Prevalence of hepatitis C among Aboriginal Australians

Australasian Viral Hepatitis Conference

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Simon Graham

- Simon was the first Aboriginal person to be awarded a PhD via the Kirby Institute
- Simon is currently in New York City on Fulbright Post-Doctoral Fellowship

The greater level of substance misuse among Aboriginal and Torres Strait Islander people reflects the history of dispossession and oppression of Indigenous people

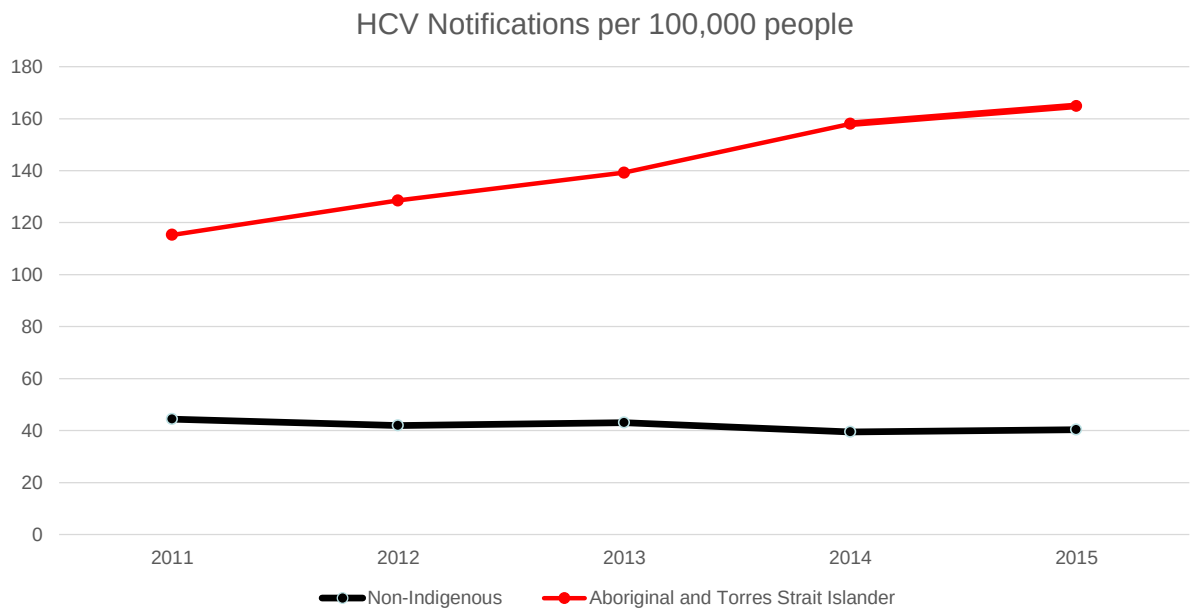
J Ward, APSAD 2015

Background

- There are ~713,000 Aboriginal people in Australia[1]
  - ~3% of the Australian population
- Aboriginal people experience significant disadvantage:[2,3]
  - More likely to use drugs (17% of IDRS sample)
  - More likely to inject drugs (up to 14% of ANSPS)
  - More likely to be on OST (10% of clients)
  - More likely to share injecting equipment (21% vs 16%, $p<0.01$)
  - More likely to inject on a daily basis (61% vs 53%, $p<0.01$)
  - Far more likely to be prison (15 x depending on jurisdiction)
  - 10 times more likely to have a sexually transmissible infection
  - 2 times more likely to be unemployed, 3 times more likely to be a daily smoker, 6 times as likely to be teenage mothers

1. Australian Bureau of Statistics (ABS). Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021.
2. Australian Institute of Health and Welfare (AIHW). Young Australians: their health and wellbeing 2011. Canberra: AIHW; 2011.
3. Ward J, et al. Higher HCV antibody prevalence among Indigenous clients of needle and syringe programs. Aust NZ J PH. 2011; 35(5).

