Kirby Institute

Populating the Hepatitis C Testing, Care and Treatment Cascade among People Who Inject Drugs in Australia

Jenny Iversen, Jason Grebely, Beth Catlett, Greg Dore and Lisa Maher

Background

- The majority of new and existing hepatitis C virus (HCV) infections occur among people who inject drugs (PWID)
- An estimated 10 million PWID exposed to the virus globally[1]
- Interferon-based treatment uptake historically low among PWID
  - ~2% of PWID treated annually in Australia in all years to 2015[2]
- Universally accessible HCV direct-acting antiviral (DAA) therapies were made available on the Pharmaceutical Benefits Scheme in Australia on 1st March 2016
  - Efficacious, fewer side effects, affordable
- Potential to markedly improve treatment access and uptake among PWID and require a mechanism to monitor whether this is the case
  - 'Cascade of care' framework adapted to monitor HCV testing, care and treatment among PWID in Australia.

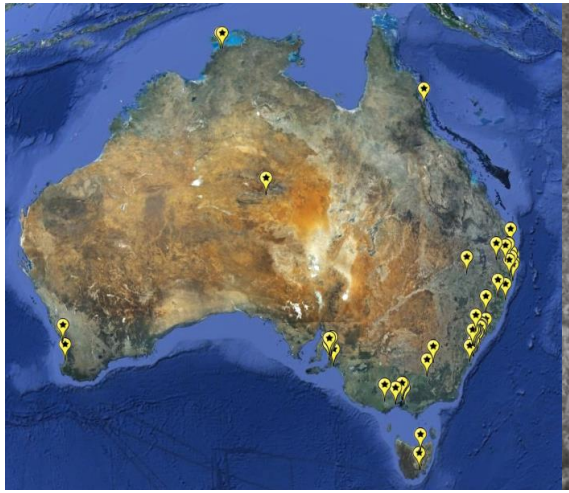
1. Nelson P, Mathers B. et al. *The Lancet* (2011)
2. Iversen J, Grebely Jet al. *Journal of Viral Hepatitis* (2013)

Aims

1) Develop a methodology to monitor changes in testing, care and treatment uptake among active PWID
2) To establish baseline estimates of the HCV cascade of care among PWID prior to introduction of DAAs
3) Investigate opportunities for improving linkages to care among active PWID in Australia.

Methods

- Utilize behavioural and serological data from the 2015 Australian NSP survey to generate % and 95% confidence intervals (CI) for each stage in the HCV cascade of care



Source: ANSPS

Methods

- Utilize behavioural and serological data from the 2015 Australian NSP survey to generate % and 95% confidence intervals (CI) for each stage in the HCV cascade of care
- Respondents were asked to provide information about their:
  - self-reported hepatitis C status
  - history of HCV testing (including confirmatory RNA/PCR testing)
  - specialist HCV care (including assessment using fibroscan)
  - History of HCV treatment
- Serological testing of capillary dried blood spots:
  - Antibodies to HCV (Monolisa Plus anti-HCV EIA version 2; Bio-Rad, Marnesla-Coquette, France)
  - HCV RNA (Abbott RealTimeTM Illinois, United States).
- Extrapolation of results using Australian PWID population size estimates

Source: ANSPS 2015

Results

At the end of 2015, among an estimated 107,400 PWID[3] who injected in the previous 12 months:

- 89% (n=95,472, range: 94,018-96,821) had received HCV antibody testing
- 57% (n=61,334, range: 58,995-63,645) had been exposed to HCV

In 2015, 19% of ANSPS respondents had spontaneously cleared the virus (HCV antibody positive and HCV RNA negative serological results with no self-reported history of HCV treatment).

