

# ACCESS

**The Australian Collaboration for  
Coordinated Enhanced Sentinel Surveillance  
of Blood Borne Viruses and Sexually  
Transmitted Infections**

**2013-2018**

**BBV and STI Sentinel Surveillance Report for Victoria**

*Submitted to the Victorian Department of Health and Human Services*

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# 1 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

This report was prepared for the Victorian Department of Health and Human Services (DHHS). It describes sexually transmitted infection (STI) and blood borne virus (BBV) testing among individuals attending Victorian sites participating in the Australian Collaboration for Enhanced Sentinel Surveillance of Sexually Transmitted Infections and Blood Borne Viruses (ACCESS).

The data included in this report are from the ACCESS clinical network, which includes Melbourne Sexual Health Centre (MSHC), community health (CH) and general practice (GP) clinics for the period 2013 to 2018. Disease surveillance indicators for gay, bisexual and other men who have sex with men (GBM) were measured using data from MSHC, PRONTO! and three GP clinics specialising in gay men's health (GBM clinics). Chlamydia surveillance indicators for young people aged 15 to 29 years were measured using data from MSHC, seven GP clinics, five CH clinics and four GBM general practice clinics.

Surveillance indicators included in this report for human immunodeficiency virus (HIV), syphilis, gonorrhoea and chlamydia measure testing uptake, the proportion positive, and retesting within three, six and 12 months for GBM, disaggregated by HIV status and Pre-Exposure Prophylaxis for HIV (PrEP) use. HIV viral suppression among HIV positive GBM is also reported. For gonorrhoea and chlamydia, additional indicators include test yield by anatomical site among GBM.

Surveillance indicators for chlamydia among young people (aged 15-29 years) measure testing uptake, the proportion positive, and retesting within three, six and 12 months disaggregated by sex.

Surveillance indicators for hepatitis C virus (HCV) include testing uptake for hepatitis C diagnosis and the proportion of incident HCV infection, disaggregated by HIV status among GBM. For the first time, this report also includes HCV indicators on testing uptake and the proportion with an incident HCV infection among clinics that provide specialist health services to people who inject drugs (PWID clinics), disaggregated by sex.

## 1.2 SUMMARY

### HIV among GBM

- HIV testing and retesting significantly increased among GBM between 2013 and 2018. GBM on PrEP had notably higher testing rates compared to GBM not on PrEP (99% vs 82% in 2018).
- The proportion HIV positive among GBM decreased from 1.4% in 2013 to 0.5% in 2017 and remained stable at 0.5% in 2018.
- Among GBM not on PrEP, there was a significant decrease in the proportion HIV positive from 1.1% in 2016 to 0.7% in 2018.
- There was a significant increase in retesting for HIV within three months, six months and 12 months among GBM. However, three-month retesting among GBM on PrEP decreased between 2016 and 2018. There were significant but small increases among GBM not on PrEP retesting for HIV within three months, six months and 12 months.
- There was a significant increase in the proportion virally suppressed (<200 copies/mL) among HIV positive GBM with at least one viral load test each year, from 90% in 2013 to 98% in 2018.
- These results suggest that the rapid PrEP uptake in Melbourne and reduced community viral load is having a positive effect on HIV incidence among GBM attending GBM clinics in Melbourne.

### HCV among GBM

- HCV testing significantly increased among HIV negative GBM, from 17% in 2013 to 27% in 2018. GBM on PrEP had substantially higher testing rates compared to GBM not on PrEP (68% vs 11% in 2018). Testing rates significantly decreased between 2016 and 2018 in both groups.
- The incidence proportion for HCV among HIV negative GBM remained low at 0.1% in 2018. The proportion who were HCV ribonucleic acid (RNA) positive remained stable at 19% in 2018.
- HCV testing significantly decreased among HIV positive GBM, from 62% in 2013 to 47% in 2018.
- The incidence proportion for HCV among HIV positive GBM significantly decreased from 1.2% in 2013 to 0.9% in 2018. The proportion HCV RNA positive significantly decreased from 31% in 2013 to 11% in 2018.
- These results suggest that the enrolment of HIV positive GBM at Melbourne GBM clinics via the Co-EC study to deliver HCV treatment is having a positive effect on HIV/HCV co-infection in this population.

### HCV at PWID sites

- HCV testing significantly decreased among males attending PWID clinics, from 11% in 2013 to 8% in 2018. There was no change in the incidence proportion for HCV among males which was 0.8% in 2018 and the proportion RNA positive significantly decreased from 72% in 2013 to 33% in 2018.

- HCV testing remained stable among females attending PWID clinics and was 8% in 2018. There was no change in the incidence proportion for HCV among females which was 0.4% in 2018 and the proportion RNA positive significantly decreased from 56% in 2013 to 29% in 2018.
- These results suggest an increased uptake of direct acting antiviral treatment since the listing on the PBS in 2016.

### **STI among HIV negative GBM**

- Syphilis, gonorrhoea and chlamydia testing significantly increased among HIV negative GBM between 2013 and 2018. GBM on PrEP had substantially higher STI testing rates compared to GBM not on PrEP. While syphilis testing remained stable among both groups between 2016 and 2018, chlamydia and gonorrhoea testing rates increased among HIV negative GBM not on PrEP.
- The proportion positive for syphilis, gonorrhoea and chlamydia significantly increased among HIV negative GBM between 2013 and 2018, and for each STI the proportion positive was at least two times higher among GBM on PrEP compared to GBM not on PrEP.
- Between 2016 and 2018, among GBM on PrEP the proportion positive significantly decreased for gonorrhoea and remained stable for syphilis and chlamydia. Among GBM not on PrEP the proportion positive significantly decreased for syphilis, remained stable for gonorrhoea and increased for chlamydia.

### **STI among HIV positive GBM**

- There was no change in the syphilis testing rate among HIV positive GBM between 2013 and 2018 (93%). There was no change in the proportion syphilis positive during this period, remaining at 6.7% in 2018.
- Small but significant increases were observed in the gonorrhoea and chlamydia testing rates among HIV positive GBM between 2013 and 2018, however they remain much lower than testing rates for syphilis (56% and 55% respectively in 2018). The proportion gonorrhoea and chlamydia positive both significantly increased between 2013 and 2015/2016 and have since declined to 22.9% and plateaued to 22.6% in 2018 respectively.

### **Chlamydia among young people**

- Chlamydia testing among young people aged 15-29 years (excluding GBM) did not occur for a large majority who presented to clinics and has decreased significantly between 2013 and 2018. This decline was driven predominantly by reduced rates of testing outside of the sexual health clinic. Among those tested, there was a significant increase in the 12-monthly retesting rates among both male and female young people (from 16% and 26% in 2013 to 19% and 29% in 2018 respectively).
- The proportion chlamydia positive has increased among young females (from 8.6% in 2013 to 9.6% in 2018) and remained stable among young males (12% in 2018).