Background – increasing epidemic in Aboriginal and Torres Strait Islander Peoples



In 2015, HCV notification rates in Aboriginal people were 4 times higher than for non-Aboriginal people[4]

Background – Study Rationale

- However, there are limitations in the national surveillance system in reporting on hepatitis C prevalence:[4]
  - The States with the largest Aboriginal population, NSW & QLD do not report Aboriginal status
  - Only 4 of the 8 states are included in reporting HCV notifications by Aboriginal status

4. Kirby Institute. Bloodborne Viral and STI in Aboriginal and Torres Strait Islander people. 2015. Kirby Institute, UNSW Australia.

Aims

1. To estimate the pooled prevalence of hepatitis C

2. If possible, to estimate the pooled prevalence by:
   - Gender
   - Age
   - Population group
   - Risk behaviour

Methods

1. We followed the PRISMA statement guidelines[5]
2. Literature search:
   - Pubmed, Web of Science, Medline,
   - New South Wales Public Health Bulletin
   - Northern Territory Public Health Bulletin
   - Abstracts from the 2010-2014 Viral Hepatitis Conferences
3. MeSH search terms:
   - Hepatitis C, HCV, anti-HCV, anti-hepatitis C, hepatitis
   - Aboriginal OR Indigenous
   - Australia

5 . Moher D, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ.* 2009;**339**:b2535..

Methods

1. Inclusion criteria:
   - Number of people testing positive / number of people tested

2. Reporting prevalence for Aboriginal people (excluded non-Aboriginal people)

3. A meta-analysis was conducted if there were more than three prevalence estimates per sub-group

4. Strategy used to assess between study heterogeneity:[6]
   - I^2<25%, fixed effects meta-analysis to estimate the prevalence
   - I^2>25%, random effects meta-analysis to estimate prevalence

6 Higgins JP, Thompson SG, Deeks JJ, Altman DG. Measuring inconsistency in meta-analyses. *BMJ.* 2003;**327**(7414):557–60..

Flow diagram

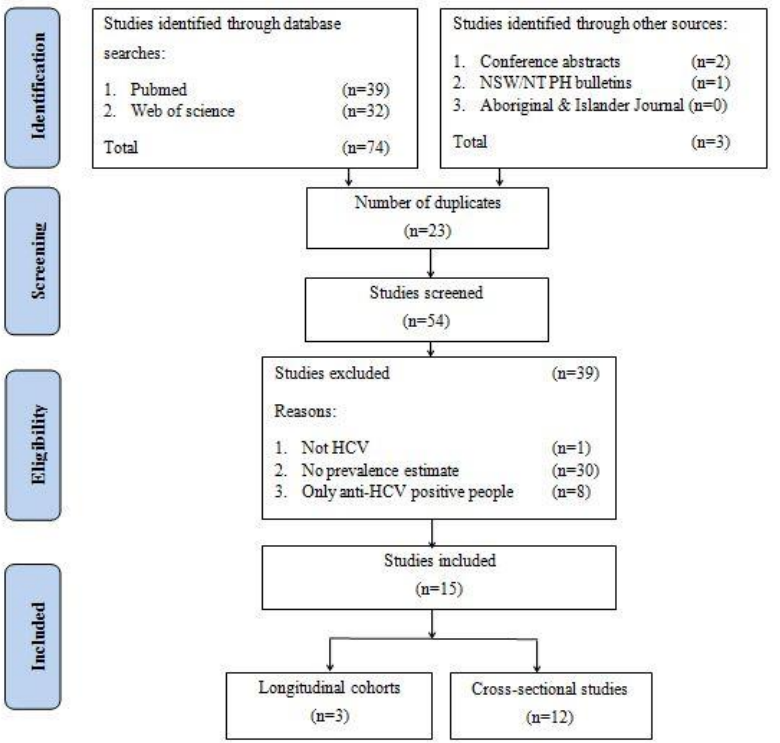


Figure 1. Flow chart of included studies

NSW: New South Wales; NT: Northern Territory. Conference abstracts: Australasian Viral Hepatitis Conference Handbooks. NSW/NT PH bulletins: New South Wales/Northern Territory Public Health Bulletins; Aboriginal & Islander Journal: Aboriginal and Islander Health Journal.

