with non-fatal overdose may include pulmonary, cardiac, muscular and neurological complications.

Ambulance Call Outs

The table below provides figures for the number of Ambulance call-outs in the ACT for heroin overdose from July 04 to July 05. The cost of these call-outs was not available but efforts are being made to access this information and will be provided at a later date if and when made available. These cost would however be significant given the price charged for an emergency Ambulance call-out, without transport to hospital, being $522 and $750 with transport to hospital. Currently ACT patients who possess Health Care Cards are not charged for Ambulance services with the entire cost burden being on the health system. Although there is no data available to distinguish between fee paying and concession patients, anecdotal evidence would suggest that a significant proportion of heroin overdose patient requiring Ambulance services would possess a Health Care Card and therefore be eligible for free service.

<table>
<thead>
<tr>
<th>Month</th>
<th>Heroin</th>
<th>Heroin %</th>
<th>Other drugs</th>
<th>Total ODs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul-04</td>
<td>7</td>
<td>12</td>
<td>51</td>
<td>58</td>
</tr>
<tr>
<td>Aug-04</td>
<td>13</td>
<td>22</td>
<td>47</td>
<td>60</td>
</tr>
<tr>
<td>Sep-04</td>
<td>13</td>
<td>18</td>
<td>58</td>
<td>71</td>
</tr>
<tr>
<td>Oct-04</td>
<td>5</td>
<td>10</td>
<td>45</td>
<td>50</td>
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<tr>
<td>Nov-04</td>
<td>4</td>
<td>8</td>
<td>45</td>
<td>49</td>
</tr>
<tr>
<td>Dec-04</td>
<td>4</td>
<td>6</td>
<td>58</td>
<td>62</td>
</tr>
<tr>
<td>Jan-05</td>
<td>3</td>
<td>4</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>Feb-05</td>
<td>9</td>
<td>22</td>
<td>32</td>
<td>41</td>
</tr>
<tr>
<td>Mar-05</td>
<td>12</td>
<td>20</td>
<td>48</td>
<td>60</td>
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<tr>
<td>Apr-05</td>
<td>13</td>
<td>20</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>May-05</td>
<td>14</td>
<td>21</td>
<td>54</td>
<td>68</td>
</tr>
</tbody>
</table>
Heroin Use Patterns

The 2007 IDRS reports on heroin use patterns amongst survey participants. The following information is taken from that report.

Whilst the prevalence of heroin remained stable in the ACT in 2007, there was an increase in the frequency of use, from approximately once a week to approximately twice a week. There was also a decrease in the proportion of participants reporting current purity of heroin to be low. This indicates that there has been an increase in heroin purity a position supported by KE^{10}.

Priority Populations

Prisoners

Recently released prisoners are at a heighten risk of overdose death with evidence showing that the first two weeks after release are a particular danger period. Drug related mortality in men was 9.30 times higher, and in women was 6.42 time higher, in the first two week after release than after 6 months.^{11}

Two populations are significantly over represented in custodial settings, namely people who inject drugs and Aboriginal and Torres Strait Islander people (24% of Australia’s prison population are Aboriginal and Torres Strait Islander people).^{12} The profile of prisoners with high rates of injecting drug use, number of prisoners on methadone along with the increased risk of overdose death for recently released prisoner’s justifies targeting this program for this particular group.

Profile of ACT AMC Prisoners

ACT Corrections Health have provided data on the profile of ACT Prisoners that shows 58 prisoners on opioid maintenance treatment. This data was obtained through a snapshot taken on one reporting day between June and November 2009.

The data below was provided as part of the 18 month evaluation being undertaken of drug policies and their subsequent effects, within the Alexander Maconochie Centre.

