



Knowledge and awareness of new treatments for Hepatitis C among Australian prison entrants

Melanie Simpson | 2018

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State and territory health departments

Steering Group

Dr Michael Levy (ACT), Marie Finley, Robert Kemp & Dr Alun Richards (QLD), Dr Hugh Heggie (NT), Andrew Wiley (SA), Deb Siddall, Dr Chris Wake (VIC), Helen Meyer-Tinning, Camilla Preston (VIC), Prof Tony Butler & Dr Melanie Simpson (Kirby Institute).

Development of HCV knowledge and awareness questions

Prof Tony Butler and Andrew Lloyd (Kirby Institute)

Survey administration

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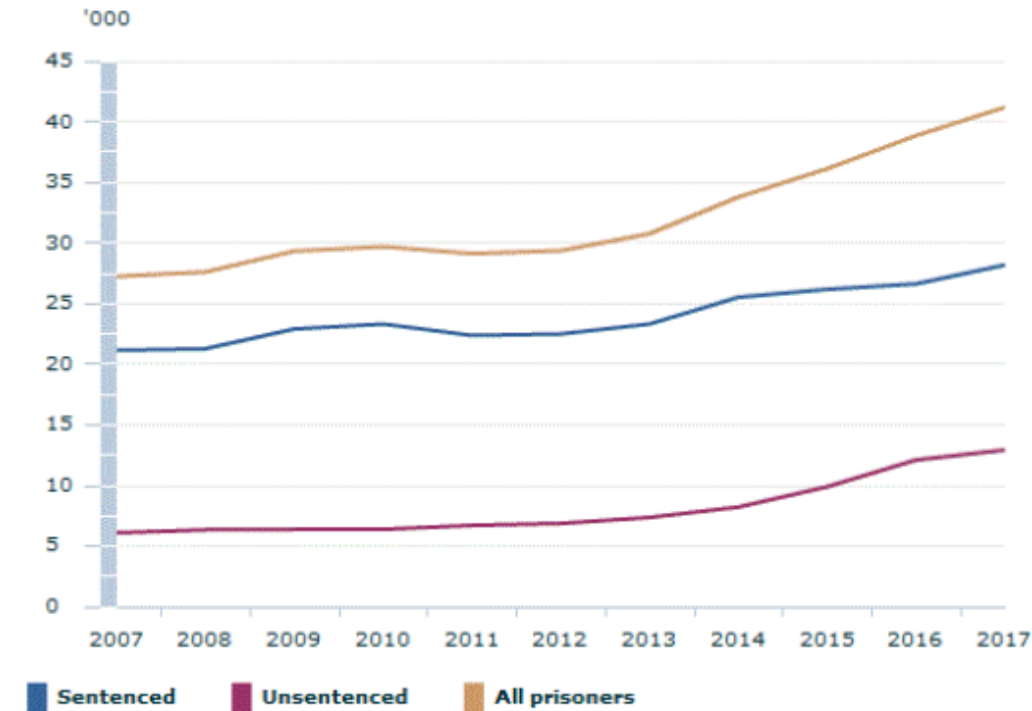
Overview

- Background and aims
- Methods
 - The National Prison Entrants Bloodborne Virus Survey
- Results
 - Sample demographics
 - Factors associated knowledge and awareness of new HCV treatments among prison entrants
- Summary and limitations

Background – Australian prisoners

Australia's adult prison population continues to grow

PRISONERS, Legal status, 30 June 2007 to 30 June 2017



- Up 6% between 2016 and 2017
- Daily avg. 41,202 prisoners
- 23% - acts to cause injury or harm
- 15% - Illicit drug offences