Results

- Study design
  - 3 were longitudinal studies
  - 12 were cross-sectional studies

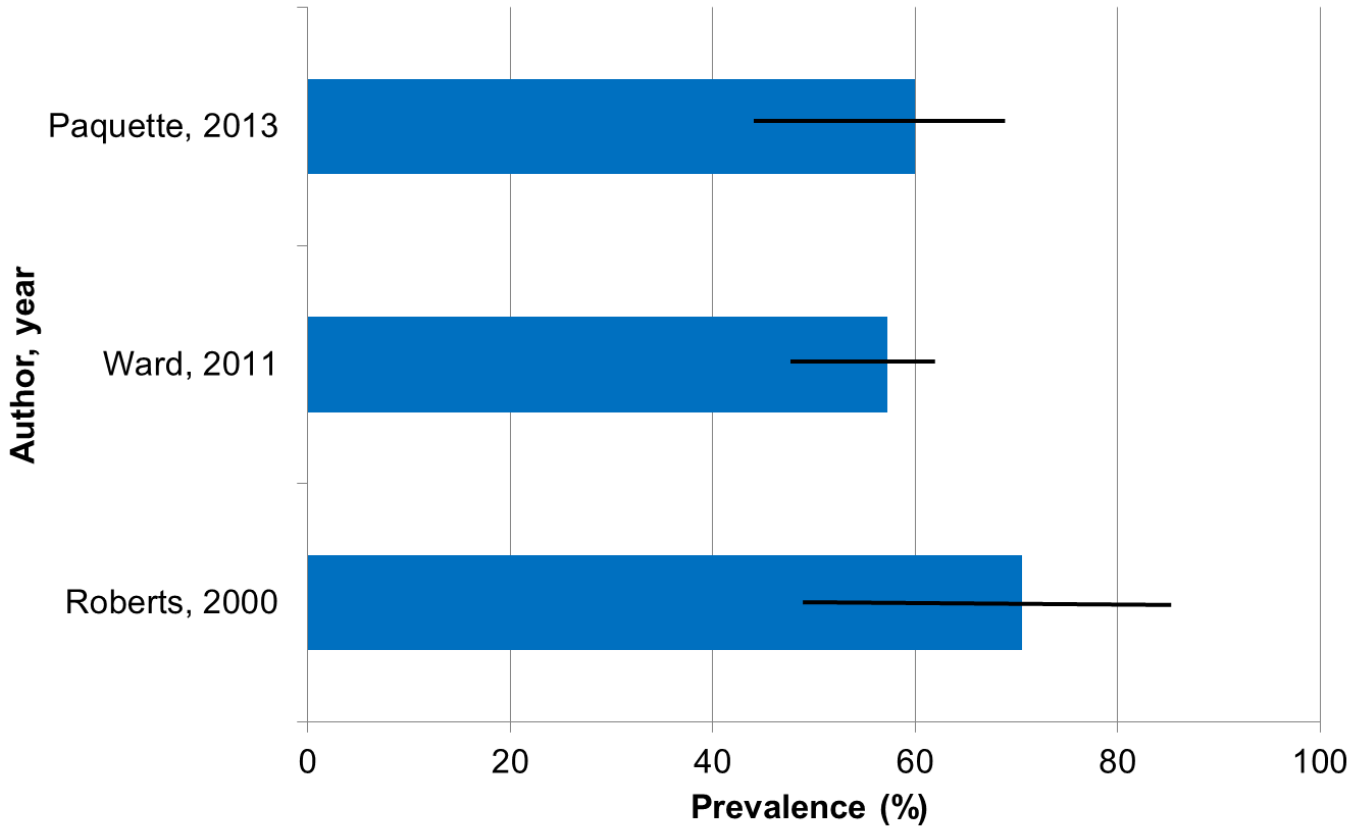
- Geographical location
  - 1 in a remote area
  - 2 in regional areas
  - 2 in urban areas
  - 10 were national analyses or include multiple jurisdictions

- High risk behaviour
  - 11 of the 15 studies had participants at high risk of HCV infection (e.g. people who inject drugs & people in prison)