The profile of ACT prisoners at 14 February was:
181 Male detainees (100 sentenced, 81 non-sentenced);
14 female detainees (6 sentenced, 8 non-sentenced);

The average length of stay at 14 February was:
10 months for sentenced prisoners; and
43 days for remandees
The ACT government has committed to a full and comprehensive evaluation of the drug policies and services, and their subsequent effects on prisoners and staff, within the Alexander Maconochie Centre (AMC) to be completed by 31 December 2010, 18 months after the last ACT prisoners were repatriated from New South Wales in June 2009. A peer distribution of naloxone program that targets prisoners as a priority population could assist with naloxone program data collected being used to provide additional information for the AMC evaluation.

Additionally, The ACT Alcohol, Tobacco and Other Drug Strategy 2010 – 2014 includes the priority action no. 30 which states “Ensure prisoners and other detainees, both adult and young people, are able to access the same community based alcohol and other drug programs and other services where appropriate in detention and when they leave detention”\(^\text{13}\).  

**Aboriginal and Torres Strait Islanders**

**Indigenous Injectors**

Anecdotal evidence suggests that rates of injecting amongst the Indigenous population are rising. Further evidence to support this assertion is the rising rates of HIV infection among Indigenous Australians as a result of injecting drug use. The rates of HIV infections due to injecting vary considerably between the Indigenous and non-indigenous population. Between 2004 and 2008, 3% of HIV transmission amongst non-indigenous were attributed to injecting. In this same time period 22% of HIV transmissions amongst Aboriginal and Torres Strait Islander peoples were attributed to injecting\(^\text{14}\).

Barriers to accessing services pose a significant health risk in terms of lack of information around overdose prevention and management. There are a number of factors that act as barriers that include:
- Lack of culturally appropriate prevention education;
- Discrimination and stigma associated with injecting drug use, within and outside of indigenous communities;
- Concerns about confidentiality in service provision.

**Indigenous Prisoners**

Incarceration rates for Aboriginal and Torres Strait Islanders are much higher than the non-indigenous population. In 2007, 2.5% of the population identified as Aboriginal and or Torres Strait Islander where 24% of the total prison population were Aboriginal and Torres Strait islander on the 30\(^{th}\) June 2008\(^\text{15}\).  

Given the rates of injecting and rates of incarceration of Indigenous peoples, the program would target this high priority group and ensure training is tailored to be culturally appropriate and sensitive. A peer distribution of naloxone program would need to address barriers and cultural issues such as shame,
stigma and secrecy. Targeting Indigenous opioid users in a culturally appropriate way could be achieved through engaging peers in training component of the program. Additional support would be sought from Winnunga Aboriginal Health Service and Gugan Gulwan Aboriginal Youth Service to recruit Indigenous drug users for the program. Providing training to Indigenous prisoners post release would be one approach that could be used to ensure this population is well engaged in this program.

**Suggested Program Design**

**Program Outline**

A peer distribution of naloxone program would comprise two training components; Firstly a Train the Trainer program; Secondly these trainers would provide comprehensive training for opioid users in overdose reduction, management and naloxone administration. On completion of this training, participants would be provided with take home naloxone along with a range of educational resources. An evaluation would be undertaken with a possible model being collection of quantitative and qualitative information pre and post training, with 3, 6 and 12 monthly follow up of participants and where replacement doses of naloxone are provided (see evaluation section).

This training would be conducted by AOD staff whom have undergone specific training program for this purpose. On completion of training peers would be given take-home naloxone along with training information, training DVD and pocket sized information cards describing overdose management strategies and directions on naloxone administration.

**Training**

The training would comprise of two components, the first component being “Train the Trainer” model, where staff and volunteers undergo an intensive training module to enable them sufficient skills and knowledge to conduct the second component of training opioid users.

