

# Outcomes of a nurse-led model of care for HCV treatment in Victorian Prisons

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Statewide Hepatitis Program, Victorian Prisons

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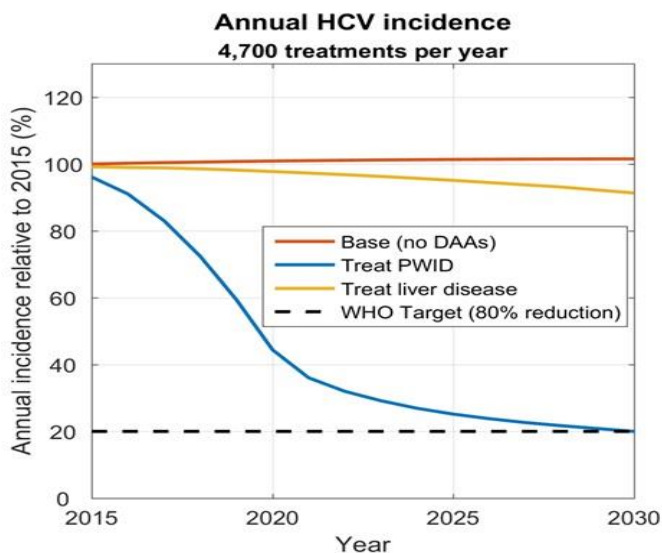
Burnet Institute Melbourne<sup>2</sup>

Department of Justice and Regulation<sup>3</sup>



## Elimination of HCV

Australia targets 80% reduction in HCV incidence by 2030



- In Australia, treatment scale-up must be among PWID to reach the WHO's incidence target.
- Difficult population to engage in HCV care
  - Low healthcare utilisation
  - Labour intensive

ASHM. Primary Care Providers and Hepatitis C. Available from: [http://crmpub.ashm.org.au/product/Primary%20Care%20Providers%20and%20Hepatitis%20C\\_493935168F38E61181113863BB2E6808/PCP\\_and\\_HCV\\_web\\_V10.pdf](http://crmpub.ashm.org.au/product/Primary%20Care%20Providers%20and%20Hepatitis%20C_493935168F38E61181113863BB2E6808/PCP_and_HCV_web_V10.pdf)  
Scott N et al. Gut Published Online First: [12 April 2016] doi:10.1136/gutjnl-2016-311504

# Victorian Prisons = public health opportunity

- sufficient scale up will contribute to elimination
- HCV is common in prisons
  - Prevalence 40x higher within prison
  - Incidence 9.4% per year amongst PWID
- Barriers to HCV treatment in prisons:
  - Short prison sentences
  - Frequent transfer between prisons
  - IFN toxicity, duration
  - Funding for antiviral drug
  - Limited specialist access
- Minimal HCV treatments prior to 2015



ABS report, 2015; 3<sup>rd</sup> National Hepatitis C Strategy, 2010 – 2013; 2007 National Prison Entrants' Bloodborne Virus and Risk Behaviour Survey; Luciani F, et al. *Addiction* 2014;109,1695–706