## 1.3 KEY RESULTS

**Table 1. Key results included in report, 2013-2018**

<span>▲ significant increase</span> <span>▼ significant decrease</span> <span>■ no significant increase or decrease over period</span>						
Disease	Group	Indicator	Outcome 2018	Period	Change over period	p-value
HIV	HIV	Testing rate	87%	2013 – 2018	▲	$p<0.01$
	Negative GBM	Proportion positive	0.5%	2013 – 2018	▼	$p<0.01$
	GBM	Retesting within 12 months	71%	2013 – 2018	▲	$p<0.01$
	HIV Positive GBM	Viral suppression <sup>*</sup>	98%	2013 – 2018	▲	$p<0.01$
		High levels of viraemia <sup>†</sup>	0.8%	2013 – 2018	▼	$p<0.01$
Hepatitis C	HIV	Testing rate	27%	2013 – 2018	▲	$p<0.01$
	Negative GBM	Incidence Proportion	0.1%	2013 – 2018	■	ns
		Proportion RNA positive	19%	2013 – 2018	■	ns
	HIV Positive GBM	Testing rate	47%	2013 – 2018	▼	$p<0.01$
		Incidence proportion	0.9%	2013 – 2018	▼	$p<0.05$
		Proportion RNA positive	11%	2013 – 2018	▼	$p<0.01$
	Females attending PWID clinics	Testing rate	7.7%	2013 – 2018	■	ns
		Incidence proportion	0.4%	2013 – 2018	■	ns
		Proportion RNA positive	29%	2013 – 2018	▼	$p<0.01$
	Males attending PWID clinics	Testing rate	8.2%	2013 – 2018	▼	$p<0.01$
		Incidence proportion	0.8%	2016 – 2018	▼	$p<0.05$
		Proportion RNA positive	33%	2013 – 2018	▼	$p<0.01$
Syphilis	HIV	Testing rate	85%	2013 – 2018	▲	$p<0.01$
	Negative GBM	Proportion positive	3.1%	2013 – 2018	▲	$p<0.01$
	GBM	Retesting within 12 months	71%	2013 – 2018	▲	$p<0.01$
	HIV Positive GBM	Testing rate	91%	2013 – 2018	■	ns
		Proportion positive	6.7%	2015 – 2018	▼	$p<0.01$
Gonorrhoea		Retesting within 12 months	94%	2013 – 2018	■	ns
		Testing rate	92%	2013 – 2018	▲	$p<0.01$
	HIV Negative GBM	Proportion positive	19%	2013 – 2018	▲	$p<0.01$
		Retesting within 12 months	69%	2013 – 2018	▲	$p<0.01$
		Urogenital test yield	1.8%	2013 – 2018	▼	$p<0.01$
		Rectal test yield	5.1%	2013 – 2018	▲	$p<0.01$
		Oral test yield	5.1%	2013 – 2018	▲	$p<0.01$
	HIV Positive GBM	Testing rate	56%	2013 – 2018	▲	$p<0.01$
		Proportion positive	23%	2015 – 2018	▼	$p<0.01$
		Retesting within 12 months	72%	2013 – 2018	▲	$p<0.05$
		Testing rate	91%	2013 – 2018	▲	$p<0.01$
Chlamydia	HIV Negative GBM	Proportion positive	18%	2013 – 2018	▲	$p<0.01$
		Retesting within 12 months	67%	2013 – 2018	▲	$p<0.01$
		Urogenital test yield	3.3%	2013 – 2018	▲	$p<0.05$
		Rectal test yield	8.1%	2013 – 2018	▲	$p<0.01$
		Oral test yield	1.3%	2014 – 2018	▲	$p<0.05$
	HIV Positive GBM	Testing rate	55%	2013 – 2018	▲	$p<0.01$
		Proportion positive	23%	2013 – 2018	▲	$p<0.01$
		Retesting within 12 months	73%	2013 – 2018	▲	$p<0.01$
	Young Females	Testing rate	41%	2013 – 2018	▼	$p<0.01$
		Proportion positive	9.6%	2013 – 2018	▲	$p<0.01$
	Young Males	Testing rate	55%	2013 – 2018	▼	$p<0.01$
		Proportion positive	12%	2013 – 2018	▲	$p<0.01$

<sup>\*</sup> Viral suppression < 200 copies/mL, <sup>†</sup> High levels of viraemia >10000 copies/mL  
**Note, not all reported indicators have been included in this table**

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Ballarat Community Health, Barwon Drug and Alcohol Service, Bendigo Community Health, Centre Clinic, CoHealth, Dandenong Superclinic, Docker Street General Medical Centre, EACH Social and Community Health, Flemington Medical Centre, Frankston Health, Genesis Medical Centre, Mediclinic, Melbourne Sexual Health Clinic (MSHC), Lygon Court Medical Clinic, North Richmond Community Health, Northside Clinic, Prahran Market Clinic, and PRONTO!

## 4 ACRONYMS AND ABBREVIATIONS

Ab	Antibody
ACCESS	Australian Collaboration for Coordinated Enhanced Sentinel Surveillance of Blood Borne Viruses and Sexually Transmitted Infections
BBV	Blood Borne Virus
CH	Community Health
DNA	Deoxyribonucleic acid
DHHS	Department of Health and Human Services
GBM	Gay, bisexual and other men who have sex with men
GP	General Practice
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
MSHC	Melbourne Sexual Health Centre
NRL	National Serology Reference Laboratory
PBS	Pharmaceutical Benefits Scheme
PrEP	Pre-Exposure Prophylaxis (for HIV)
PWID	People who inject drugs
RNA	Ribonucleic Acid (for HCV)
RPR	Rapid Plasma Regain (for Syphilis)
SH	Sexual Health
STI	Sexually Transmitted Infection
VL	Viral load

## 5 WHAT'S NEW IN THIS REPORT

A number of developments have occurred regarding ACCESS data management allowing for a greater breadth of information provided in this sentinel surveillance report compared to previous reports. These have been:

### **Additional clinical sites**

The ACCESS clinical network was expanded to include data from Barwon Drug and Alcohol Service, Genesis Medical Centre, Lygon Court Medical Clinic, MSHC and Mediclinic.

### **Inclusion of MSHC**

Data from Melbourne Sexual Health Centre has been included in this report. MSHC data has been reported separately for indicators related to young people and grouped with data from general practice (GP) clinics that specialise in the health of GBM (GBM clinics) and PRONTO! for indicators related to gay, bisexual and other men who have sex with men (GBM).

