




Blood borne viruses in prison

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It is said that no-one truly knows a nation until one has been inside its jails. A nation should not be judged by how it treats its highest citizens, but its lowest ones

Nelson Mandela



Outline

- Epidemiology

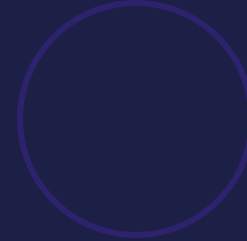
- Opportunities

 - Prevention

 - Treatment

- Challenges

Epidemiology



Rates of incarceration

- Australia 152 per 100,000
- New Zealand 202 per 100,000
- USA 689 per 100,000

● <http://www.prisonstudies.org/world-prison-brief>

NSW prisons



- 10578 in full-time custody
- 2501 indigenous - overrepresented
- 93.2% male
- 75.8% prior imprisonment - recidivism
- 26% unsentenced
- 28.2% sentence <2 years
 - 2014 NSW Inmate Census

NSW prisons

- Many more come through the system
 - 27% incarcerated < 8 days
 - 17% 8-30 days
 - 56% >30 days
 - only 10% >6 months
- More than 146,000 movements
 - Corrections Health Service Corporate Plan 2003-2008

Prisoners are community members

- Release associated with drug use risk
- Overdose
- Unsafe injecting practice
- BBV acquisition
 - Dolan K Lancet 2016;338:1089-1102

Imprisonment and drug use

- In Australia up to 58% of prisoners report lifetime IDU
 - Reekie JM Med J Aust. 2014;200:277-80.

BBV Prevalence in prisons

- Australian prison entrants
- n=1742
- 2004, 2007, 2010 – 2 week periods
- HIV: 0.4%
- HBV: HBcAb 21.7% HBsAg 2.3%
- HCV: 33.3 - 23.3% (57% in IDU)

• Reekie JM Med J Aust. 2014;200:277-80.

HCV incidence in prison

- NSW
- 210 IDUs in prisons followed for 4 years
- HCV incidence 14/100 person years
- Bleach and Opioid Agonist Treatment
 - no effect seen on incidence but not powered
 - Luciani F. *Addiction*. 2014;109:1695-706.

HBV immunity in prisons

- Australian males 18-58yo 46.4%
- Lower rates of vaccine induced immunity than general population
- More past infection in 18-29 yo
 - Gidding HF. Epidemiol Infect. 2015;143:2813-21.
- 2010, NSW, n=204
- 52% HBV susceptible
 - Larney S. Med J Aust. 2013 Apr 15;198(7):376-9.

Risks for BBVs in prisoners

- Queensland
- 1322 interviews
- Lifetime IDU 55%
- Lifetime in prison IDU 23%
- Associated with:
 - needle/syringe sharing (ARR 5.0)
 - HCV exposure (ARR 1.47)
 - tattoo in current prison sentence (ARR 2.19)
 - Kinner SA,. Drug Alcohol Depend. 2012;126:156-60.

IDU in the community

- 382 Victorian community IDU
- HCV risks include incarceration (RR 1.34)
 - Miller ER, J Infect. 2009 May;58(5):375-82.

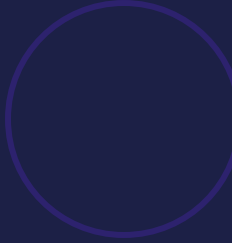
Co-morbidities in prisoners

- 48.6% assessed or treated by a doctor for a mental or emotional problem
 - Indig D NSW Inmate Health Survey 2009

The interrelated, negative correlation (i.e. syndemic) of incarceration, substance abuse disorders, mental illness, and infectious diseases...complicate the optimal delivery of medical care in prison settings...

- Rich J Lancet 2016, 338:1103-1114

Opportunities - prevention



Needle and syringe programs

- Evidence of effect in preventing HIV transmission
- Less certain for HCV transmission
- In prisons in 8 countries
- No reported seroconversions
- No reported use as weapons
- Reduced needle and syringe sharing
 - Kamarulzaman Lancet 2016; 388:1115-26

NSP in Australia

- Available to PWID in the community
- Not available to PWID in prison
- Endorsed by WHO, AMA, RACP, etc
- Concerns raised about security
- Call for a trial in ACT

- Stoove M, Med J Aust 2015; 203:319-320

Opioid agonist therapies

- Reduces drug injection and HIV transmission
- Less certain effect on HCV transmission
- In prison – reduces heroin use, syringe sharing and in-prison IDU
- Continuation after release reduces drug-related mortality risk 8 times
 - Kamarulzaman Lancet 2016; 388:1115-26



Education

- Peer based education can reduce risk behaviours

BBV testing

- Opt out HIV testing better uptake than opt-in
- Concerns re stigma and discrimination
- Prison diagnosis as an entry point to care
- Diagnosis alters risk behaviours
 - Kamarulzaman Lancet 2016; 388:1115-26
- Test and treat elimination strategies dependent on diagnosis

Condoms



- Effective
- Have been safely implemented despite concerns about use as weapons and for concealment of contraband

HBV immunisation

- Accelerated immunisation schedules

- 3 weeks or 2 months, meta-analysis

- Short term good anti-HBs titres

- Less good at 6 months

- Need long term data

- Jin PLoS One. 2015 Jul 21;10(7):e0133464.

- 2 month vs. 6 month in 707 IDU

- Less infections in IDUs

- Similar anti-HBs titre loss

- Shah DP Am J Pub Health. 2015 Jun;105(6):e36-43.



Opportunities - treatment

(and treatment as prevention)

HCV treatment in prisons

- Nurse led model of care
- NSW, n=391
- 108 started treatment
- PEG-IFN and RBV mainly
- SVR in those with follow-up 69%
- SAE 12%, discontinuation 7%
- Safe and effective

- Lloyd AR. Clin Infect Dis. 2013 Apr;56(8):1078-84.

HCV treatment in prisons

- NSW HCV treatment program
- Mainly PEG-IFN and RBV
- n=788, Indigenous 136, CALD 129
- Indigenous and CALD access and outcomes similar to white patients
 - Post JJ. Med J Aust. 2013 Oct 7;199(7):464.

HIV treatment in prisons

- HIV PrEP not studied in prisons
- HIV PEP administered after needle and syringe sharing
 - O'Sullivan BG. Med J Aust. 2003;178:546-9.
- HIV cART

HCV – treatment as prevention

- Studies ongoing
- Unlike HIV where chronic suppression is needed HCV treatment is curative with no ongoing infective risk so R_0 would become zero with treatment
- Scale up/population coverage needed?

Challenges

- *The most effective way of controlling infection in prisoners and the broader community is to reduce mass incarceration of people who inject drugs*
 - Dolan K Lancet 2016;338:1089-1102
- Discrimination
- Punishment above the sentence
- Fear of prevention measures as weapons

Conclusions



- Prevention, diagnosis and treatment of BBVs is feasible in prison populations
- Opportunity to provide care to people who don't access the health system easily