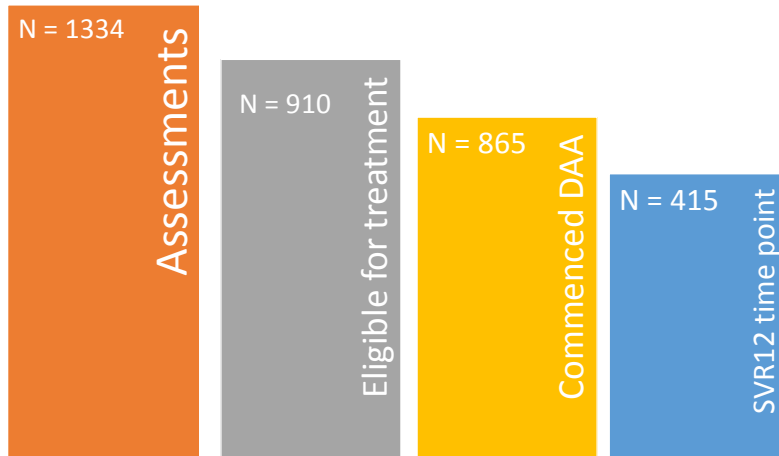
## Statewide Hepatitis Program

- State-sponsored
  - Department of Justice and Regulation
- Nurse-led
  - 2 full-time nurse specialists
  - protocol-driven assessment & management
  - portable FibroScan
  - delivers care locally to each prison
    - minimizes prisoner movement
- Supervising hepatologists
  - 3 part-time hepatologists (0.25 FTE)
  - F2F and via tele-medicine
- Centralised pharmacy distribution
  - PBS S100 criteria provides access to prisoners
  - 16 treatments / week
- Centralised medical record (J-Care {DoJ})



# Statewide Hepatitis Program

1<sup>st</sup> November 2015 – 1<sup>st</sup> July 2017



Data analysis from initial 415 consecutively treated patients to be presented

## Methods

- 415 initial consecutively treated prisoners
- SVR12 prior to 1<sup>st</sup> July 2017
- Key outcomes of interest
  - Population characterisation
  - Program performance
  - Treatment outcomes
    - Complete
    - Incomplete
- Analysis

## Prisoner Characteristics

	N = 415
Age (mean)	39.5
Male gender (%)	90 %
Ethnicity (%)	
- Caucasian	68 %
- Indigenous	12 %
- Other	20 %
Body Mass Index (mean kg/m <sup>2</sup> )	30 [27-34]
ALT U/L (median, IQR)	88 [55-146]
HCV RNA IU/mL (median, IQR)	685,000 [192,000-2,616,500]
HCV Genotype (%)	
- 1a	44 %
- 1b	3 %
- 3	50 %
- 2	2 %
- 6	1 %
LSM kPa (%)	
- < 9.5	72 %
- 9.5 – 12.5	10 %
- >12.5	18 %
Cirrhotic (n, %)	21 %
- Compensated	18 %
- Decompensated	3 %