### **Change to retesting rate calculation**

The calculation of retesting within a specified timeframe has been calculated retrospectively for the first time in this report allowing the retesting rate for all timeframes to be reported for the entire reporting period (Section 6.4).

### **Change to defining Pre-Exposure Prophylaxis for HIV (PrEP) users**

We are now able to use prescription data within ACCESS records to supplement data from the PrEPX study to improve identification of individuals on PrEP. For more information, see section 6.3.

### **Inclusion of hepatitis C virus (HCV) indicators for new priority population**

The ACCESS clinical network has expanded through the recruitment of clinics that specialise in the health of people who inject drugs (PWID clinics) as part of the Eliminate C Partnership. Indicators relating specifically to the surveillance of HCV among this priority population have been included in the sentinel surveillance report for the first time.

### **Inclusion of incidence proportion ribonucleic acid (RNA) tests and proportion RNA positive for HCV**

The 2018 Victorian ACCESS report included indicators specifically relating to HCV for the first time. In order to continue supporting the elimination efforts in Victoria additional indicators have been included in this report. See section 6.3 and 6.4.

### **Proportion positive by anatomical site for chlamydia**

Chlamydia test outcomes by anatomical site were described among GBM at GBM clinics to better monitor disease transmission among this population.

## 6 BACKGROUND

This is the fifth annual sentinel surveillance report on blood borne viruses (BBVs) and sexually transmitted infections (STIs) in Victoria using data from ACCESS. The report was prepared for the Victorian DHHS to describe BBV and STI testing uptake and testing outcomes among priority populations (See 6.2 Priority populations) attending participating ACCESS clinical sites. This report is designed to complement Victoria's BBV and STI passive and enhanced surveillance findings from notification data.

The clinical sites contributing data to this report include MSHC, PRONTO!, community health (CH), and GP clinics. Data reported includes clinic visits (consultations), tests requested and test results for human immunodeficiency virus (HIV), HCV, syphilis, gonorrhoea and chlamydia and monitoring viral load tests for HIV. Reported trends are for the years 2013 to 2018 inclusive, unless otherwise indicated.

The data in this report may differ to those presented in previous or subsequent reports due to the availability of expanded data and associated enhancements to analytical, linkage and processing methodologies.

### 6.1 ACCESS DATA

Clinical information linking test outcomes to individual demographic characteristics from 18 Victorian ACCESS sites were analysed to report BBV and STI indicators for these infections in Victoria's priority populations (Table 2). Between 2013 and 2018, individual records from approximately 2.5 million consultations among 300,000 individuals were collated from participating ACCESS sites (Table 3).

**Table 2. Priority Populations by Clinical Network Type**

Priority populations	Clinical Network Type				
	GP Clinics	CH Clinics	GBM Clinics <sup>^</sup>	PWID Clinics	MSHC
HIV among GBM			✓		
HCV among GBM			✓		
HCV among PWID				✓	
Syphilis among GBM			✓		
Gonorrhoea among GBM			✓		
Chlamydia among GBM			✓		
Chlamydia among young people aged 15-29 years	✓	✓	✓		✓

<sup>^</sup>Includes MSHC and PRONTO! for the GBM priority population

**Table 3. Individuals and Consultations by Clinical Network included in report, 2013-2018**

ACCESS Clinical Network Type	Sites	Number of Individuals in Clinical Network	Number of Consultations in Clinical Network
General Practice	<ul style="list-style-type: none"> <li>• Frankston Healthcare</li> <li>• Dandenong Superclinic</li> <li>• Flemington Medical Centre</li> <li>• Docker Street General Medical Centre</li> <li>• MediClinic</li> <li>• Genesis Medical Centre</li> <li>• Lygon Court Medical Clinic</li> </ul>	102,344	995,886
Community Health	<ul style="list-style-type: none"> <li>• North Richmond Community Health</li> <li>• Bendigo Community Health</li> <li>• CoHealth – (8 sites)</li> <li>• EACH Social and Community Health</li> <li>• Ballarat Community Health</li> </ul>	64,745	672,643
GBM Clinics	<ul style="list-style-type: none"> <li>• Northside Clinic</li> <li>• Prahran Market Clinic</li> <li>• PRONTO!</li> <li>• The Centre Clinic</li> </ul>	43,224	570,576
SH Clinic	<ul style="list-style-type: none"> <li>• Melbourne Sexual Health Centre</li> </ul>	95,589	281,001
PWID Clinics	<ul style="list-style-type: none"> <li>• North Richmond Community Health</li> <li>• Ballarat Community Health</li> <li>• CoHealth – (8 sites)</li> <li>• Mediclinic</li> <li>• Lygon Court Medical Clinic</li> <li>• Frankston Health</li> <li>• Dandenong Superclinic</li> <li>• Flemington Medical Centre</li> <li>• Barwon Drug and Alcohol Service</li> <li>• Genesis Medical Centre</li> <li>• Docker Street General Medical</li> </ul>	146,950	1,539,715

## 6.2 PRIORITY POPULATIONS

This report includes data for the following priority populations:

### GBM

Individuals classified as GBM were males who:

- were recorded as gay or bisexual in an ACCESS clinic's patient management system, or



- have ever had a rectal swab for chlamydia or gonorrhoea at an ACCESS clinical site,<sup>1</sup> or
- were HIV positive and have ever had a syphilis test at an ACCESS clinics site.<sup>2</sup>

Note that at the GBM clinics, only a small proportion of patients could be classified on recorded sexuality alone, meaning that classification of individuals as GBM at these clinics is based largely on STI testing history criteria within the algorithm.

### **HIV positive GBM**

Individuals defined in ACCESS as HIV positive GBM:

- had a positive HIV diagnostic test result recorded at an ACCESS clinic, or
- had a HIV viral load test result in an ACCESS clinic's patient management system, and
- defined as GBM using the algorithm outlined above.

HIV status could only be determined where a history of HIV diagnostic or viral load testing occurred in a site within the ACCESS clinical network.

Reporting of STIs among GBM was stratified by HIV status. Individuals with no evidence of a positive or negative HIV test prior to consultation were classified as HIV negative at that consultation.

Individuals diagnosed with HIV were classified as HIV positive for the entire year in which their diagnosis occurred and for all subsequent years during the reporting period.

HIV negative GBM were defined in ACCESS as males with a negative HIV diagnostic test result in an ACCESS clinic's patient management system and who did not meet the criteria for HIV positive GBM. GBM with unknown HIV status were grouped with HIV negative GBM for the purposes of this report.