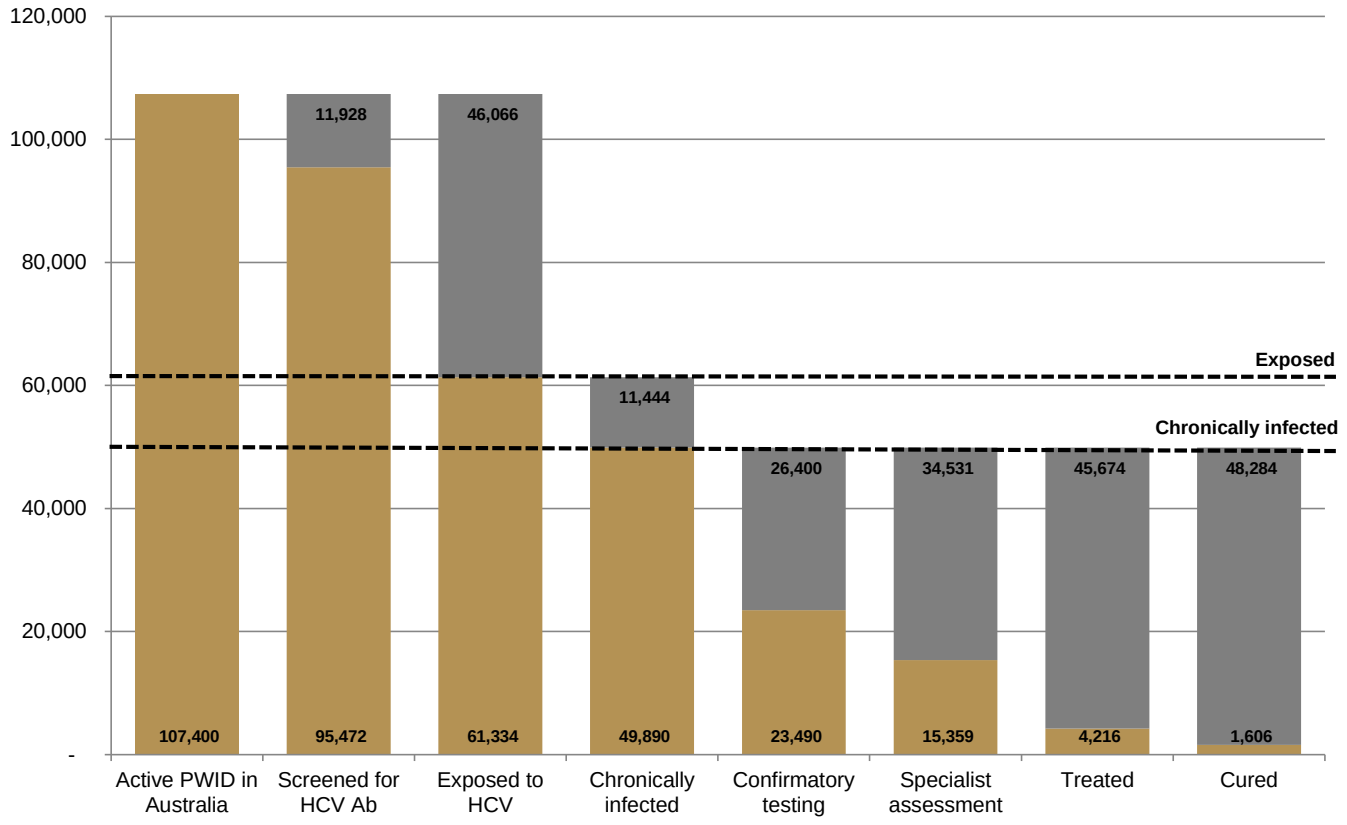
3. Larney S (2016) pers. comm.

Results

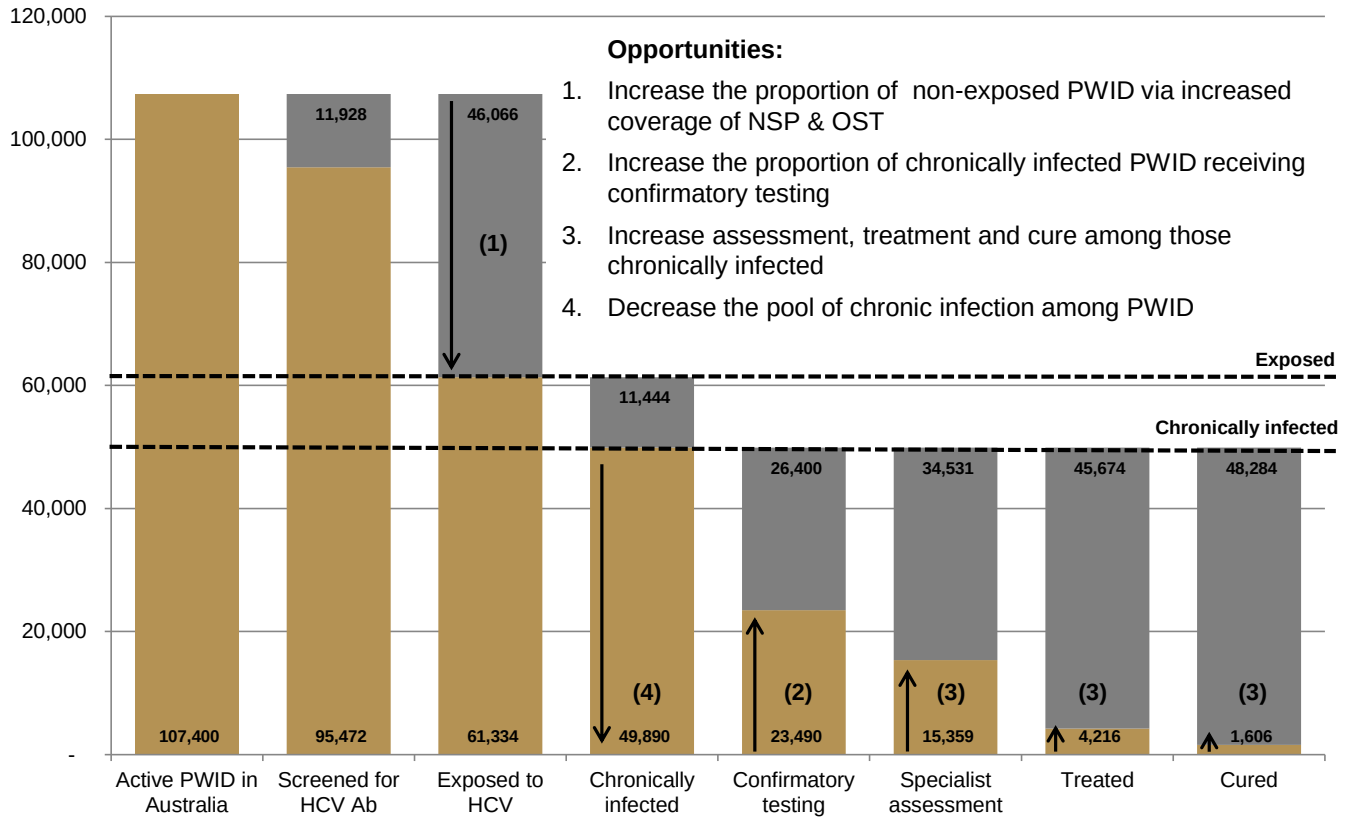
At the end of 2015, among an estimated 49,890 (range: 48,092-52,054) PWID with chronic infection:

