Reducing injection-related harm in recently released prisoners

A/Prof Stuart Kinner
Centre for Health Policy, Programs and Economics
Melbourne School of Population Health, The University of Melbourne

OUTLINE

• IDU before and in prison (recap)
• IDU after release from prison
  – Epidemiology
  – Harms
• Responses
• Next steps
**IDU and crime**

![Graph showing AOR (95%CI) for various factors related to IDU and crime.]

**Sources:**


---

**Drug use & incarceration**

![Bar chart showing the percentage of recent incarceration and no recent incarceration for various drug use behaviors.]

---

![Legend for the bar chart showing recent incarceration and no recent incarceration.]
Prison receptions

- Lifetime IDU
- Past month IDU
- Past month sharing

<table>
<thead>
<tr>
<th>VIC</th>
<th>WA</th>
<th>TAS</th>
<th>SA</th>
<th>QLD</th>
<th>NSW</th>
<th>ACT</th>
<th>NT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Prison = public health opportunity

I gotta tell ya. Getting older is much more Lee-fen-ning turn it over to be.

**Independent correlates of in-prison IDU**

<table>
<thead>
<tr>
<th>Factor</th>
<th>AOR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever share needle</td>
<td>18.0 (10.4-29.5)</td>
</tr>
<tr>
<td>Tattoo</td>
<td>13.2 (8.0-22.9)</td>
</tr>
<tr>
<td>Current sentence</td>
<td>10.4 (6.0-18.0)</td>
</tr>
<tr>
<td>Male</td>
<td>6.1 (3.2-11.8)</td>
</tr>
<tr>
<td>Used 3+ drugs</td>
<td>5.0 (3.0-8.5)</td>
</tr>
<tr>
<td>HCV</td>
<td>4.0 (2.7-5.9)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3.9 (2.7-5.7)</td>
</tr>
<tr>
<td>Unsafe sex</td>
<td>3.0 (2.0-4.4)</td>
</tr>
<tr>
<td>Aged (per year older)</td>
<td>2.6 (1.6-4.3)</td>
</tr>
</tbody>
</table>

Nagelkerke R²=0.44, p<0.001
## HCV transmission in prison

<table>
<thead>
<tr>
<th></th>
<th>NSW1</th>
<th>NSW2</th>
<th>SA3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample (HCV-)</td>
<td>120 lifetime IDU</td>
<td>488 lifetime IDU</td>
<td>148 prisoners (majority IDU Hx)</td>
</tr>
<tr>
<td>Incident HCV cases</td>
<td>16</td>
<td>94</td>
<td>3</td>
</tr>
<tr>
<td>Rate per 100 py (95%CI)</td>
<td>34.2 (19.6-55.6)</td>
<td>31.6 (25.6-38.7)</td>
<td>4.7 (3.4-6.1)</td>
</tr>
</tbody>
</table>

**Ceiling effect?**


### IDU after release from prison

- 160 (ex-)prisoners in QLD
  - Baseline ≤4 weeks pre-release
  - Follow-up 1, 3, 6, 9 months post-release

![Graph showing IDU, Alcohol, Tobacco, and Cannabis usage over time](image)

How does incarceration impact IDU?

- increased syringe sharing \(^1\)
- non-adherence to ARV \(^2\)
- virologic failure \(^3\)
- nonfatal overdose \(^4\)

---

Nonfatal overdose


Adjusted odds of NFOD

Nonfatal overdose

Time since release

Life1me IDU

Life1me illicit drug use

Whole sample

Winter, Kinnet, Jenkinson & Degenhardt (in prep).

Fatal overdose

Weeks

Post-release mortality

Deaths in year after most recent release, by week

Source: Forsyth & Kinner (in preparation). MARC project data.
Causes of death in first year

<table>
<thead>
<tr>
<th>Time since release</th>
<th>0 to 30 days</th>
<th>31 to 365 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cause</td>
<td>133 100%</td>
<td>522 100%</td>
</tr>
<tr>
<td>AOD related</td>
<td>51 38%</td>
<td>157 30%</td>
</tr>
<tr>
<td>Suicide</td>
<td>23 17%</td>
<td>117 22%</td>
</tr>
<tr>
<td>Unnatural</td>
<td>82 62%</td>
<td>358 69%</td>
</tr>
</tbody>
</table>

Source: Forsyth & Kinner (in preparation). MARC project data.

Summarising the evidence

Risk of drug-related death 3-8 times higher in first 2 weeks post-release vs. subsequent 10 weeks.
SMR by cause of death and time

Follow up time after release (years)

Source: Kinner, Forsyth & Williams (under review). Record linkage studies of mortality in ex-prisoners: Why (good) methods matter.

Survival after release (to 100 days)

Survived

95% C.I.

Source: Forsyth & Kinner (in preparation). MARC study data.
Survival after release (to 15 years)

- CMR = 2.5
- CMR = 7.6

Source: Forsyth & Kinner (in preparation). MARC study data.

Mortality varies by age and sex

Source: van Dooren, Forsyth & Kinner (under review). Young people have heightened risk of death in the year following release from adult prison.
Mortality varies by Indigenous status


Causes of death change over time

Where do DRDs in ex-prisoners occur?