### **PrEP and non PrEP users**

HIV negative GBM were defined in ACCESS as on PrEP for a calendar year if they:

- Had evidence of a prescription for PrEP, in their clinical record within ACCESS in that calendar year; or
- Had evidence of a prescription for PrEP filled from their participation in the PrEPX trial in that calendar year.

### **People who inject drugs (PWID)**

While data available is yet unable to identify PWID, we report HCV indicators among clinics that provide specialist services for PWID as a way to monitor trends in this priority population.

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<sup>1</sup> Ampt F, El Hayek C, Bartnik N, et al. Anorectal swabs as a marker of male-to-male sexual exposure in STI surveillance systems. *Epidemiol. Infect.* 2017 Sep; 145(12):2530-2535.

<sup>2</sup> Algorithm developed by Burnet Institute based on syphilis epidemiology and prevalence among HIV positive gay male populations in Victoria.

## Young people

Individuals were defined in ACCESS as young people if they:

- were aged between 15 and 29 years at the time of a consultation recorded in an ACCESS clinic's patient management system, and
- were not defined as GBM using the algorithm outlined above.

Young People are only specifically reported as a priority population for chlamydia. Males presenting to GBM clinics were not included in the male counts for chlamydia surveillance indicators among young people. Females that had ever been recorded as a sex worker in an ACCESS clinic patient management system were not included in the female count for chlamydia surveillance indicators among young people.

## 6.3 DISEASE CLASSIFICATION

This report includes the following disease classifications:

### HIV

An individual was HIV positive if they had:

- a new or a previous HIV positive diagnostic test result recorded in an ACCESS clinic's patient management system, or
- evidence of HIV monitoring tests in an ACCESS clinic's patient management system, or
- evidence of antiretroviral treatment (excluding Post-Exposure Prophylaxis (for HIV) or PrEP) in an ACCESS clinic's patient management system.

Where reported, the proportion HIV positive includes new HIV infections only.

### HCV

Where reported, the HCV incidence proportion included new HCV infections only. An individual was considered to have a new infection if they had one or more of the following diagnostic test events recorded in an ACCESS clinic's patient management system:

- an HCV Antibody (Ab) positive diagnostic test result or HCV RNA positive test result following a negative HCV Ab result (i.e. primary HCV infection), or
- an HCV RNA positive diagnostic test result following a negative HCV RNA result (i.e. primary HCV infection or HCV reinfection)

### Syphilis

An individual was positive for infectious syphilis if they had one or more of the following diagnostic test events recorded in an ACCESS clinic's patient management system:

- a reactive IgM and a reactive screening test (TPPA, Ab immunoassay, rapid plasma regain (RPR)), or
- a fourfold increase in RPR titre from last test, or

- a reactive Ab immunoassay within 12 months of a previous non-reactive Ab immunoassay, or
- a high RPR titre ( $\geq 16$ ) on the first available test.

In order to account for tests of cure and possible false negative results in early infection, the following tests were not included in the count of tests or new positive syphilis cases:

- all results in the 90 days following a positive unless there was a negative test in between.
- negative results in the 30 days prior to a positive.
- negative results in the 30 days following a negative result.

Non-infectious syphilis (>2 years), syphilis of unknown duration and congenital syphilis are not included in this surveillance report.

### **Gonorrhoea**

An individual was positive for gonorrhoea if they had one or more of the following diagnostic test events recorded in an ACCESS clinic's patient management system:

- detection of *Neisseria gonorrhoeae* by deoxyribose nucleic acid (DNA) testing in a urine specimen or swab from a rectal, oral, genital or unknown site, or
- isolation of *Neisseria gonorrhoeae* organism on culture.

Note that discordant test results during the same test event for the same anatomical site were considered positive.

In order to account for tests of cure and possible false negative results in early infection, the following tests were not included in the count of tests or new positive gonorrhoea cases:

- all results in the 30 days following a positive unless there was a negative test in between.
- negative results in the 30 days prior to a positive.
- negative results in the 30 days following a negative result.

### **Chlamydia**

An individual was positive for chlamydia if they had one or more of the following diagnostic test events recorded in an ACCESS clinic's patient management system:

- detection of *Chlamydia trachomatis* by DNA testing in a urine specimen or swab from a rectal, oral, genital or unknown site.

In order to account for tests of cure and possible false negative results in early infection, the following tests were not included in the count of tests or new positive chlamydia cases:

- all results in the 45 days following a positive unless there was a negative test in between.
- negative results in the 30 days prior to a positive.
- negative results in the 30 days following a negative result.

## 6.4 REPORT INDICATORS

Table 4. Report indicators for each infection

Indicator name	Indicator description	Numerator	Denominator
<b>Patients attending</b>	Number of patients attending a consultation	Number of unique patients attending at least one consultation in a calendar year	
<b>Patients tested</b>	Number of patients tested for infection	Number of unique patients tested at least once in a calendar year	
<b>Testing rate</b>	Proportion of patients tested for infection	Number of unique patients tested at least once in calendar year	Number of unique patients attending at least one consultation in a calendar year
<b>Proportion positive<sup>‡</sup></b>	Proportion of patients who tested positive for infection	Number of unique patients with a positive test result on any test in a calendar year	Number of unique patients tested at least once in a calendar year
<b>Proportion RNA positive*</b>	Proportion of patients who tested positive for HCV RNA	Number of unique patients with a positive HCV RNA test result on any RNA test in a calendar year	Number of unique individuals tested for HCV RNA at least once in a calendar year
<b>Incidence proportion*</b>	Proportion of patients who tested positive following a negative result	Number of unique patients with a positive HCV antibody or RNA test in a calendar year with a previous negative result	Number of unique patients tested at least once in a calendar year with a previous negative result
<b>Test yield by anatomical site</b>	Proportion of all test events at each anatomical site that tested positive for infection	Number of positive test events at a given anatomical site in a calendar year	Number of test events at a given anatomical site
<b>Retesting rate</b>	Proportion of individuals retested within 3, 6 and 12 months	Number of individuals whose last test in the calendar is preceded by at least one test within the defined retesting period	Number of individuals with at least one test in the calendar year
<b>HIV viral suppression</b>	Proportion of HIV positive patients with viral load <200 copies/mL	Number of HIV-positive patients whose last viral load in a calendar year was <200 copies/mL	Number of HIV-positive patients with at least one viral load test recorded in a calendar year

<sup>‡</sup>Includes new infections only \*HCV only

Retesting periods were defined based on Australian testing guideline and included tests linked across clinics. For retesting every three and six months, the timeframe used was 121 days and 213 days, respectively, and 395 days for retesting within 12 months. Tests of cure and possible false negative results in early infection were not counted as retests.