Results

- Study population-groups:
  - 8 studies included people in prison
  - 3 studies included people who inject drugs who attended an NSP
  - 2 studies were among adults
  - 1 study was among haemodialysis patients
  - 1 study was among people diagnosed with hepatocellular carcinoma (HCC)

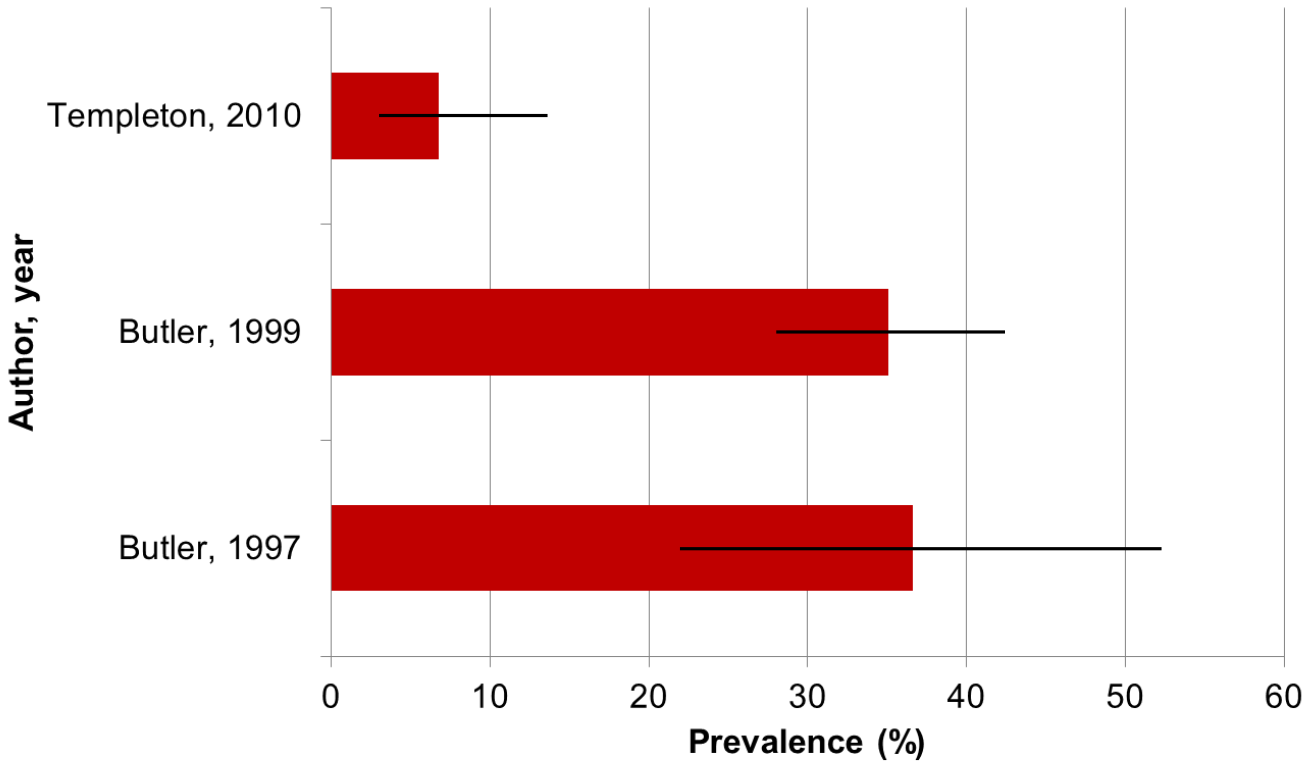
Prevalence of hepatitis C among Aboriginal people who inject drugs