Save Chart Image

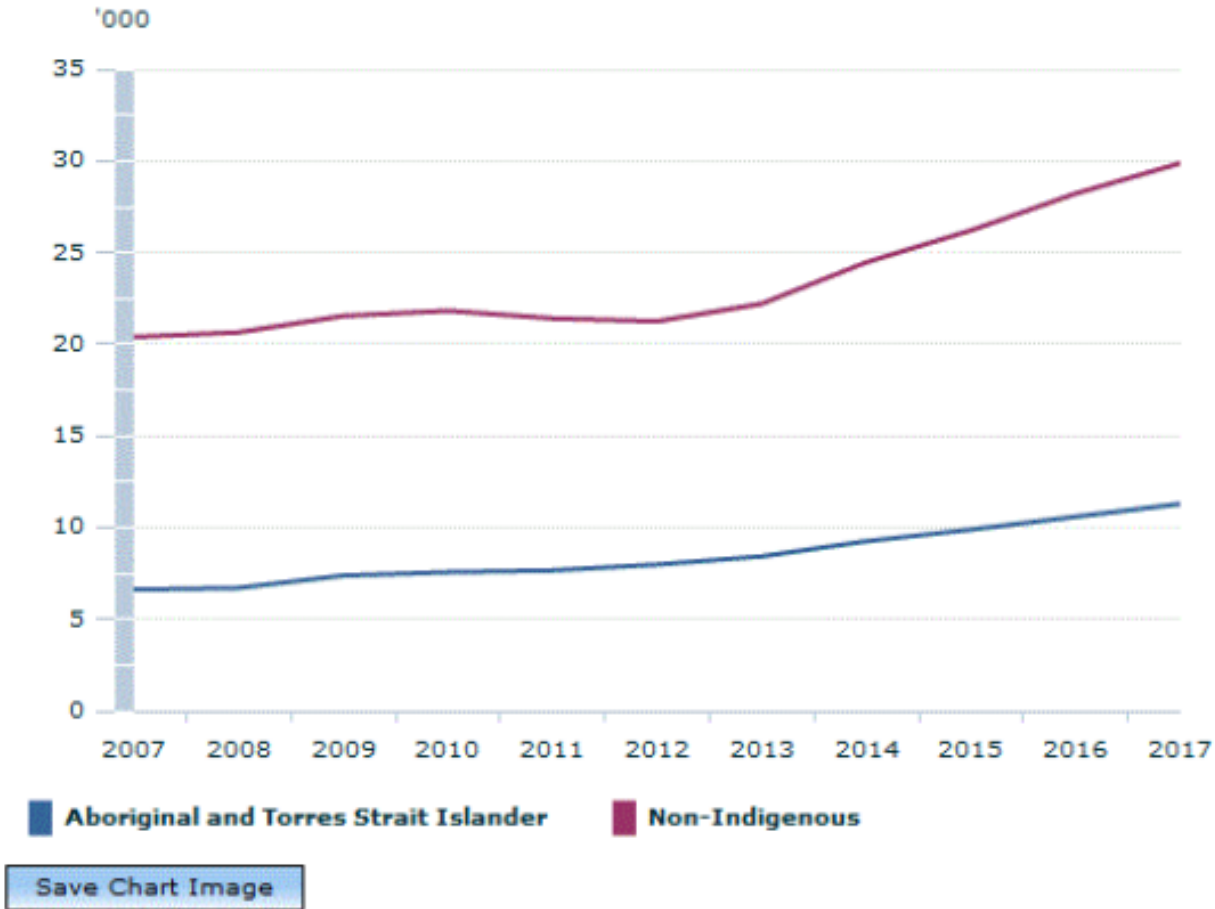
Australian Bureau of Statistics

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Source(s): *Prisoners in Australia*

Background – Indigenous prisoners

PRISONERS, Indigenous status, 30 June 2007 to 30 June 2017



Australian Bureau of Statistics

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- 27% of Australia's adult prisoners are Indigenous
- Prior imprisonment:
 - 76% Indigenous prisoners
 - 49% non-Indigenous prisoners²

