

# Safety, effectiveness and potential contribution to hepatitis C virus (HCV) elimination of a prison-based nurse-led HCV treatment program in NSW, Australia

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## Background

- Effective systems are required to treat large numbers of people with HCV infection to achieve elimination
- People who experience incarceration have a high prevalence of HCV infection
- Imprisonment offers a potential treatment access point for people with HCV infection

## Hypothesis

- That the nurse led model of care established in NSW prisons for HCV treatment in the interferon era would be effective in the direct acting antiviral (DAA) era and enable significant treatment scale-up in NSW

## Aims

- To assess the effectiveness of a nurse-led HCV model of care in the NSW prisons system
- To report the numbers of treatment courses delivered since the introduction of DAAs in April 2016

## Methods

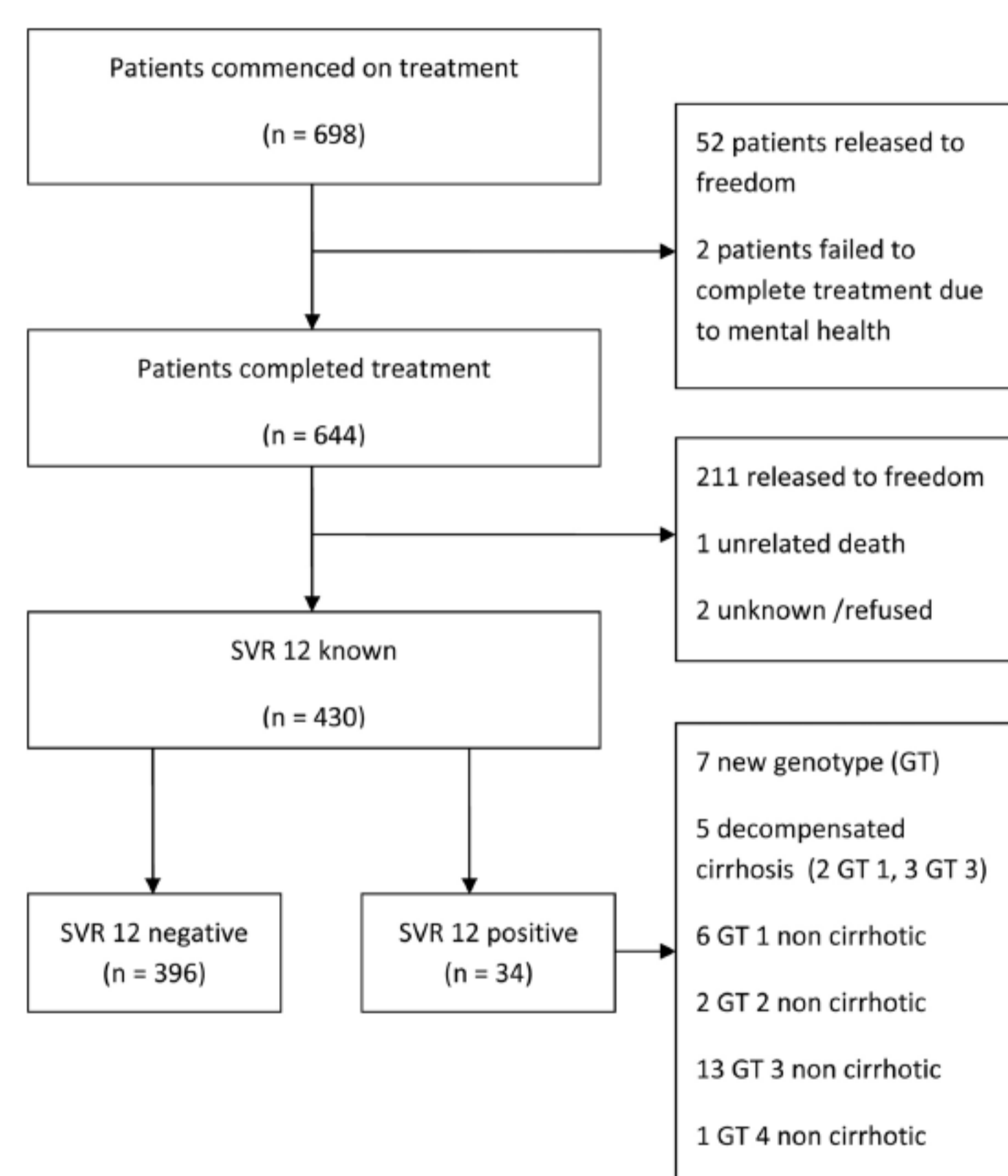
- Nurses assessed patients with a protocol driven approach, initially including transient elastography for all patients and subsequently with the utilisation of non-invasive fibrosis markers from 2018<sup>1</sup>
- Patients were presented to infectious diseases physicians by the nurses and HCV DAA treatment was prescribed and dispensed
- We report a retrospective cohort study from April 2016 to March 2019
- A sub-cohort from April 2016 to March 2017 was analysed for treatment outcomes<sup>2</sup>
- Justice Health and Forensic Medical Network dispensing and patient assessment records were reviewed retrospectively
- Outcomes reported included:
  - Total numbers treated each 12 month period starting in April in all years
  - SVR12 in those treated and followed to the SVR12 time-point in year 1
  - SVR12 by genotype