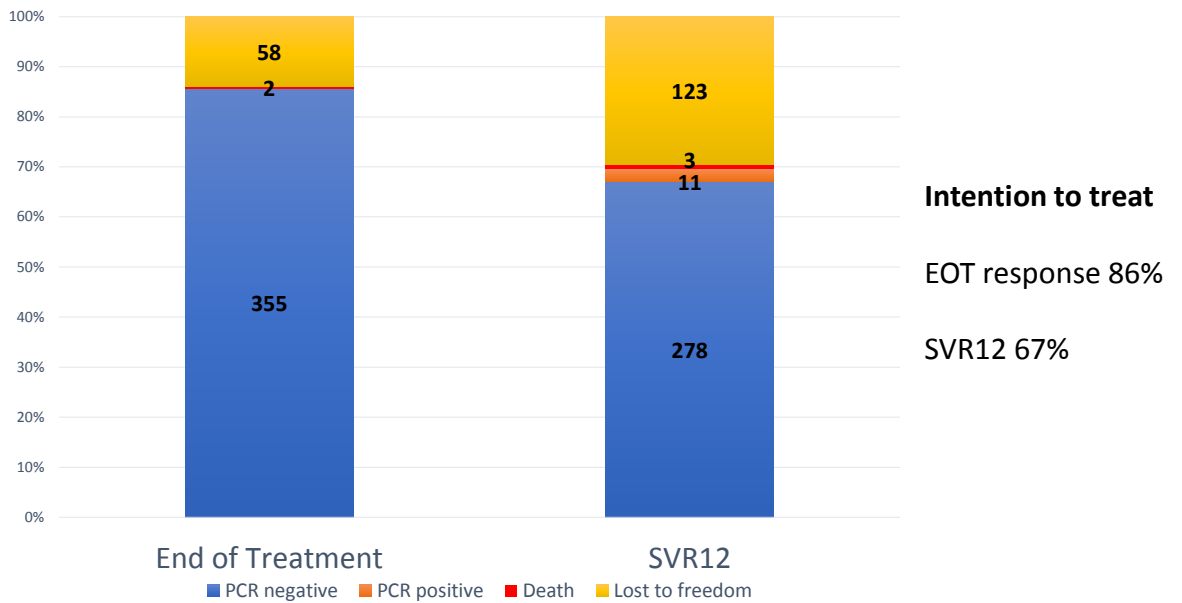
## Prisoner Characteristics

	N = 415
HBV co-infection	
- HBsAg positive	2 %
- Anti-HBc positive	30 %
- Anti-HBs positive	81 %
HIV co-infection	2 %
PWID	
- Ever	94 %
- Month prior to incarceration	68 %
- Age started (median, IQR)	17 [15-21]
- Ever shared while in prison	57 %
Drug of choice	
- Heroin	60 %
- Amphetamines	36 %
- Prescription / other	4 %
OST	
- Methadone	52 %
- Suboxone	3 %
Mental health history	
- Self-reported	70 %
- Psychotropic medication	50 %
HCV care	
- Never sought specialised HCV care	86 %
- Treatment experienced	6 %

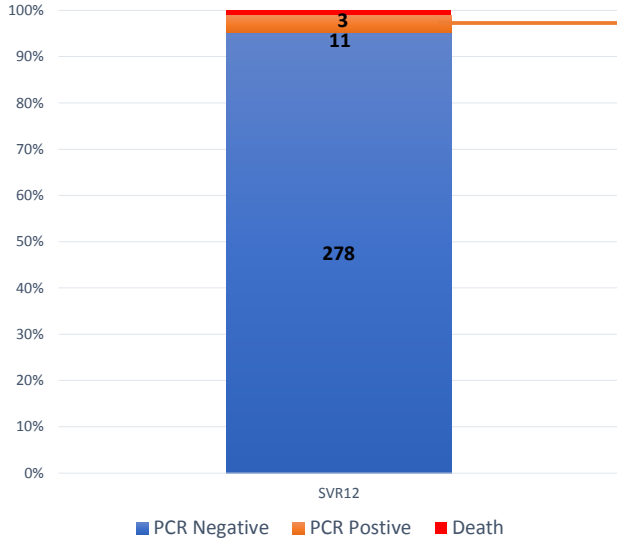
## Service Characteristics

N = 415	
Assessments:	
- Nurse only contact	82 %
- Telehealth and/or Face-to-face with specialist	18 %
Referral to assessment, days (mean, IQR)	48 [17-62]
Number of prisoner movements	
- 1+ movement while on treatment	27 %
Cirrhosis surveillance	
- Hepatoma screening	77 %
- Variceal surveillance	24 %
- Baveno criteria met	83 %
- Baveno criteria not met	17 %

## HCV treatment outcomes – Intention to Treat



### Prisoner who have SVR12 result available



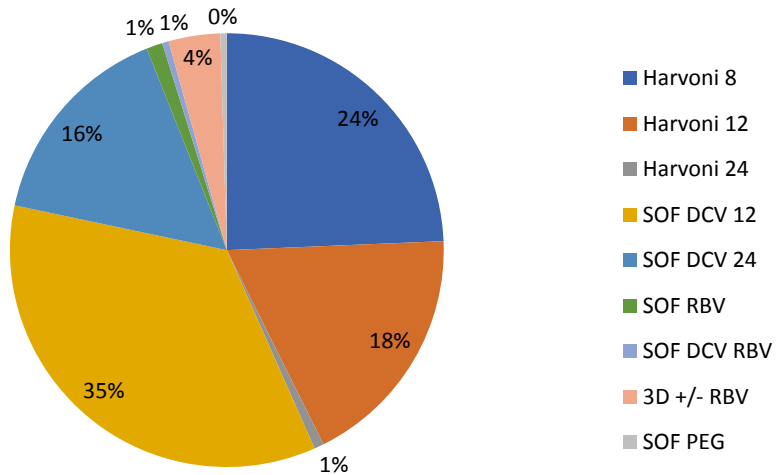
- 10 Relapses
- 1 Reinfection
- 3 Deaths
  - 2 Decompensated Cirrhotic patients
  - 1 non liver related death