Background – Prisoner health

Prisoners suffer disproportionately from poor health

- ↑ levels of mental health problems, alcohol and other drug use, smoking, chronic disease, communicable diseases³⁻⁵
- ↑ risk exposure to bloodborne viruses
 - HIV, Hepatitis B and **Hepatitis C**
 - Sharing contaminated injecting equipment, tattooing, fighting⁶



Background – Hepatitis C prevalence

The Hepatitis C virus (HCV) is a leading cause of morbidity and mortality worldwide

Prevalence

- 1-2% of the world population are living with the HCV)¹
- Of those, 71 million have chronic HCV infection¹
- Globally, HCV disproportionately affects prisoners and People Who Inject Drugs (PWID)
 - 50% of PWID have HCV²
 - 15% of prisoners have HCV³
 - **Incidence of hepatitis C among** prisoners with a history of injecting drug use have HCV 16.4 per 100 person years⁴

Background – HCV prevalence

HCV is the most prevalent BBV among **Australian prisoners**

- 22% in 2016, a decrease from 31% in 2013
- 50% of prisoners with injecting drug use history
- 66% of Indigenous prisoners with injecting drug use history

Background – HCV treatment

Symptoms can be acute or chronic

- Mild illness, through to serious illness – cirrhosis, liver cancer, death

Treatment

- No vaccine for HCV
- Recent advances in treatment have significantly changed the treatment landscape
 - Direct Acting Antiviral (DAA) medications
 - Daily oral medication for avg. 12 weeks
 - Tolerable, with few side effects
 - Highly effective (>90% cure rates)

Background – HCV treatment barriers

Prison – an ideal place for screening and treating marginalised and hard-to-access groups?

Barriers to HCV treatment in prison

- Barriers to HCV treatment are exacerbated in the prison setting^{1,2}
 - Lack of knowledge of HCV and treatment options
 - Feelings of shame, stigma and discrimination
 - Side effects (i.e weak, vulnerable in prison)
 - Health service access, and treatment continuity
 - Prison transfers, sentence length
- Organisational and societal factors remain in DAA era³

Background – HCV treatment facilitators

Prison – an ideal place for screening and treating marginalised and hard-to-access groups?

Facilitators to HCV treatment in prison/among PWID

- Health education¹⁻⁴
- Treatment knowledge associated with increased engagement with service providers⁵
- Willingness to be treated associated with higher levels of treatment knowledge⁶

Aims

1. To describe awareness of, and level of knowledge of new treatments for hepatitis C among Australian prison entrants
2. To identify what factors are associated with awareness of, and a greater level of knowledge of new treatments for hepatitis C among Australian prison entrants

Among those with HCV,

3. Describe treatment seeking and willingness to be treated

Method – The NPEBBVS

Data source: The National Prison Entrants Bloodborne Virus Survey (NPEBBVS)

- Conducted every 3 years since 2004 over a consecutive two week period
- Enhances current drug and risk behaviour surveillance in a highly marginalised population.
- Provides data on both injector and non-injector population
- Designed to be brief & incorporated into prison health reception process



Method – The NPEBBVS

- In 2016, 19 prisons from 6 Australian States and Territories participated in the NPEBBVS.
- Survey administered by prison nurses

Eligibility: All new prison entrants:

- New reception is defined as a person entering prison from the community.
- Those transferring from another prison, returning from court are not eligible.