## 6.5 ANALYSIS

All data was analysed using Stata version 14.2. Poisson regression was used to test for trend in the number of individuals tested and proportion of individuals who tested positive over the surveillance period and where trend is reported from shorter periods. A two-sample z-test was used to assess the difference in proportions between two years or two groups. Where appropriate, p-values have been provided for these tests, with values of less than 0.05 considered statistically significant.

## 7 HIV AMONG GBM

This section reports on GBM attending for HIV testing and viral load monitoring at ACCESS clinical sites between 2013 and 2018. Data from three clinics specialising in gay men's health, PRONTO! and Melbourne Sexual Health Centre (together referred to as GBM clinics) were used to report on selected indicators related to the control of HIV in Victoria. Testing is reported for HIV negative GBM and results presented are stratified by PrEP use. Viral load monitoring is reported for HIV positive GBM (See 6.4 Report indicators). For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.3.

### 7.1 HIV AMONG HIV NEGATIVE GBM

In 2018, 15,227 HIV negative GBM attended a GBM clinic and 13,190 were tested at least once for HIV (87%) (Table 5).

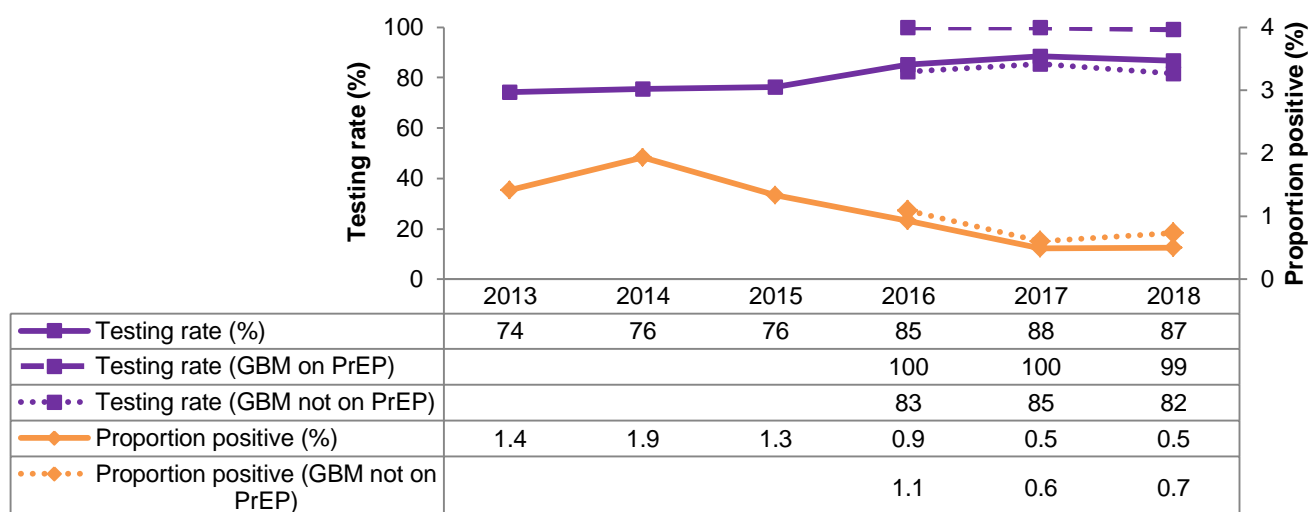
**Table 5. HIV testing rate and proportion positive among GBM at GBM clinics, 2018**

	Number of GBM attended	Number of GBM tested	HIV testing rate	Number of GBM tested HIV positive	Proportion of GBM HIV positive
	n	n	%	n	%
GBM clinics	15,227	13,190	87	66	0.5

There was a significant increasing trend in the HIV testing rate from 74% in 2013 to 87% in 2018 ( $p<0.01$ ). The testing rate was 99% for GBM on PrEP and 82% for GBM not on PrEP in 2018 ( $p<0.01$ ). Between 2016 and 2018 there was no significant change in the testing rate for GBM on PrEP ( $p=0.78$ ) and GBM not on PrEP ( $p=0.51$ ) (Figure 1).

The proportion HIV positive among GBM in 2018 at GBM clinics was 0.5% (Table 5). Between 2013 and 2018, there was a significant decreasing trend in the proportion positive for HIV at GBM clinics from 1.4% in 2013 to 0.5% in 2018 ( $p<0.01$ ). The proportion HIV positive for GBM not on PrEP was 0.7% in 2018. Between 2016 and 2018 there was no change in the proportion HIV positive for GBM for GBM not on PrEP ( $p=0.04$ ) (Figure 1).

**Figure 1. HIV testing rate and proportion positive among GBM at GBM clinics, by PrEP status, 2013-2018**



## HIV Retesting

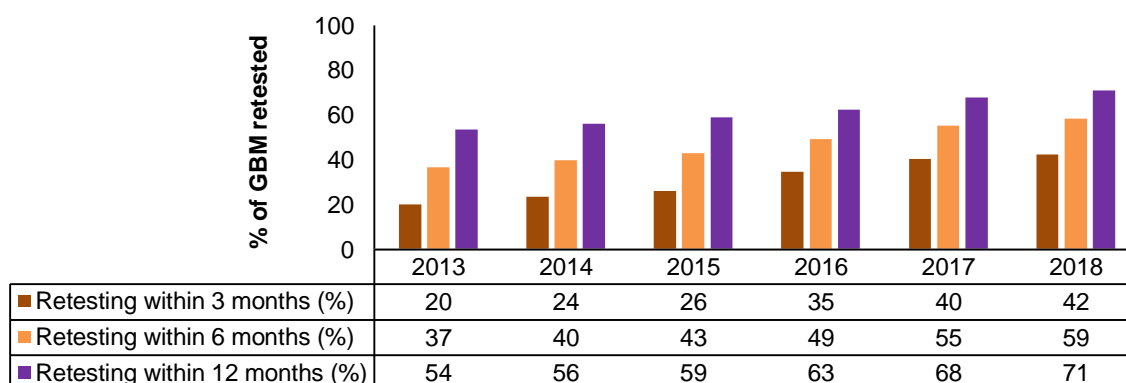
Among HIV negative GBM attending a GBM clinic for HIV testing in 2018, 42% were retested within three months (76% of GBM on PrEP compared to 26% not on PrEP), 59% were retested within six months (89% of GBM on PrEP compared to 44% not on PrEP) and 71% were retested within 12 months (94% of GBM on PrEP compared to 60% not on PrEP) (Table 6).