Pooled prevalence = 58.7%, (95% CI: 53.8-63.5%), I^2=19.3%, p=0.290

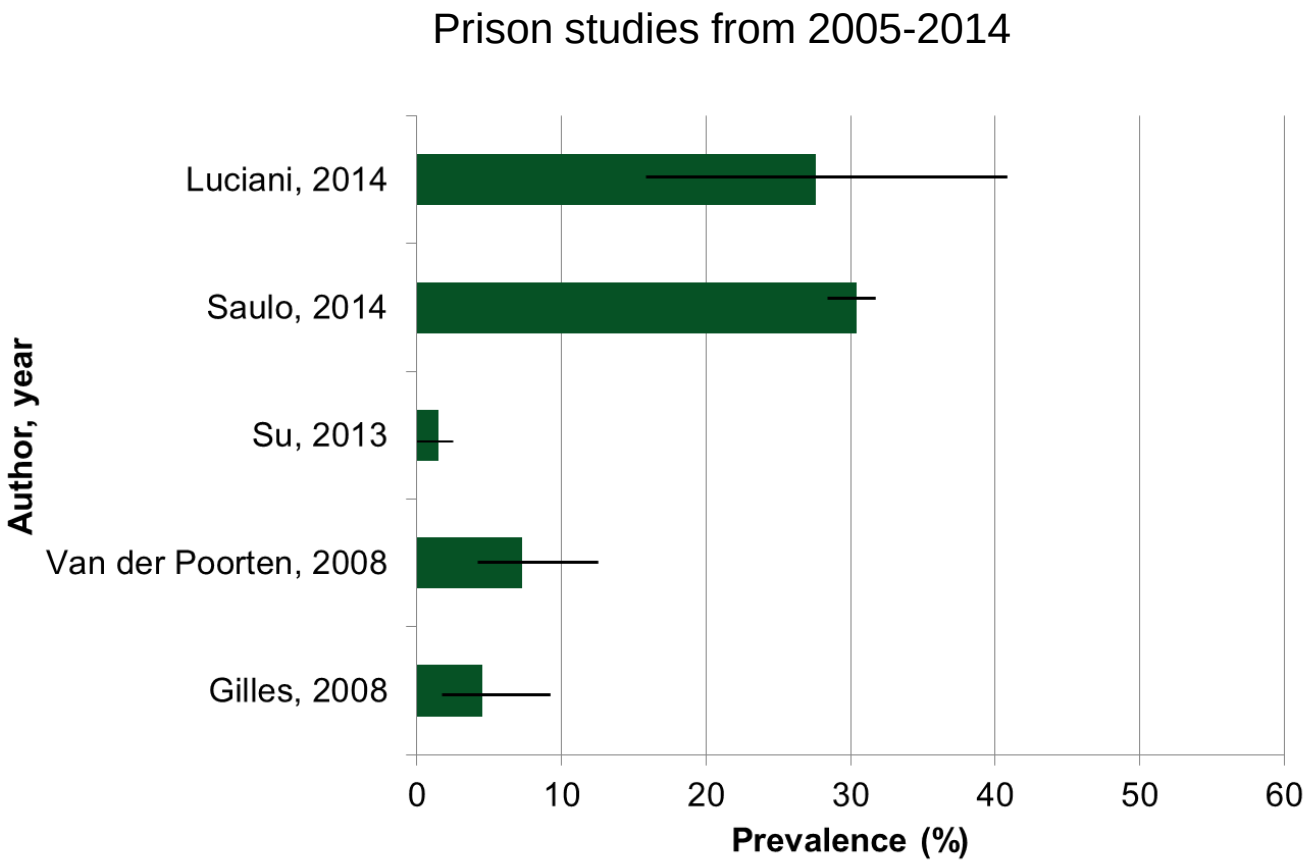
Prevalence of hepatitis C among Aboriginal people in prison

Prison studies from 1997-2004



Pooled prevalence = 25.7%, (95% CI: 4.1-47.3%), I^2=95.1%, p<0.05

Prevalence of hepatitis C among Aboriginal people in prison



Pooled prevalence = 14.5%, (95% CI: 1.7-27.3%), I^2=99.2%, p<0.05

Prevalence of hepatitis C among Aboriginal people in prison by period

- Prison studies between 1997-2004
  - 25.7%, (95% CI: 4.1-47.3%), I^2=95.1%, p<0.05
- Prison studies between 2005-2014
  - 14.5%, (95% CI: 1.7-27.3%), I^2=99.2%, p<0.05
- **Overall**
  - 18.4%, (95% CI: 8.0-28.8%), I^2=98.8%, p<0.05