Excluded: Unable to provide informed consent, unable to speak English, mentally unwell

Method – The NPEBBVS

Questionnaire

- Socio-demographics, including prison history
- Piercing and tattooing
- Smoking, drug use, injecting history, drug treatment history
- Injecting related behaviours
- Vaccination and testing history (Hep B, HIV, Hep C)
- Hep C treatment, willingness, knowledge & awareness
- Sexual risk taking

Pathology

- Hepatitis C, hepatitis B, HIV, Syphilis, Gonorrhoea, Chlamydia

Method – The NPEBBVS

Questionnaire

- Socio-demographics
 - Piercing and tattoo
 - Smoking, drug use
 - Injecting related be
 - Vaccination and tes
 - Hep C treatment, w
 - Sexual risk taking
1. New treatments for hep C are available (direct acting antivirals)
 2. The new hep C treatments:
 - a) require injections
 - b) have few side-effects
 - c) takes up to one year

Pathology

- Hepatitis C, hepatitis B, HIV, Syphilis, Gonorrhoea, Chlamydia

Results – Sample characteristics

	Self-report				Total	p value
	HCVab positive	HCVab negative	Unknown HCVab status	Never tested for HCV		
	N = 72	N = 189	N = 22	N=96	N = 379	
Sex (%)						
Male	60 (83)	168 (89)	19 (86)	82 (85)	329 (87)	0.553
Female	12 (17)	20 (11)	3 (14)	14 (15)	49 (13)	
Country of birth (%)						
Australian born	68 (94)	178 (95)	22 (100)	81 (84)	349 (92)	0.006
Non-Australian born	4 (6)	10 (5)	0 (0)	15 (16)	29 (8)	
Indigenous status (%)						
Indigenous	19 (26)	73 (39)	13 (62)	19 (20)	124 (33)	0.000
Non-Indigenous	53 (74)	115 (61)	8 (38)	77 (80)	253 (67)	
Age						
Median	36	32	34	32	33	0.029
IQR	30-42	26-39	26-42	24-38	26-40	
State interviewed in						
Queensland	39 (54)	65 (34)	5 (23)	38 (40)	147 (39)	0.000
Tasmania	9 (13)	10 (5)	1 (5)	9 (9)	29 (8)	
ACT	2 (3)	4 (2)	0 (0)	3 (3)	9 (2)	
South Australia	7 (10)	16 (9)	0 (0)	14 (15)	37 (10)	
Victoria	15 (21)	55 (29)	3 (14)	27 (28)	100 (26)	
Northern Territory	0 (0)	39 (21)	13 (59)	5 (5)	57 (15)	
Residential remoteness (%)						
Highly accessible	61 (88)	129 (69)	9 (41)	74 (78)	273 (73)	0.000
Moderately accessible	7 (10)	22 (12)	0 (0)	15 (16)	44 (12)	
Remote	1 (1)	36 (19)	13 (59)	6 (6)	56 (15)	