- 47% (n=23,490, range: 21,263-35,733) had confirmatory testing
- 31% (n=15,359, range: 13,346-17,487) had received specialist HCV assessment (majority assessed using fibroscan)
- 9% (n=4,216, range: 3,073-5,613) had been treated with antiviral therapies
- After adjusting for treatment success of 55% in the interferon-based treatment era and allowing for some re-infection, it is estimated that 48,284 PWID were living with chronic HCV infection in Australia at the end of 2015.

Discussion


120,000
100,000
80,000
60,000
40,000
20,000
-
11,928
46,066
11,444
26,400
34,531
45,674
48,284
107,400
95,472
61,334
49,890
23,490
15,359
4,216
1,606
Exposed
Chronically infected
Active PWID in Australia
Screened for HCV Ab
Exposed to HCV
Chronically infected
Confirmatory testing
Specialist assessment
Treated
Cured

Discussion


120,000
100,000
80,000
60,000
40,000
20,000
-
Opportunities:
1. Increase the proportion of non-exposed PWID via increased coverage of NSP & OST
2. Increase the proportion of chronically infected PWID receiving confirmatory testing
3. Increase assessment, treatment and cure among those chronically infected
4. Decrease the pool of chronic infection among PWID
Exposed
Chronically infected
11,928
46,066
(1)
11,444
26,400
34,531
45,674
48,284
(4)
(2)
(3)
(3)
(3)
107,400
95,472
61,334
49,890
23,490
15,359
4,216
1,606
Active PWID in Australia
Screened for HCV Ab
Exposed to HCV
Chronically infected
Confirmatory testing
Specialist assessment
Treated
Cured

Conclusion

- High uptake of HCV antibody testing among active PWID
- Strategies are required to enhance confirmatory HCV testing
- Unrestricted access to DAAs has the potential to markedly improve the HCV care cascade among active PWID
- Between March and June 2016 an estimated 15,493[4] people had initiated DAA therapy and it is likely that more people will have initiated DDA therapies by the end of 2016 than the total treated in the interferon era
- However, the proportion of those treated who are active PWID is uncertain:
  - strategies to ensure linkage to care and access and uptake of HCV treatment among this sub-population
  - Utilize ANSPS to monitor HCV treatment uptake among PWID
  - Conduct HCV antibody and RNA testing of ANSPS DBS to monitor the pool of chronic infection among PWID
  - Update the HCV testing, care and treatment cascade among PWID in 2017
- Ensure that primary prevention strategies (NSP and OST) are maintained or enhanced.

Acknowledgements

- Australian Government Department of Health, NSP clients who participated in the ANSPS, NSP managers and staff, ANSPS National Advisory Group, NSW State Reference Laboratory for HIV St Vincent's Hospital/St Vincent's Centre for Applied Medical Research.
- JI is supported by a NHMRC Early Career Fellowship, JG is supported by a NHMRC Career Development Fellowship, GD is supported by a NHMRC Practitioner Fellowship and LM is supported by a NHMRC Senior Research Fellowship.

Disclosures

- JG is a consultant/advisor and has received research grants from Abbvie, Bristol Myers Squibb, Gilead, Janssen, and Merck. GD is an advisory board member and receives honorarium from Roche, Merck, Janssen, Gilead, Bristol-Myers Squibb, Abbvie, has received research grant funding from Roche, Merck, Janssen, Gilead, Bristol-Myers Squibb, Vertex, Boeringher Ingelheim, Abbvie, and travel sponsorship from Roche, Merck, Janssen, Gilead, and Bristol-Myers Squibb.