**Table 6. HIV negative GBM retested for HIV at GBM clinics, 2018**

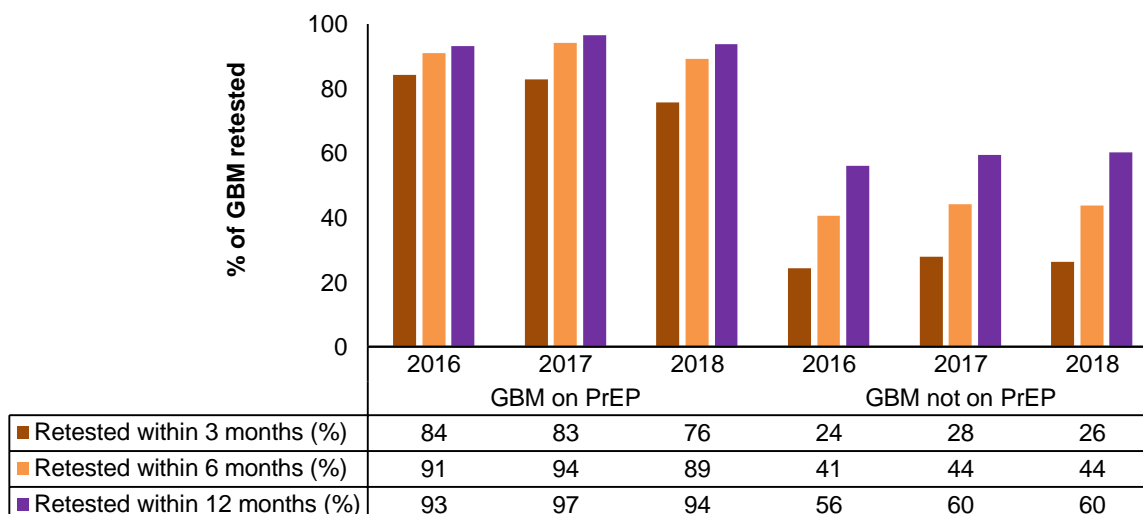
	HIV neg GBM with index test	HIV neg GBM with retest	HIV neg GBM with retest
	n	n	%
<i>Within 3 months</i>			
<b>HIV neg GBM</b>	<b>13,120</b>	<b>5,562</b>	<b>42</b>
HIV neg GBM on PrEP	4,240	3,217	76
HIV neg GBM not on PrEP	9,034	2,345	26
<i>Within 6 months</i>			
<b>HIV neg GBM</b>	<b>13,120</b>	<b>7,680</b>	<b>59</b>
HIV neg GBM on PrEP	4,240	3,782	89
HIV neg GBM not on PrEP	9,034	3,898	44
<i>Within 12 months</i>			
<b>HIV neg GBM</b>	<b>13,120</b>	<b>9,332</b>	<b>71</b>
HIV neg GBM on PrEP	4,240	3,978	94
HIV neg GBM not on PrEP	9,034	5,354	60

There was a significant increasing trend in the HIV retesting rate within three months ( $p<0.01$ ), six months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) between 2013 and 2018 (Figure 2). For GBM not on PrEP, there was a significant increase in the proportion who were retested within three months ( $p<0.01$ ), six months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) between 2016 and 2018. For GBM taking PrEP, there was a significant decreasing trend in the proportion who were retested within three months ( $p<0.01$ ) and no change in the proportion retested within six months ( $p=0.25$ ) and 12 months ( $p=0.93$ ) between 2016 and 2018 (Figure 3).

**Figure 2. HIV retesting among HIV negative GBM at GBM clinics, 2013-2018**



**Figure 3. HIV retesting among HIV negative GBM at GBM clinics, by PrEP status, 2016-2018**



## 7.2 VIRAL LOAD MONITORING OF HIV POSITIVE GBM

In 2018, among the 4,253 HIV positive GBM who had at least one viral load (VL) test at a GBM clinic, 98% achieved viral suppression at their last test in 2018. There was a significant increase in the rate of viral suppression from 2013 to 2018 at GBM clinics ( $p<0.01$ ) (Table 7).



**Table 7. Last viral load test results of HIV positive GBM by year, 2013-2018 <sup>^</sup>**

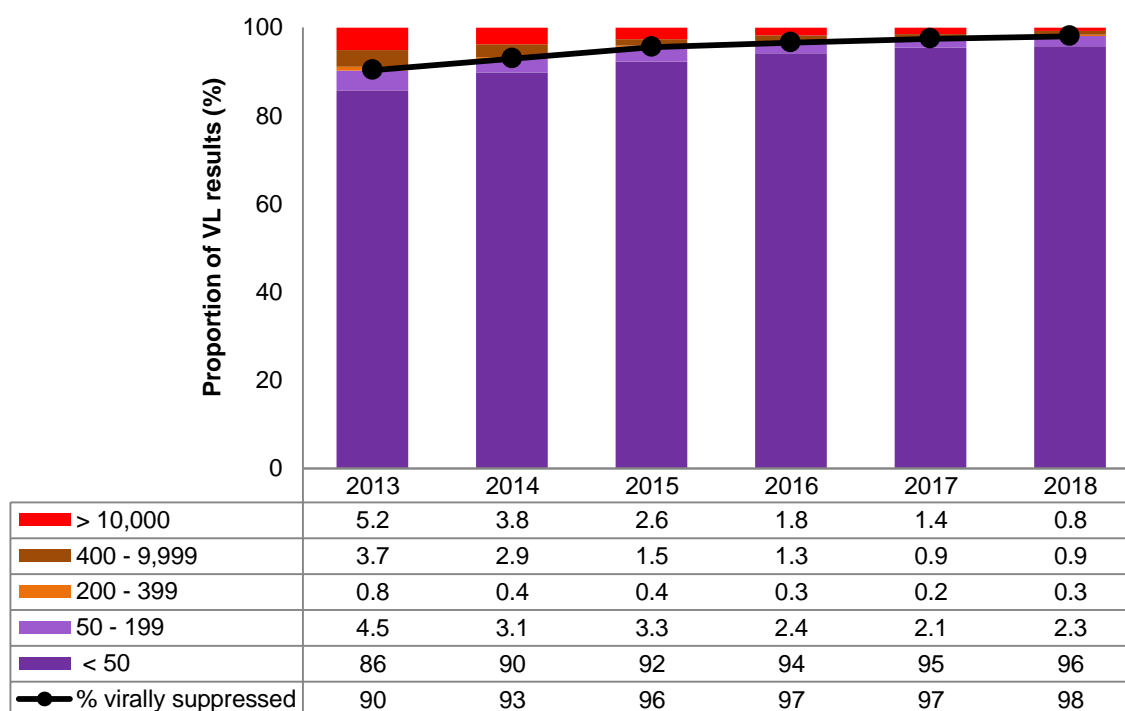
		2013	2014	2015	2016	2017	2018
HIV positive GBM tested <sup>*</sup>	n	3,963	4,223	4,167	4,384	4,302	4,253
Virally suppressed	n	3,579	3,922	3,983	4,236	4,194	4,167
Virally suppressed	%	90	93	96	97	97	98

<sup>^</sup>Virally suppressed at last annual test with VL<200 copies/mL

<sup>\*</sup>Number of individuals with a viral load test result. As results can be forwarded from external clinics, this is greater than the number of HIV positive GBM attending these clinics each year.