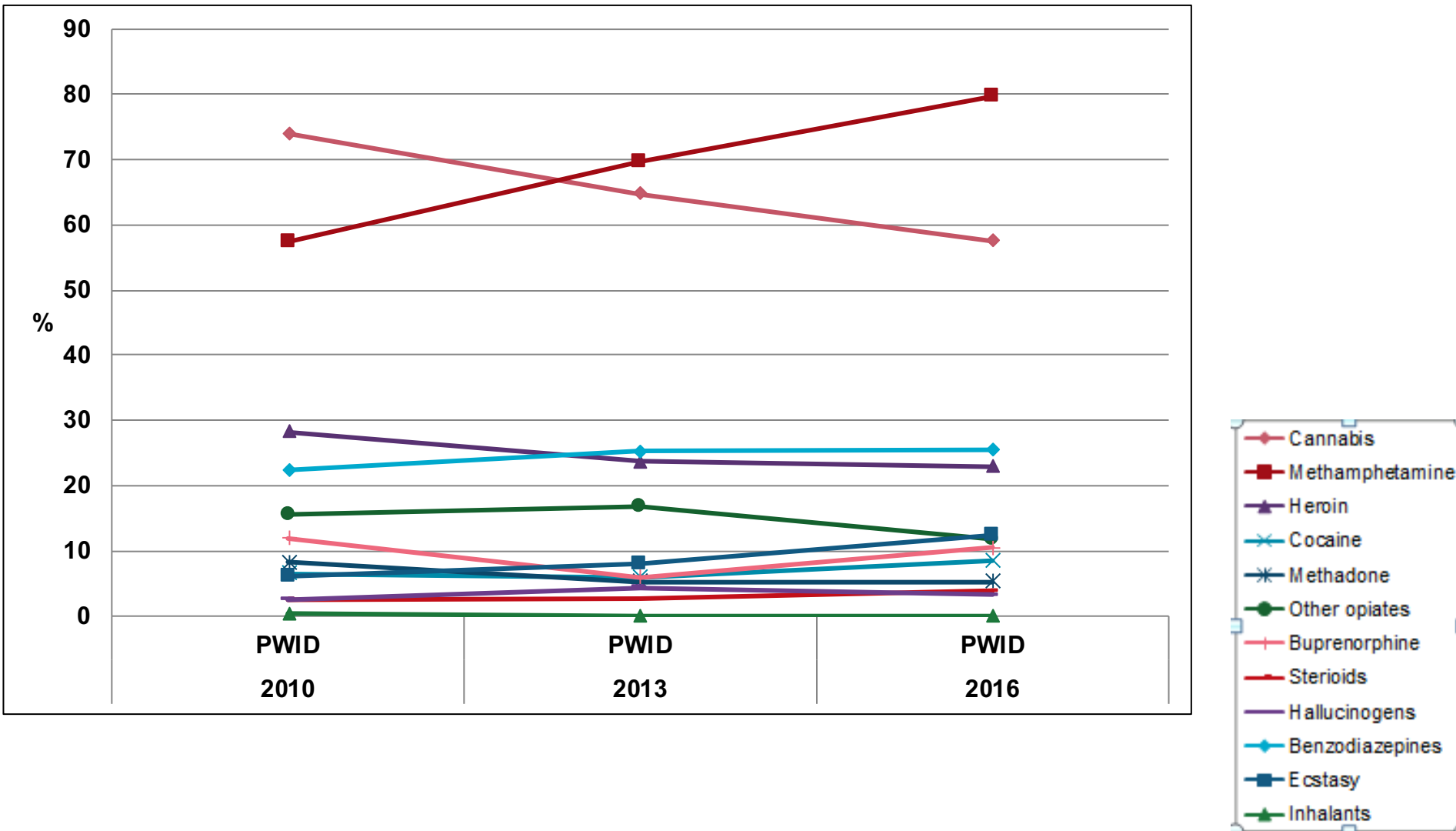
Results – Sample characteristics

	Self-report				Total N = 379	p value
	HCVab positive N = 72	HCVab negative N = 189	Unknown HCVab status N = 22	Never tested for HCV N=96		
First time in prison (%)						
Yes	6 (8)	47 (25)	7 (32)	50 (52)	110 (29)	0.000
No	66 (92)	142 (75)	15 (68)	46 (48)	269 (71)	
Lifetime imprisonments (%)						
One	4 (7)	30 (23)	3 (33)	14 (35)	51 (21)	0.000
Two to four	21 (35)	55 (42)	2 (22)	20 (50)	98 (41)	
Five to nine	18 (30)	33 (25)	3 (33)	4 (10)	58 (24)	
Ten or more	17 (28)	13 (10)	1 (11)	2 (5)	33 (14)	
Imprisonment in the past year (%)						
Yes	42 (70)	91 (68)	9 (75)	30 (75)	172 (70)	0.827
No	18 (30)	43 (32)	3 (25)	10 (25)	74 (30)	