## Results in first 12 months

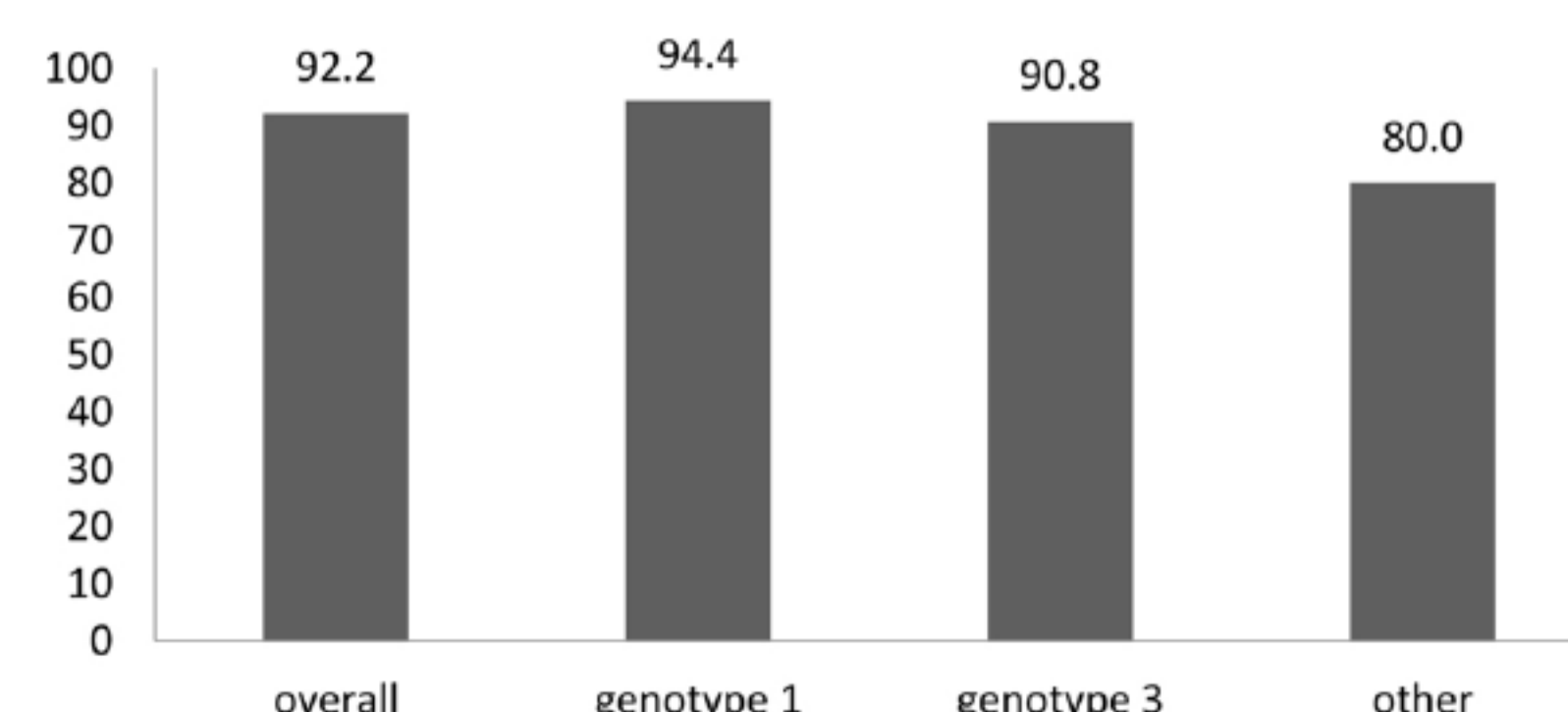
**Table 1. Demographic characteristics of patients who commenced HCV DAA treatment between April 2016 and March 2017 (n=698).**