### Per protocol Analysis

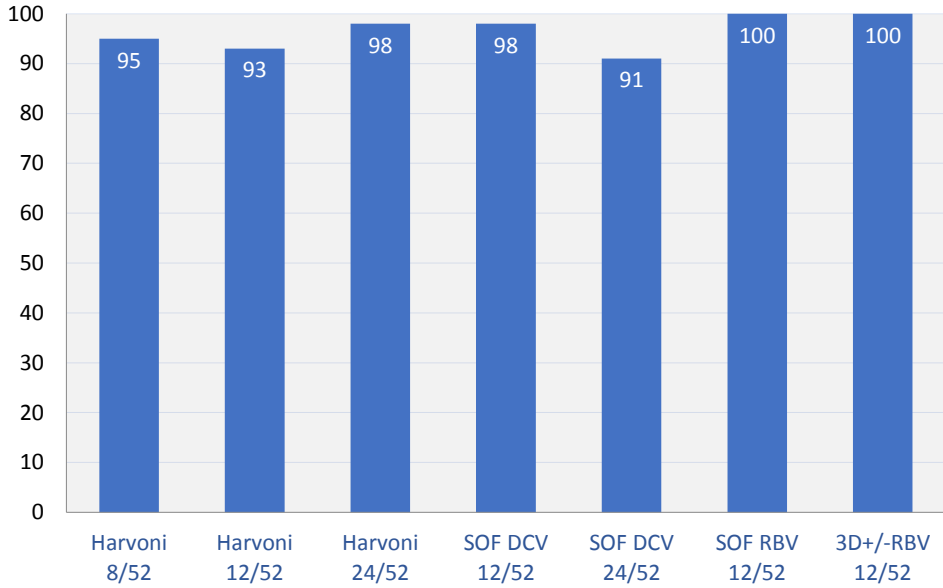
SVR12 95.2%

### HCV treatment Regimens (N=415)

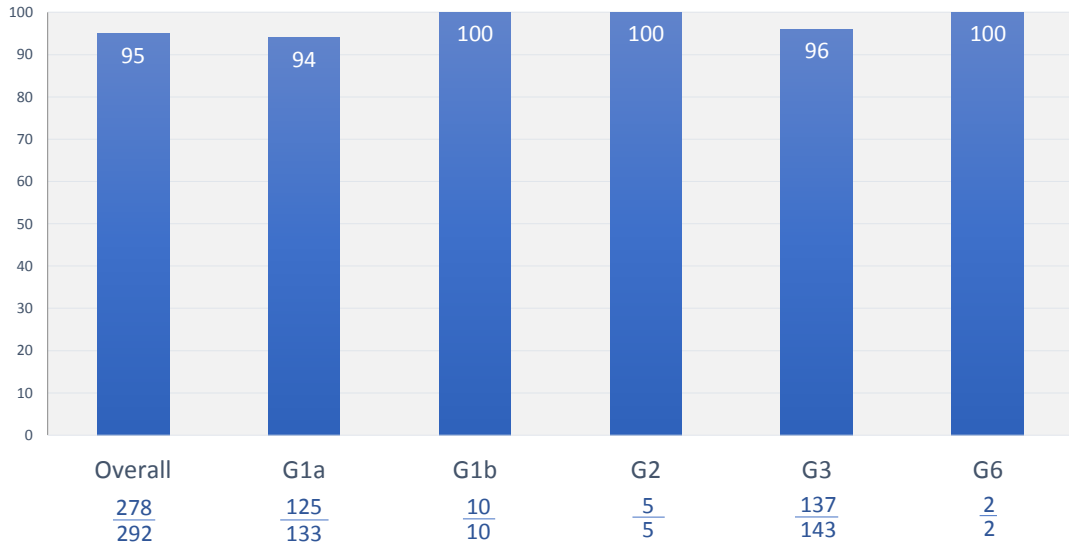
1<sup>st</sup> November 2015 – 1<sup>st</sup> January 2017