Results – Drug use and treatment history

	Self-report				Total N = 379	p value
	HCVab positive N = 72	HCVab negative N = 189	Unknown HCVab status N = 22	Never tested for HCV N = 96		
Ever injected drugs (%)						
Yes	71 (99)	75 (40)	4 (18)	27 (28)	177 (47)	0.000
No	1 (1)	11 (60)	18 (82)	69 (72)	202 (53)	
Last drug injected (%)						
Methamphetamine	39 (60)	59 (81)	3 (75)	23 (92)	124 (74)	0.023
Heroin	21 (32)	9 (12)	1 (25)	1 (4)	32 (19)	
Other**	5 (8)	5 (7)	0 (0)	1 (4)	11 (7)	
Ever prescribed methadone (%)						
Yes	26 (36)	10 (5)	2 (9)	3 (3)	41 (11)	0.000
No	46 (64)	179 (95)	20 (91)	92 (97)	337 (89)	
Ever Naltrexone, Buprenorphine, Suboxone, or Subutex (%)						
Yes	30 (42)	8 (4)	1 (5)	3 (3)	42 (11)	0.000
No	42 (58)	181 (96)	21 (96)	92 (97)	336 (89)	
Ever other therapies (%)						
Yes	39 (56)	56 (30)	7 (32)	24 (26)	126 (34)	0.000
No	31 (44)	131 (70)	15 (68)	70 (75)	247 (66)	

Results – Last drug injected



Results – Drug use and treatment history

	Self-report				Total N = 379	p value
	HCVab positive N = 72	HCVab negative N = 189	Unknown HCVab status N = 22	Never tested for HCV N = 96		
Ever injected drugs (%)						
Yes	71 (99)	75 (40)	4 (18)	27 (28)	177 (47)	0.000
No	1 (1)	11 (60)	18 (82)	69 (72)	202 (53)	
Last drug injected (%)						
Methamphetamine	39 (60)	59 (81)	3 (75)	23 (92)	124 (74)	0.023
Heroin	21 (32)	9 (12)	1 (25)	1 (4)	32 (19)	
Other**	5 (8)	5 (7)	0 (0)	1 (4)	11 (7)	
Ever prescribed methadone (%)						
Yes	26 (36)	10 (5)	2 (9)	3 (3)	41 (11)	0.000
No	46 (64)	179 (95)	20 (91)	92 (97)	337 (89)	
Ever Naltrexone, Buprenorphine, Suboxone, or Subutex (%)						
Yes	30 (42)	8 (4)	1 (5)	3 (3)	42 (11)	0.000
No	42 (58)	181 (96)	21 (96)	92 (97)	336 (89)	
Ever other therapies (%)						
Yes	39 (56)	56 (30)	7 (32)	24 (26)	126 (34)	0.000
No	31 (44)	131 (70)	15 (68)	70 (75)	247 (66)	

Results – BBV pathology results

	Self-report				Total N = 379	p value
	HCVab positive N = 72	HCVab negative N = 189	Unknown HCVab status N = 22	Never tested for HCV N = 96		
Ever tested for HIV (%)						
Yes	63 (89)	179 (95)	20 (91)	14 (15)	276 (73)	0.000
No	8 (11)	9 (5)	2 (9)	81 (85)	100 (27)	
HCVab blood test (%)						
HCVab positive	46 (100)	9 (7)	1 (10)	4 (7)	60 (24)	0.000
HCVab negative	0 (0)	120 (93)	9 (90)	58 (94)	187 (76)	
HBV cab blood test (%)						
HBV cab positive	8 (18)	21 (17)	2 (29)	4 (7)	35 (15)	0.172
HBV cab negative	37 (82)	102 (83)	5 (71)	56 (93)	200 (85)	
Ever treated for HCV (%)						
Yes	10 (14)	n/a	n/a	n/a	10 (14)	n/a
No	62 (86)	n/a	n/a	n/a	62 (86)	