| Characteristics                      | No. patients (%) |
|--------------------------------------|------------------|
| Sex                                  |                  |
| Male                                 | 633 (90.7)       |
| Female                               | 65 (9.3)         |
| Age (years)                          |                  |
| Median                               | 38               |
| IQR                                  | 32-45            |
| Aboriginal or Torres Strait Islander | 214 (30.7)       |
| Overseas born                        | 64 (9.3)         |
| Cirrhotic                            | 113 (16.2)       |
| Genotype                             |                  |
| 1                                    | 373 (53.4)       |
| 3                                    | 290 (41.5)       |
| Other                                | 35 (5.1)         |
| Treatment                            |                  |
| Sofosbuvir/ledipasvir                | 348 (49.9)       |
| Sofosbuvir/daclatasvir               | 308 (44.1)       |
| Other                                | 42 (6.0)         |

**Figure 1. Outcome of patients who commenced HCV DAA treatment in custody between April 2016 and March 2017 (n=698)**



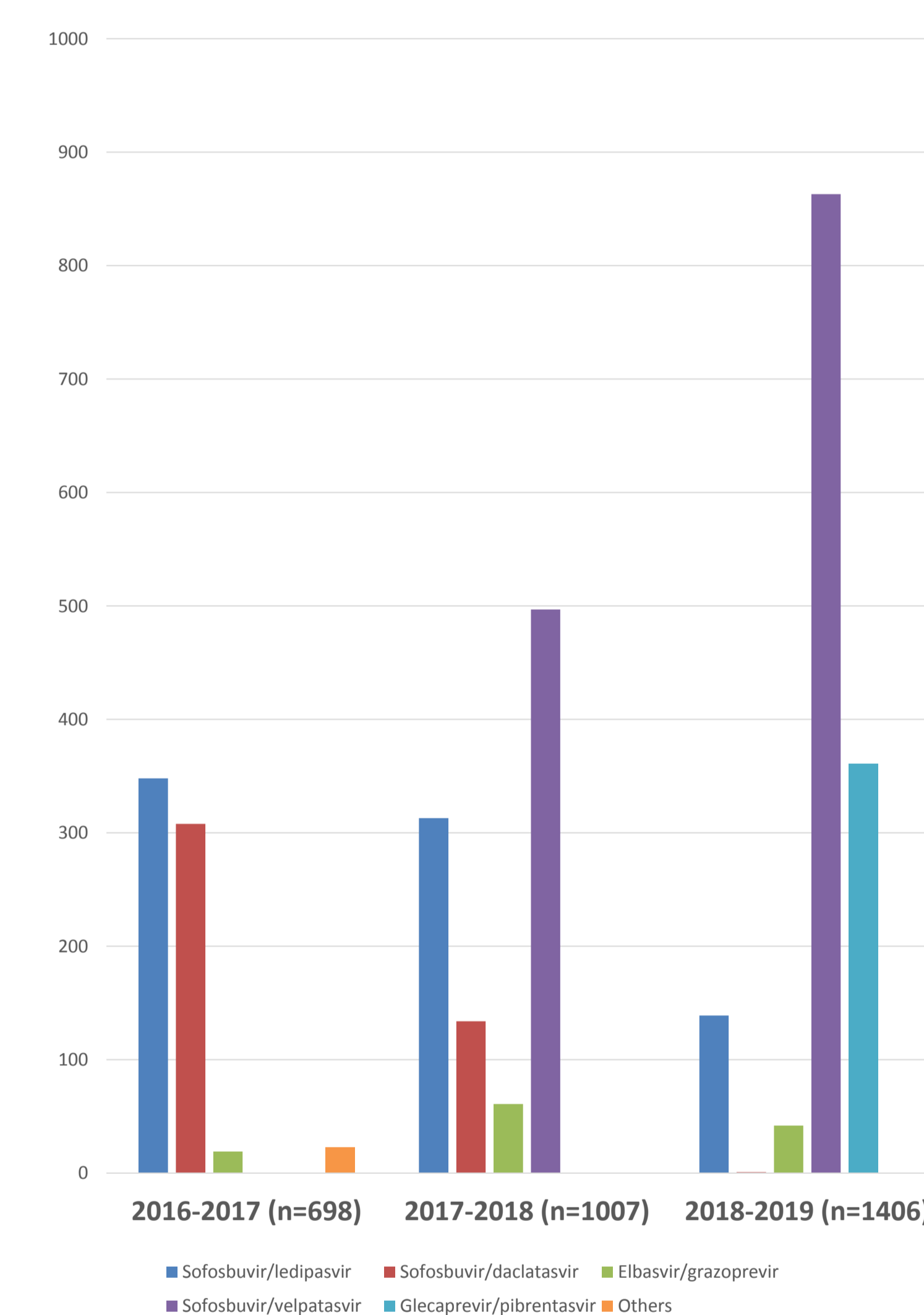
**Figure 2. Treatment responses (per protocol analysis) of patients who commenced HCV DAA treatment between April 2016 and March 2017 (n=698)**



- No differences were identified between patients released to freedom and therefore not assessed at the SVR12 timepoint and those that were assessed.