Over the 2013-2018 surveillance period, there was a significant decreasing trend in HIV positive GBM with levels of viraemia greater than 10,000 copies/mL, from 5.2% in 2013 to 0.8% in 2018 ( $p<0.01$ ) (Figure 4).

**Figure 4. Last viral load test result of HIV positive GBM at GBM clinics, 2013-2018**



## 7.3 SUMMARY OF RESULTS

Between 2013 and 2018 HIV testing and retesting rates increased among GBM attending GBM clinics in Melbourne, which was almost entirely due to post-2015 increases in testing among GBM on PrEP. While there has been a significant increase in the rate of three, six and 12-month HIV retesting among GBM, declines were observed in the three month retesting rate among GBM on PrEP (also seen for other STIs). This is likely due to the cessation of HIV PrEP trials post pharmaceutical benefits scheme (PBS) listing of PrEP, the possible stockpiling of PrEP medications or intermittent PrEP use.

Between 2013 and 2017, there was a significant decrease in the proportion HIV positive among GBM overall and it has remained stable in 2018. The proportion HIV positive among GBM not on PrEP declined significantly between 2016 and 2018. Also, among HIV positive GBM receiving viral load testing at GBM clinics in Melbourne, the proportion who achieved viral suppression increased significantly and the proportion with high levels of viraemia decreased significantly between 2013 and 2018.

These results suggest that the rapid PrEP uptake in Melbourne and reduced community viral load is having a positive effect on HIV incidence among GBM attending these clinics. While these results are encouraging, as HIV notifications in 'low caseload' general practices are increasing (data from HIV passive surveillance), these data may not be representative of GBM across Melbourne.

## 8 HEPATITIS C AMONG GBM

This section reports on GBM attending for HCV testing at ACCESS clinical sites between 2013 and 2018. The proportion HCV positive only includes new infections (See 6.3 Disease classification). Data from three clinics specialising in gay men's health, PRONTO! and Melbourne Sexual Health Centre (together referred to as GBM clinics) were used to report on selected indicators related to the control of HCV in Victoria, and are presented separately for HIV negative and HIV positive GBM (See 6.4 Report indicators). For HIV negative GBM, results presented are stratified by PrEP use. For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.3.

### 8.1 HCV AMONG HIV NEGATIVE GBM

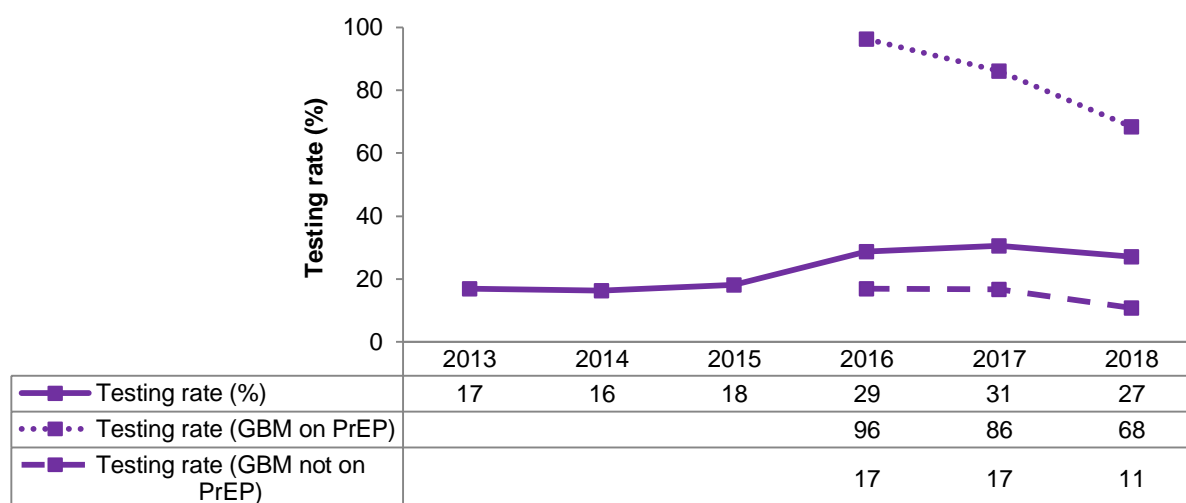
In 2018, 15,227 HIV negative GBM attended a GBM clinic and 4,121 had at least one HCV antibody or RNA test in the year (27%) (Table 8).

**Table 8. HCV testing rate and incidence proportion among HIV negative GBM, 2018**

	HIV neg GBM attended	HIV neg GBM tested	HCV testing rate*	Number of new HCV cases among HIV neg GBM	HCV incidence proportion HIV neg GBM
	n	n	%	n	%
GBM clinics	15,227	4,121	27	5	0.1

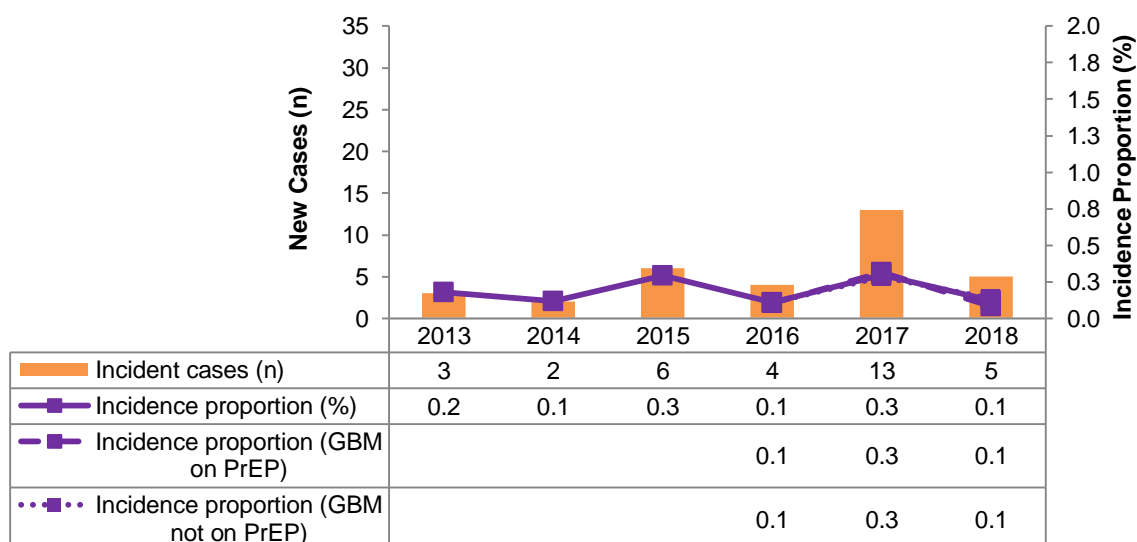
There was a significant increasing trend in the HCV (Ab or RNA) testing rate from 17% in 2013 to 27% in 2018 ( $p<0.01$ ). The testing rate at GBM clinics was 68% for GBM on PrEP and 11% for GBM not on PrEP in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was a significant decreasing trend in the testing rate for both GBM on PrEP ( $p<0.01$ ) and GBM not on PrEP ( $p<0.01$ ) (Figure 5).