Limitations

- Heterogeneity
  - Prison studies had a significant degree of heterogeneity (I^2>90%)
    - reducing the reliability of the pooled estimates
  - PWID studies had a low level of heterogeneity (I^2=19.3%, p=0.29)

- Selection bias
  - Some individuals actively sought health services
  - Some could have identified themselves as having a risk for HCV
  - Some individuals attended NSPs
  - Some were in prison, where no NSPs exist and sharing is common
  - Our study estimates the prevalence of hepatitis C among high risk individuals and **NOT the general Aboriginal population**

Discussion

- Prevalence of hepatitis C was:
  - 58.7% among Aboriginal people (our review)
  - 62.0% among Aboriginal people (Australian NSP survey report)[7]
- Increasing prison population and increasing proportion of Aboriginal people in prison could explain the reduction of HCV prevalence (prison population more reflective of general population):[8]
    - 25.7% (1997-2004) vs 14.5% (2005-2015)
- Drug are available in prisons - around half of prisoners with a history of injecting drug use will inject while incarcerated[8]
  - Some people initiate injecting in prison

7. Iversen J and Maher L. Australian Needle and Syringe Program National Data Report 1995-2014. Kirby Institute, UNSW Australia, 2015.
8. Reekie JM, et al. Trends in HIV, hepatitis B and hepatitis C prevalence among Australian prisoners - 2004, 2007, 2010. *Med J Aust* 2014; 200: 277-280

Recommendations – Monitoring and Treatment

- Monitoring
  - Improve monitoring systems to include Aboriginal and Torres Strait Islander identification to support targeted and effective resources
- Treatment
  - Culturally appropriate promotion and information about the new treatments
  - Increased support to deliver new treatment in low-threshold settings (NSP, AMS)
  - Peer support to access testing and treatment

Recommendations: Prevention

- Prevention in Prison

  Prisoners shall have access to the health services available in the country without discrimination on the grounds of their legal situation (UN Charter)

  – Access to NSPs

  – Equal access to OST

- Community access to NSP and OST

  – NSP services are generally good in Australia but there are many rural communities with very significant issues for Aboriginal people who inject drugs

- Consideration on how to safeguard communities while their members cycling in and out of prison

Conclusions

- High prevalence of hepatitis C in Aboriginal People a human rights issue
- We must remember that stigma is driving the HCV epidemic and we will only eliminate HCV if we provide equitable access to health care and address stigma
- It's complex, it won't be easy to address
  - The entrenched social and economic marginalisation in Aboriginal and Torres Strait Islander people requires holistic and well-funded strategies to address the underlying social determinants of Indigenous ill-health (JW)

Published paper

Hepat Mon. 2016 July; 16(7):e38640. doi: 10.5812/hepatmon.38640.

Published online 2016 July 2. **Review Article**

Prevalence of Hepatitis C Among Australian Aboriginal and Torres Strait Islander people: A Systematic Review and Meta-Analysis

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Abstract

Context: Aboriginal and Torres Strait Islanders (Aboriginal) account for approximately 3% of the Australian population. They have the poorest health, economic and social outcomes. Higher notification rates of hepatitis C antibodies (anti-HCV) have been reported among Aboriginal compared with non-Aboriginal people. The identification of Aboriginal people in national surveillance has some weaknesses, with only four of the eight jurisdictions included in national reporting. To address some of these limitations, we aim to estimate the pooled prevalence of anti-HCV among Aboriginal people in Australia.

Evidence Acquisition: We searched the databases: Pubmed, Web of Science and Informit, and the New South Wales and Northern Territory Public Health Bulletins. A study was included if it reported the number of Aboriginal people testing positive for anti-HCV and the number tested for anti-HCV. A meta-analysis by population-group was conducted if three or more studies reported a prevalence estimate. Variables included: author, year of publication, study design, study period, gender (female, male), age, population group (Aboriginal people in prison, Aboriginal people who inject drugs), number testing anti-HCV positive, number tested for anti-HCV and prevalence (%). Due to a long time period, we separated the studies estimating the prevalence anti-HCV among Aboriginal people in prison into two time periods, 1994 - 2004 and 2005 - 2012.

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Thank you