Awareness of HCV treatment

Results – Awareness of HCV treatment

	Self-report				Total	p value
	HCVab positive N = 70	HCVab negative N = 176	Unknown HCVab status N = 20	Never tested for HCV N=89		
Awareness						
New treatments for hep C are available						0.000
True (correct answer)	57 (77)	69 (39)	3 (15)	21 (24)	147 (41)	
False	2 (3)	8 (5)	1 (5)	4 (5)	15 (4)	
Unsure	14 (20)	99 (56)	16 (80)	64 (72)	193 (54)	
Awareness score*						0.000
Aware (Score = 1)	57 (77)	69 (39)	3 (15)	21 (24)	147 (42)	
Unaware (Score = 0)	16 (23)	107 (61)	17 (85)	68 (76)	208 (59)	

Factors associated with HCV treatment awareness

	n	OR	95% CI	p value
Indigenous status				
Indigenous (ref)	121			
Non-Indigenous	239	2.048	1.286-3.261	0.003
Residential remoteness				
Remote (ref)	35			
Moderately accessible	35	8.857	3.424-22.915	0.000
Highly/accessible	264	6.667	2.129-20.871	0.001
State interviewed in				
Queensland	141			
Tasmania	24	1.284	0.538-3.068	0.573
ACT	9	1.897	0.488-7.373	0.355
South Australia	32	0.594	0.256-1.377	0.225
Victoria	100	2.277	1.349-3.842	0.002
Northern Territory	55	0.186	0.075-0.463	0.000
Ever inject drugs				
No (ref)	196			
Yes	165	5.433	3.438-8.586	0.000
First time in prison				
Yes (ref)	251			
No	110	1.942	1.204-3.130	0.006
Self-report HCV status				
Negative (ref)	176			
Positive	70	5.234	2.774-9.873	0.000
Don't know	20	0.274	0.077-0.969	0.045
Never tested	89	0.479	0.269-0.851	0.012
Ever tested HCV				
Never tested	89			
Yes, < 1 year ago	163	2.377	1.331-4.244	0.003
Yes, > 1 year ago	105	3.562	1.913-6.630	0.000
Ever tested HIV				
Never tested	95			
Yes, < 1 year ago	195	1.882	1.091-3.247	0.023
Yes, > 1 year ago	104	2.332	1.294-4.202	0.005
Ever prescribed methadone				
No	322			
Yes	39	6.881	3.062-15.467	0.000
Ever other therapies				
No	235			
Yes	122	2.535	1.618-3.970	0.000

Factors associated with HCV treatment awareness

Multivariate model (adjusted Odds Ratio)

- State interview conducted
 - Prison entrants in **Victoria** were **3.91 times more likely** to be aware of new HCV treatments
- Ever inject drugs
 - Prison entrants **with a history of injecting** were **2.7 times more likely** to be aware of new HCV treatments
- Self-report HCV status
 - **Those with HCV** were **3.6 times more likely** to be aware of new HCV treatments
 - Those who **had never been tested** were **half as likely** to know about new HCV treatments

Knowledge of HCV treatment

Results – Knowledge of HCV treatment

	Self-report				Total N = 355	p value
	HCVab positive N = 70	HCVab negative N = 176	Unknown HCVab status N = 20	Never tested for HCV N=89		
Knowledge						
The new hep C treatments require injections						0.000
True	12 (17)	12 (7)	1 (5)	4 (4)	29 (8)	
False (correct answer)	29 (42)	23 (13)	1 (5)	6 (7)	59 (17)	
Unsure	28 (41)	139 (80)	18 (90)	80 (89)	265 (75)	
The new hep C treatments have few side-effects						0.000
True (correct answer)	41 (59)	16 (9)	1 (5)	6 (7)	64 (18)	
False	7 (10)	4 (2)	0 (0)	3 (3)	14 (4)	
Unsure	22 (31)	153 (88)	19 (95)	81 (90)	275 (78)	
The new hep C treatment takes up to one year						0.000
True	15 (21)	11 (6)	1 (5)	4 (4)	31 (9)	
False (correct answer)	25 (36)	15 (9)	0 (0)	5 (6)	45 (13)	
Unsure	30 (43)	147 (85)	19 (95)	81 (90)	277 (79)	
Knowledge score (out of 3)*						0.000
High knowledge (Score = 3)	16 (23)	4 (2)	0 (0)	2 (2)	22 (6)	
Some knowledge (Score = 1 or 2)	31 (45)	28 (16)	2 (10)	7 (8)	68 (19)	
No knowledge (Score = 0)	22 (32)	141 (82)	18 (90)	81 (90)	262 (74)	

