



Incidence of HCV infection in two maximum-security prisons in NSW, Australia: The SToP-C study

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S | T | O | P | C



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- No personal remuneration from pharma

Background

- HCV prevalence in the prison setting is high.
 - Global (HCV Ab+): 26%
 - Australia (HCV Ab+): 31%
- HCV transmission in the prison setting is also high due to lack, or sub-optimal coverage, of HCV prevention strategies, including needle syringe programs (NSP), and opioid substitution treatment (OST).
 - HCV incidence, global: 16/100 py
 - HCV incidence, Australia: 6/100 py
(among those with life-time history of injecting drug use)
- In NSW prisons, OST and disinfectant / bleach-cleansing of injecting equipment is available, but not NSP.
 - no significant impact on reducing HCV incidence

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Larney, Hepatology 2013; Butler 2015; Cunningham, JVH 2017

The Surveillance and Treatment of Prisoners with hepatitis C

- A public-private partnership project to investigate the efficacy of HCV treatment as prevention in the prison setting
- Overall aims:
 - To evaluate the impact of rapid scale-up of DAA treatment on HCV incidence and prevalence in the prison setting
 - To develop a translational framework for subsequent establishment of treatment-as-prevention programs in the prison sector

Maximum-security prisons

Goulburn Correctional Centre, Goulburn



Lithgow Correctional Centre, Lithgow



Medium-security prisons


Outer Metropolitan Multipurpose Correctional Centre (OMMPCC), Sydney

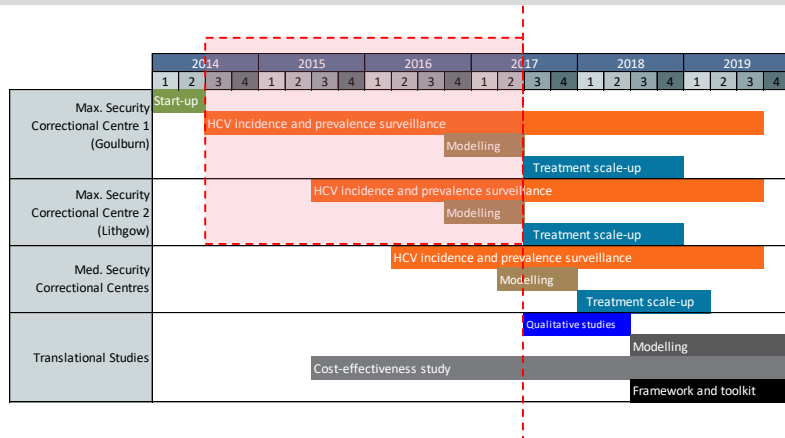


Dillwynia Correctional Centre (Women), Sydney



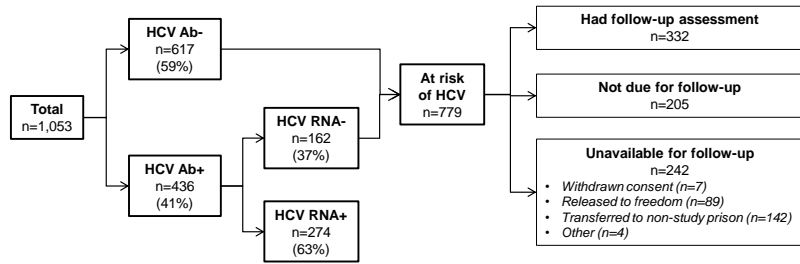
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S T O P C  **SToP-C: Study Schedule**



S T O P C  **Methodology**

- Data for this analysis includes prisoners enrolled from two maximum-security prisons between October 2014 and June 2017, with at least one follow-up visit.
- At enrolment, participants were screened for HCV Ab and HCV RNA, and completed a detailed survey, including injecting behaviours.
- HCV Ab or HCV RNA negative participants were re-tested every six months.
- Those HCV Ab negative were considered at risk of HCV primary infection
- Those HCV Ab positive, but HCV RNA negative were considered at risk of HCV reinfection



	Had follow-up assessment (n=332)
Age , median (Q1, Q3), years	34 (27, 45)
Length of sentence , median (Q1, Q3), years	15.0 (6.2, 22.0)
Duration incarcerated* , median (Q1, Q3), years	3.2 (1.2, 6.4)
Previously imprisoned	203 (61%)
Ever injecting	131 (39%)
Ever injecting in the current imprisonment	80 (24%)
Injecting in the last 6 months in prison	58 (17%)
Injecting in the past month in prison	41 (12%)
Sharing needle or syringe**	34 (83%)
Injecting weekly or more frequent**	30 (73%)

* Current incarceration

** Among those injecting in the past month in prison

Results

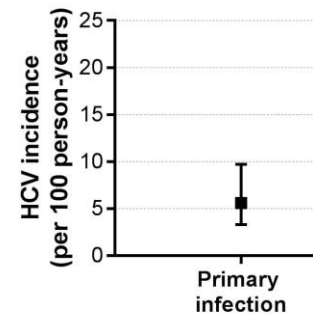
	Had follow-up assessment (n=332)	Unavailable for follow-up (n=242)
Age, median (Q1, Q3), years	34 (27, 45)	31 (25, 40)
Length of sentence, median (Q1, Q3), years	15.0 (6.2, 22.0)	4.7 (1.5, 11.0)
Duration incarcerated*, median (Q1, Q3), years	3.2 (1.2, 6.4)	1.0 (0.3, 2.6)
Previously imprisoned	203 (61%)	157 (65%)
Ever injecting	131 (39%)	102 (42%)
Ever injecting in the current imprisonment	80 (24%)	61 (25%)
Injecting in the last 6 months in prison	58 (17%)	52 (21%)
Injecting in the past month in prison	41 (12%)	38 (16%)
Sharing needle or syringe**	34 (83%)	28 (74%)
Injecting weekly or more frequent**	30 (73%)	25 (65%)