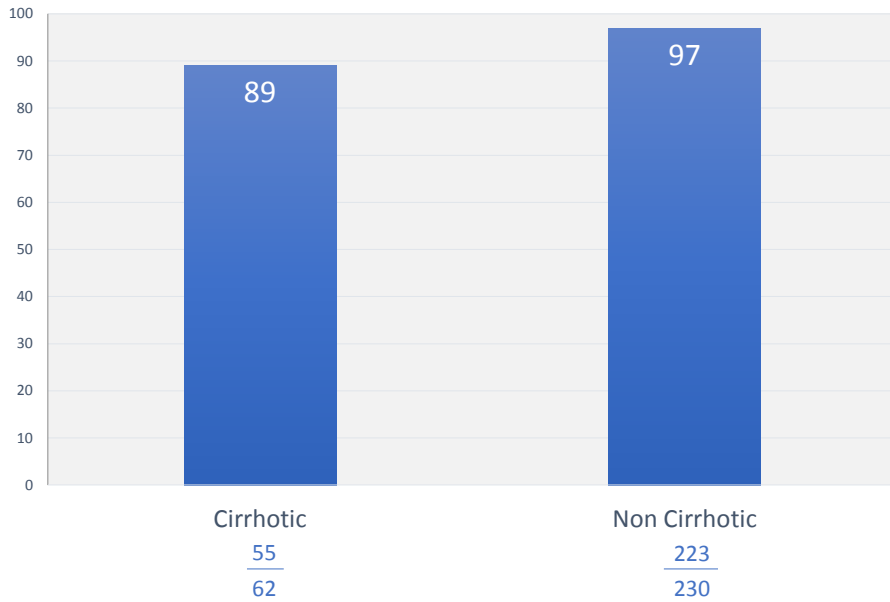
**SVR 12 rates by treatment Regimen**



**SVR12 rate by Genotype**



## SVR12 rates by cirrhosis status



## Relapse

Genotype	Medication(s)	Duration	Cirrhosis?	Shared IVDU	Retreatment
1a	Harvoni	8 weeks	No	No	Yes
1a	Harvoni	8 weeks	No	Yes	Yes
1a	Harvoni	8 weeks	No	No	Yes
1a	Harvoni	8 weeks	No	Yes	No
1a	Harvoni	12 weeks	No	Yes	No
3a	SOF DCV	12 weeks	No	No	No
3a	SOF DCV	12 weeks	No	Yes	No
3a	SOF DCV	24 weeks	Yes	No	Yes
3a	SOF DCV	8/24 weeks	Yes	Yes	Yes
3a	SOF DCV	13/24 weeks	Yes	No	Yes

**5/10**



## Deaths

Genotype	Medication(s)	Duration	Time of death	Cause of death
3a	SOF DCV	24 weeks	Prior to EOT	Decompensated liver failure
1a	Harvoni	12 weeks	Prior to EOT	Decompensated liver failure
1a	Harvoni	12 weeks	Between EOT and SVR12	Cardiac Arrest

## Reinfection

Initial genotype	Treatment experience	Medication	Duration	Reinfection timepoint	Repeated genotype
1a Cirrhotic	Naïve	Harvoni	12 weeks	EOT → SVR12	3a
3a Non cirrhotic	Naïve	SOF DCV	12 weeks	Post SVR12	3a

## Future Directions

- PhD project
- Linkage to care analysis
  - Anecdotally difficult to follow after release to freedom
    - Characterise barriers to linkage
    - Social indices and risk factor recidivism
  - ? Intensive follow up improves passage through HCV cascade of care

## CONCLUSIONS

- HCV treatment can be delivered safely, effectively and in high numbers in the prison setting using an innovative nurse-led model of care
- Excellent treatment responses in excess of 95% can be achieved.
- The prison setting provides an excellent opportunity to engage and treat high risk individuals, and should be part of public health platforms that support the elimination of HCV

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