**Train the Trainer**

A comprehensive overdose prevention and management training program would be undertaken by staff and volunteers from CAHMA to ensure them sufficient skills and knowledge to conduct the second component, being training of opioid users. It is suggested that CAHMA conduct the training as the preferred model for the training provided to opioid users being a peer-based model. Support and assistance would be provided by agencies such as Red Cross or St John’s to provide professional input into training module and delivery of training. CAHMA staff and volunteers that currently hold senior first aid certificates would undergo the training and seek additional accredited training if required. The justification for a peer based training model is supported by The National Heroin Overdose Strategy that...
states “It is important to engage drug users in the development of strategies as this may enhance uptake and effectiveness, and accordingly drug users, and drug user organisations have an important role to play in this Strategy”. Although a peer model is preferred by CAHMA, a program that involves trainers from other AOD agencies would be supported if the peer model is not deemed appropriate or possible at this stage.

Both components of the training would be modeled on currently operating, successful international programs including utilising and adapting, where necessary, training materials from these programs. In particular the curriculum from the Chicago Recovery Alliance (CRA) would be utilized, which include a range of written materials, training videos and pocket sized instruction card of instructions for overdose recognition and treatment. CRA have provided their express permission for CAHMA to utilize all training materials from that agency along with offering full and on-going support where required for an ACT program.

**Training Peers**

A comprehensive overdose prevention and management training program would be provided by staff and volunteers who have completed phase one training. Specific components of the training program (based on and adapted from the CRA training program) would include:

- Risk factors and prevention techniques for opiate overdose;
- Signs and symptoms for the early recognition of opiate overdose;
- Prevention of choking and aspiration in the unconscious patient;
- Techniques for rescue breathing;
- Routes of administration and dosing guidelines for Naloxone;
- BBV risks and Universal Precautions;
- Protocols for follow up care;
- Protocols for replacement doses;
- Information and instructions on participating in evaluation component of program.

**Training Peers (con’t)**

Pre and post training questionnaires would be undertaken to measure increases in level of knowledge and to ensure that prior to naloxone being provided, post training knowledge is at an acceptable level for safe participation in naloxone program. Any participants not reaching the required level of
knowledge (decided using same measurement tools as CRA) would undergo further training to gain the necessary skills and knowledge before being provided with take home naloxone. The questionnaires would be based on those currently used by CRA.

**Suggested Program Design cont**

**Naloxone distribution**

On successful completion of the training program, peers would be provided with take-home Naloxone along with a range of written materials, instructional DVD and pocked sized instructions cards that outline directions for administration and storage of Naloxone

Recruitment of heroin users would be achieved through word of mouth peer networks, advertisement and promotion through the ACT AOD sector in particular through NSP and Pharmacotherapy programs.

**Evaluation**

Evaluation should include some if not all of the following: collecting quantitative and qualitative information pre and post training. Follow up at time intervals of 3, 6 and 12 months and where replacement doses of naloxone are provided. The specific details of evaluation component of this program would be developed with the assistance of experts in this area with a preference being engaging with an educational research institute.

**Program Considerations**

**Program or Trial**

Australian experts have been calling for a trial of peer distributed naloxone since the early 1990’s. In recent years however, with the growing body of evidence on this topic, a trial is now seen as unnecessary. A letter published in the Medical Journal of Australia states “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 the cases of opioid overdose”\(^{17}\).

**Method of Administration**

Naloxone is typically delivered through injection, either intravenous or intramuscular but recently trials and programs of intranasal naloxone have been undertaken. Researchers supporting a trial of peer naloxone have suggested that the preferred method of administration would be intramuscularly. However some, if not all of these recommendations were made prior to the development of intranasal naloxone and prior to trials into nasal naloxone’s efficacy.

**Intramuscular/Intravenous**
The intramuscular (IM) route of administration, in preference to intravenous (IV), has been adopted as the preferred route for ambulance services in most Australian states\(^\text{18}\). Intramuscular administration effects are more gradual than intravenous and are therefore thought to results in less violence and aggression.

The most obvious risk with naloxone administration through injection is that of blood borne virus transmission. Training for peers involved in this program needs to include information on reducing risks of BBV transmission.

The intramuscular option may be preferable to intranasal administration due to price considerations.