Table 4 Location of death according to cause of death

<table>
<thead>
<tr>
<th>Location of Death</th>
<th>Accidental drug related death (n=172) (%)</th>
<th>All other causes (n=210) (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential property</td>
<td>116 (67.4)</td>
<td>108 (51.4)</td>
<td>0.0315</td>
</tr>
<tr>
<td>Public place (includes car parks, railway stations and on streets)</td>
<td>27 (15.7)</td>
<td>77 (36.7)</td>
<td>0.043</td>
</tr>
<tr>
<td>Housing house, hostels, backpackers houses</td>
<td>16 (9.3)</td>
<td>7 (3.3)</td>
<td>0.615</td>
</tr>
<tr>
<td>Hospital/residential care facility</td>
<td>9 (5.3)</td>
<td>11 (5.2)</td>
<td>1.00</td>
</tr>
<tr>
<td>Caravan/mobile home/campground</td>
<td>4 (2.3)</td>
<td>5 (2.4)</td>
<td>0.992</td>
</tr>
<tr>
<td>Military institution/detention centres</td>
<td>0</td>
<td>2 (1.0)</td>
<td></td>
</tr>
</tbody>
</table>


What characteristics are associated with DRDs?

Table 2 Health, treatment and drug use characteristics according to cause of death

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Accidental drug related death (n=172) (%)</th>
<th>All other causes (n=210) (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General health condition</td>
<td>45 (26.5)</td>
<td>53 (24.1)</td>
<td>0.795</td>
</tr>
<tr>
<td>Mental health condition</td>
<td>51 (29.1)</td>
<td>111 (52.1)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Recorded risk of self-harm</td>
<td>9 (5.1)</td>
<td>58 (27.3)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Health service use (around time of death)</td>
<td>30 (17.5)</td>
<td>42 (19.7)</td>
<td>0.520</td>
</tr>
<tr>
<td>General health</td>
<td>16 (9.1)</td>
<td>25 (11.7)</td>
<td>0.601</td>
</tr>
<tr>
<td>Mental health</td>
<td>17 (9.7)</td>
<td>19 (8.8)</td>
<td>0.339</td>
</tr>
<tr>
<td>Alcohol and other drug</td>
<td>28 (16.8)</td>
<td>22 (10.3)</td>
<td>0.101</td>
</tr>
<tr>
<td>Welfare</td>
<td>23 (13.5)</td>
<td>2 (0.9)</td>
<td>0.530</td>
</tr>
<tr>
<td>Drug overdose (ever)</td>
<td>17 (9.7)</td>
<td>10 (4.7)</td>
<td>0.031</td>
</tr>
<tr>
<td>Injecting drug use (around time of death)</td>
<td>134 (78.0)</td>
<td>31 (14.4)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>History of heroin use</td>
<td>84 (48.8)</td>
<td>36 (17.3)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Opiate substitution treatment (around time of death)</td>
<td>11 (6.3)</td>
<td>10 (4.7)</td>
<td>0.491</td>
</tr>
<tr>
<td>Record of drug withdrawal/death in previous 6 months</td>
<td>27 (15.4)</td>
<td>8 (3.7)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

What substances are involved in DRDs?

Table 3: Drugs types involved in deaths involving multiple drugs

<table>
<thead>
<tr>
<th>Drug combinations identified</th>
<th>Proportion of deaths (n= 1260* (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioid(s) + one other drug type</td>
<td>51 (40.7)</td>
</tr>
<tr>
<td>Opioid(s) + benzodiazepines</td>
<td>19 (15.1)</td>
</tr>
<tr>
<td>Opioid(s) + alcohol</td>
<td>19 (8.7)</td>
</tr>
<tr>
<td>Opioid(s) + methamphetamine</td>
<td>6 (5.4)</td>
</tr>
<tr>
<td>Opioid(s) + cocaine</td>
<td>5 (4.0)</td>
</tr>
<tr>
<td>Opioid(s) + cannabis</td>
<td>4 (3.2)</td>
</tr>
<tr>
<td>Opioid(s) + antidepressants</td>
<td>3 (2.4)</td>
</tr>
<tr>
<td>Opioid(s) + antipsychotics</td>
<td>3 (2.4)</td>
</tr>
<tr>
<td>Two other drug types (excluding opioid(s))</td>
<td>1 (0.8)</td>
</tr>
</tbody>
</table>

3 or more drug types

| Opioid(s) + two or more other drug types | 12 (9.5) |

*Data missing for 17 accidental drug-related deaths


Reducing drug-related harm

- Diversion
- OST: post-release, retention
- Prevention incl. education
- 1st aid training incl. naloxone
- Transitional care
  - post-release
  - personalised
  - health-focussed
  - case management
Current state of play

• IDU normative in prison receptions
• IDU in prison common and high risk
• IDU in ex-prisoners is common and:
  – Predictable
  – Harmful: overdose, infection, adherence
  – A risk to public health
  – A risk to public amenity
• Preventable?

Knowledge gaps

• Epidemiology of IDU in ex-prisoners
  – Who, when, where, how?
  – Outcomes?

• Effective (evidence-based) responses
  – Prevention
  – Harm reduction
Next steps: Research

- Prospective studies
- Large, representative samples
- Mixed methods: self-report, bloods, record linkage, qualitative
- Focus on health services
- Rigorous evaluation (vs. ‘description’)
- Partnership with Corrective Services}

HIP-Aus study: Improving the health of Indigenous and non-Indigenous ex-prisoners in Australia
Prison And Transition Health (PATH) Cohort Study

PATHways to Successful Transition
Stoove, Kinner, Butler, Ogloff, Aitken, Dietze (NHMRC 2012-2015)

- N=600 prisoners with IDU Hx
- Baseline ≤6 weeks pre-release
- Follow-up 3, 12, 24 months post-release
- In-depth interviews, blood specimens (HCV & HBV antibody/PCR)
- Linkage to health and law enforcement records
- AIMS
  - Identify typical trajectories of people with a history of IDU following release from prison
  - Determine the incidence/timing between health service utilisation/other exposures and drug use, health and criminogenic outcomes
  - Identify intervention opportunities to reduce drug-related and other physical and mental health morbidities, and reduce recidivism