Factors associated with HCV treatment knowledge

	n	OR	95% CI	p value
Indigenous status				
Indigenous (ref)	118			
Non-Indigenous	239	1.735	1.009-2.983	0.046
Age group				
17-24 years (ref)	68			
25-34 years	128	1.586	0.739-3.406	0.237
35-44 years	119	2.159	1.013-4.600	0.046
45 years +	42	2.323	0.927-5.823	0.072
Residential remoteness				
Remote (ref)	52			
Moderately accessible	37	13.542	2.828-68.846	0.001
Highly/accessible	262	9.656	2.290-40.712	0.002
State interviewed in				
Queensland (ref)	136			
Tasmania	25	1.756	0.710-4.344	0.223
ACT	9	1.561	0.370-6.589	0.545
South Australia	36	1.040	0.445-2.435	0.927
Victoria	100	1.537	0.867-2.724	0.141
Northern Territory	52	0.191	0.056-0.654	0.008
Ever inject drugs				
No (ref)	193			
Yes	165	6.917	3.931-12.170	<0.001
Lifetime imprisonments				
1 (ref)				
2-4	113			
5-9	76	2.857	1.476-5.531	0.002
10+	38	2.022	0.880-4.647	0.097
Self-report HCV status				
Negative (ref)	173			
Positive	69	9.413	4.987-17.769	0.000
Don't know	20	0.490	0.108-2.217	0.354
Never tested	90	0.490	0.223-1.077	0.076
Ever tested HCV				
Never tested	90			
Yes, < 1 year ago	164	3.508	1.627-7.565	0.001
Yes, > 1 year ago	100	4.636	2.076-10.353	0.000
Ever tested HIV				
Never tested	86			
Yes, < 1 year ago	160	3.411	1.673-6.954	0.001
Yes, > 1 year ago	100	3.312	1.549-7.080	0.002
Ever prescribed methadone				
No	319			
Yes	39	10.551	4.981-22.349	0.000
Ever other therapies				
No	231			
Yes	123	2.704	1.653-4.422	0.000
Awareness				
Not aware (ref)	208			
Aware	142	46.011	19.131-110.659	<0.001

Factors associated with HCV treatment knowledge

Multivariate model (adjusted Odds Ratio)

- Ever had any other therapies (for drug use)
 - Prison entrants **who had participated in previous therapies** were **4.6 times more likely** to have knowledge of new HCV treatments
- Ever prescribed methadone
 - Prison entrants **who had been prescribed methadone** were **3 times more likely** to have knowledge of new HCV treatments
- Self-report HCV status
 - Prison entrants **who had HCV** were **2.9 times more likely** to have knowledge of new HCV treatments

Limitations

- Limited to variables collected within the existing NPEBBVS
- Missing NSW and WA
- Awareness and knowledge questions were very brief
- Sample of prison entrants

Summary

- Less than half of the sample were aware that new treatments for hepatitis C existed
- 73% of the sample had no knowledge of what the new treatments involved
- Awareness and knowledge was higher among those who self-reported being HCV positive
- Having contact with health services for BBV testing, drug treatment & methadone increased knowledge and awareness

Summary

- Awareness \neq willingness to uptake treatment
 - Inaccurate knowledge of treatment can impacts on treatment uptake particularly if older treatments had significant side effects
- Those disengaged from health services and treatments are missing out on new treatment information
- Prison can opportunity to diagnose, educate and provide treatment for these marginalized groups
- Information and education should also target at-risk groups (those who inject drugs), not just those who have hepatitis C