**Intranasal**

Intranasal naloxone is currently being used in international peer distribution programs and recent trials have been undertaken in Australia. The effectiveness of intranasal naloxone was compared with intramuscular in a 2009 Victorian randomized control trial with the conclusion stating “Concentrated intranasal naloxone reversed heroin overdose successfully in 82% of patients. Time to adequate response was the same for both routes, suggesting that the i.n. route of administration is of similar effectiveness to the i.m. route as a first-line treatment for heroin overdose”\(^\text{19}\).

The above indicates that intranasal is a safe, effective option along with being preferable option from a BBV risk perspective. There are however questions around price and availability as the 2009 Victorian trial had intranasal naloxone manufactured specifically for the study. Anecdotal reports suggested that accessing this form of naloxone was difficult but this claim was disputed by one of the authors of the Victorian study in recent email correspondence where he said that “IN isn’t difficult to source but would require special sourcing from ORION Pharmaceuticals”. The fact that intranasal naloxone is available internationally and was made available in Victoria suggests that this route of administration requires further consideration and investigation.

The question around price of intranasal naloxone unfortunately could not be answered at this stage.

**Suggested Dose**

Current ACT Ambulance practice is to administer up to five 0.4mg injections, incrementally. The first of these is an intramuscular injection and if required followed by subsequent 0.4mg injections, intravenously. These IV injections proceed until the patient recovers, up to a total of 2mg (5 injections in all). Chicago Recovery Alliance (CRA) peer naloxone program has the same dose level protocols as the ACT Ambulance service, where the first dose is 0.4 mg IM, then where required further 0.4 IM up to 2mg maximum. Many peer naloxone programs involve only IM rather than IV injections, as this removes the necessity of having to find a vein. CRA follow these procedures as their experience has shown that administration of this amount of naloxone is beneficial in that patients tend to recover more gently and
are much less likely to react in a confused or violent manner. Administration of a single 2.0mg dose, as is practiced in some jurisdictions, can result in patients awakening suddenly, suffering from withdrawal symptoms such as shaking, sweating, nausea and vomiting, and severe irritability. The program would gain greater acceptance by peers where naloxone administration didn’t result in rapid and severe onset of withdrawal.

**Safety Concerns**

Information obtained through a variety of medical websites and published articles in medical journals all describe naloxone as being very safe for non-opioid dependant individuals. Clinical Pharmacology describes Naloxone as being an essentially pure opioid antagonist, and when administered in the absence of opioids it exhibits no pharmacologic effect.

“Suboxone: A Guide to Treatment” produced by Reckitt Benckiser, the manufacturer of Suboxone in Australia, states “if you dissolve Suboxone under your tongue as directed, the body will not absorb the naloxone and it will not have any effect”

There is no evidence found that indicated a threat to children from accidental ingestion of naloxone. It only works as an antagonist to opioids and only if injected. Consequently, there are no indications that having peer- supplied naloxone represents any threat to the safety of children if accidentally ingested.

**Storage and Shelf Life**

Naloxone has a shelf life of 18 months to 2 or even 3 years. Naloxone does not need to be stored in the fridge but is recommended to be kept in temperatures less than 30 degrees to prolong shelf life. More specific information along with references can be obtained at a later date to add as an appendix to this section.

**Legal Issues**

**Scheduling Considerations**

**Schedule 4- S4**

Naloxone is a Schedule 4 drug and therefore needs to provided through prescription. Program participants could be provided with a prescription of naloxone that is to be administered to them by a third party. “Any Schedule 4 drug can be prescribed for use with the primary restriction being that the drug will be used on the patient for who the drug is prescribed in accordance with the doctor’s instructions.” There are no specific requirements that a schedule 4 drug cannot be administered by a third party and this is in fact common occurrence where family, friends and carer’s administered prescribed drugs to patients they care for in the home. Additionally, precedents for prescription medications intended for third party administration currently exist with epinephrine for anaphylaxis and glucagon for hypoglycemia.
Schedule 3-S3

If naloxone was re-scheduled to an S3 this would remove the necessity for a prescription and allow behind the counter availability where a pharmacist provides information and advice before providing the drug. Re-scheduling naloxone from a Schedule 4 to a schedule 3 could be achieved through ACT Health or a professional association making an application to the National Coordinating Committee on Therapeutic Goods (NCCTG) which has replaced the National Drug and Poisons Schedule Committee from 1st July 2010.