- Factors assessed include sex, age, Indigenous status, overseas birth, cirrhosis, genotype, treatment regimen and treatment duration ( $p > 0.11$  for all)

## Results after first 12 months

**Figure 3. Number of patients treated in custody in NSW each year after the introduction of HCV DAAs (each year runs from April of the calendar year to March the following year) by DAA regimen type**



## Summary

- HCV treatment can be commenced in large numbers in the NSW prison system and the outcomes are comparable to other published series
- At present the numbers being treated are increasing each year
- Imprisonment represents an opportunity to provide HCV treatment that this population may not access outside prison

**Acknowledgements:** We would like to acknowledge the nursing and support staff in Justice Health and Forensic Mental Health Network as well as the patients whose data has been included in this presentation

**References:** 1. Kelly ML, Riordan SM, Bopage R, Lloyd AR, Post JJ. Capacity of non-invasive hepatic fibrosis algorithms to replace transient elastography to exclude cirrhosis in people with hepatitis C virus infection: a multi-centre observational study. 2018 *PLoS ONE*. 13(2): e0192763.  
2. Overton K, Clegg J, Pekin F, Wood J, McGrath C, Lloyd A, Post JJ. Outcomes of a nurse-led model of care for hepatitis C assessment and treatment with direct-acting antivirals in the prison setting. *International Journal of Drug Policy*. 2019 Apr 6. pii: S0955-3959(19)30078-7. doi: 10.1016/j.drugpo.2019.02.013