* Current incarceration

** Among those injecting in the past month in prison

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Results

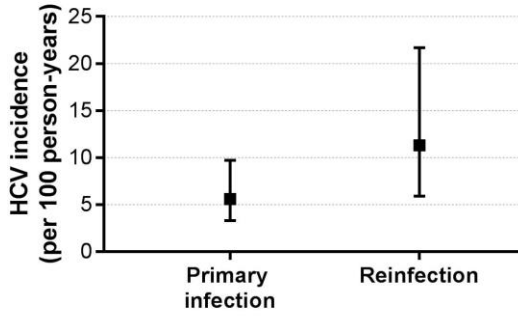


Person-years follow-up	231
Number of incident Infections	13
HCV incidence (95% CI)	5.6 (3.3, 9.7)

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S T O P C 

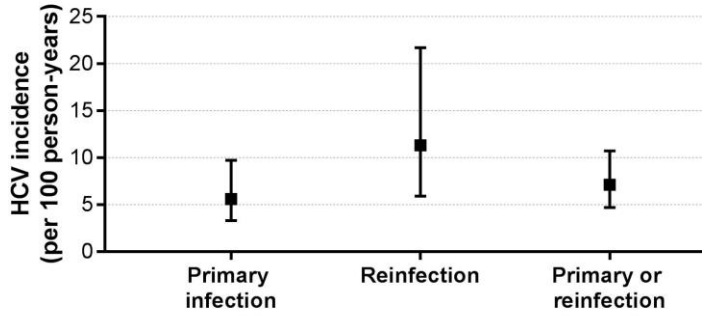
Results



Person-years follow-up	231	80
Number of incident Infections	13	9
HCV incidence (95% CI)	5.6 (3.3, 9.7)	11.3 (5.9, 21.7)

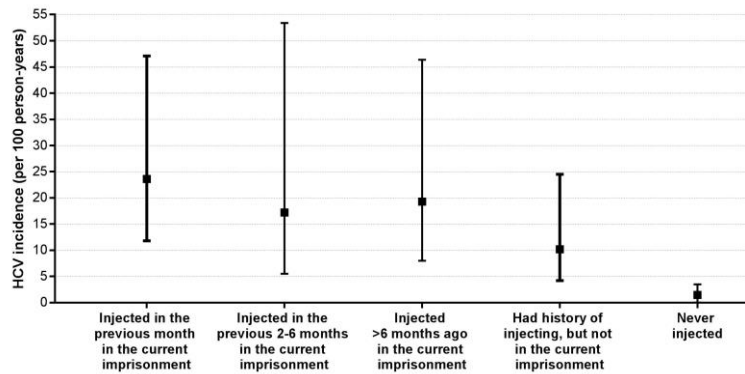
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Results



Person-years follow-up	231	80	311
Number of incident Infections	13	9	22
HCV incidence (95% CI)	5.6 (3.3, 9.7)	11.3 (5.9, 21.7)	7.1 (4.7, 10.7)

S T O P C  **Results**



	34	17	26	49	185
Person-years follow-up					
Number of incident Infections	8	3	5	5	1
HCV incidence (95% CI)	23.6 (11.8, 47.1)	17.2 (5.5, 53.4)	19.3 (8.0, 46.4)	10.2 (4.2, 24.5)	0.5 (0.1, 3.8)

S T O P C  **Results**

Factors associated with HCV incidence (unadjusted analysis)

	HR (95% CI)	P
Age, years	0.89 (0.84, 0.95)	<0.001
Duration incarcerated, years	0.82 (0.70, 0.96)	0.017
Previously imprisoned	3.87 (1.13, 13.19)	0.031
Aboriginal or Torres Strait Islander background	3.19 (1.34, 7.59)	0.009
Injecting behaviour		
Never injected	1.00	
Had history of injecting but not in current imprisonment	18.05 (2.11, 154.62)	0.008
Injected >1 month ago in the current imprisonment	29.79 (3.72, 238.58)	0.001
injected in previous month in current imprisonment	43.49 (5.40, 350.44)	<0.001

Results

Factors associated with HCV incidence (adjusted analysis)

	aHR (95% CI)	P
Age, years	0.94 (0.87, 1.01)	0.097
Duration incarcerated, years	0.89 (0.76, 1.05)	0.174
Previously imprisoned	1.22 (0.33, 4.53)	0.771
Aboriginal or Torres Strait Islander background	1.51 (0.55, 4.17)	0.427
Injecting behaviour		
Never injected	1.00	
Had history of injecting but not in current imprisonment	11.92 (1.33, 106.97)	0.027
Injected >1 month ago in the current imprisonment	20.96 (2.53, 173.25)	0.005
Injected in previous month in current imprisonment	19.17 (2.23, 164.86)	0.007

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Conclusions

- Significant HCV incidence (both primary infection and reinfection)
- HCV transmission was associated with injecting drugs and was the highest among participants with recent injecting in the prison.
- Among prisoners with recent injecting drug use, almost all individuals with incident HCV reported needle/syringe sharing.
- Comprehensive prevention strategies needed

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