Good Samaritan Legislation

The ACT currently has legislation, ‘The ACT Civil Law (Wrongs) Act 2002’, that provides liability protection to people who ‘come to the aid of another who is in apparent need of emergency medical assistance’. This liability assistance is specifically removed for people acting as good Samaritans when ‘impaired by a recreational drug’. Given this exclusion drug using peers may not be covered by the ACT legislation. This may therefore require changes through the Act legislative Assembly to the ACT Civil Law Act. Legislation that specifically protect a person administering naloxone have been enacted internationally with an example being New Mexico which releases non-medical personnel who administered naloxone in good faith from liability.

Legal Issues Summary

A program of peer distributed Naloxone could proceed with support from the ACT legislative Assembly, and in particular the Minister for Health. Support from members of the legislative assembly would be required in order to make legislative changes or amendments. Suggested solutions could include one or more of the following:

- Changes to the ACT Civil Law Act 2002 in removing the specific mention of ‘impairment by a recreational drug’ to ensure heroin using peers are protected from liability under this Act;
- Adopting new legislation that specifically covers naloxone administration;
- Amending current legislation to cover third parties who act in good faith administrating a life saving drug.

Additionally the ACT could provide a submission the National Coordinating Committee on Therapeutic Goods (NCCTG) to change current scheduling of naloxone from an S4 to an S3.

Cost of Naloxone

Naloxone is an inexpensive drug at $60.00 per packet containing 5 individual vials with each vial being 0.4mg/ml with the total dose of each package being 2mg/ml. The cost therefore of an individual vials is
$12.00 where these vials of 0.4mg/ml match the recommended dose increments followed by ACT Ambulance Service and the Chicago Recovery Alliance. The total dose of the package being 2mg/ml is the recommended maximum dose followed by ACT Ambulance Service and the Chicago Recovery Alliance. Naloxone is covered by the Pharmaceutical Benefits Scheme (PBS) which would allow consideration for a future program to be conducted on a cost recovery basis, where Health Care Card holders could purchase the drug at the reduced PBS price which is currently approximately $5.00 per prescription. Consultations with heroin users in the ACT and in other Australian jurisdictions have shown that most heroin users would be willing to pay for the drug.

**Length of Program**

It is suggested that a pilot program involving 200 participants be run over a 2 year period.

**Conclusion**

An ACT peer naloxone program could be implemented with minimal cost and relatively minor changes to current ACT legislation. An Australian peer naloxone program has been under consideration for some time with recommendations from experts and key bodies that this commence as a matter of urgency and without delay. Support for a peer program would be sought from key bodies such as the Australian Medical Association (AMA), the Public Health Association (PHA) and the Australasian Professional Society of Alcohol and other Drugs (APSAD). Support from local agencies would also be sought that include gaining support from key Indigenous organisations and those that provide services and support to prisoners.

Heroin overdose deaths are preventable with overseas peer naloxone programs showing conclusive evidence that this intervention is safe and saves lives.

**References**


3 ibid


7 ibid

8 Warner-Smith et al. 2000 ‘Heroin Overdose: prevalence, correlates, consequences and interventions Monograph No 46’ National Drug and Alcohol research Centre, University of NSW 200


11 Karimnia A, et al. 2007. Suicide risk among recently released prisoners in New south Wales, Australia. NCHECR, University NSW, Sydney


14 ibid

15 ibid