**Figure 5. HCV (Ab or RNA) testing rate among HIV negative GBM at GBM clinics, by PrEP status, 2013-2018**



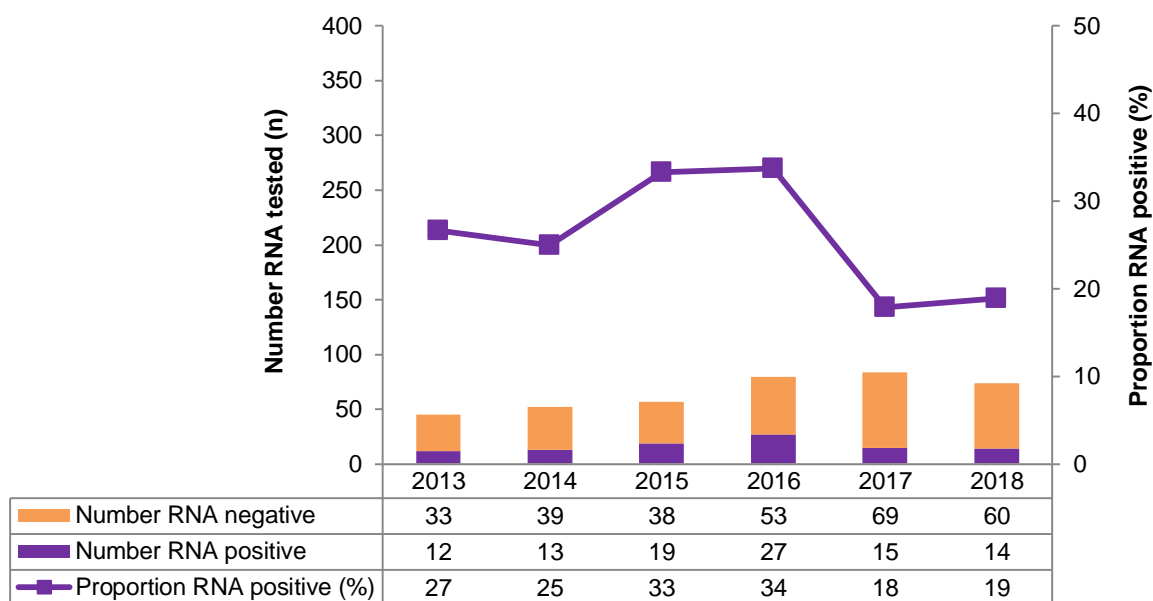
Among HIV negative GBM, five new HCV infections were detected at the GBM clinics in 2018. There was no change in the HCV incidence proportion from 0.2% in 2013 to 0.1% in 2018 ( $p=0.99$ ). The decrease in HCV incidence proportion from 0.3% in 2017 to 0.1% in 2018 was not statistically significant ( $p=0.09$ ). The incidence proportion was 0.1% for GBM on PrEP and 0.1% for GBM not on PrEP in 2018. There was no significant change in the HCV incidence proportion between 2016 and 2018 for GMB on PrEP ( $p=0.91$ ) and GBM not on PrEP ( $p=0.98$ ) (Figure 6).

**Figure 6. Number of new HCV cases and HCV incidence proportion among HIV negative GBM at GBM clinics, by PrEP status, 2013-2018**



The proportion RNA positive in 2018 was 19% for HIV negative GBM and peaked at 34% in 2016. Between 2013 and 2018 there was no significant change in the proportion RNA positive ( $p=0.18$ ). The decrease from 2016 (34%) to 2018 (19%) was not significant ( $p=0.06$ ) (Figure 7).

**Figure 7. Number of individuals RNA tested and the proportion RNA positive among HIV negative GBM at GBM clinics, 2013-2018**



## 8.2 HCV AMONG HIV POSITIVE GBM

In 2018, 3,886 HIV positive GBM attended a GBM clinic and 1,843 had at least one HCV antibody or RNA test in the year (47%) (Table 9).

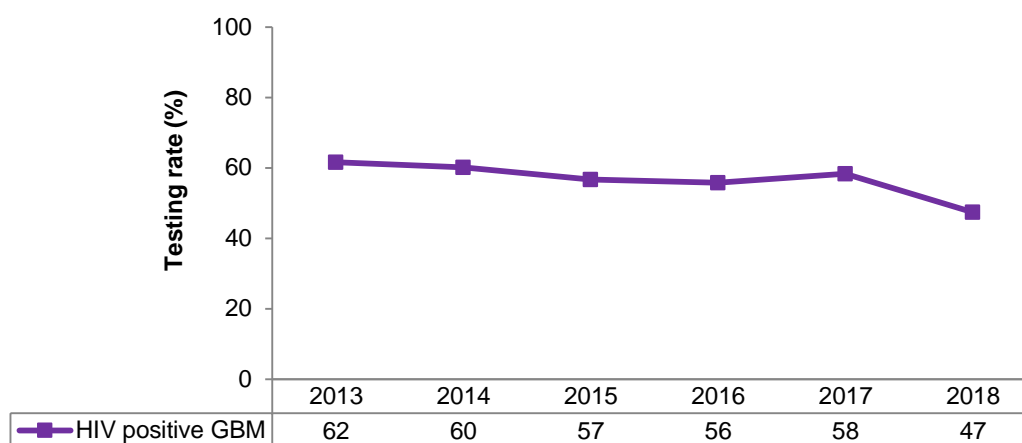
**Table 9. HCV testing rate and incidence proportion among HIV positive GBM, 2018**

	HIV pos GBM attended	HIV pos GBM tested	HCV testing Rate	Number of new HCV cases among HIV pos GBM	HCV incidence proportion HIV pos GBM
	n	n	%	n	%
GBM clinics	3,886	1,843	47	16	0.9

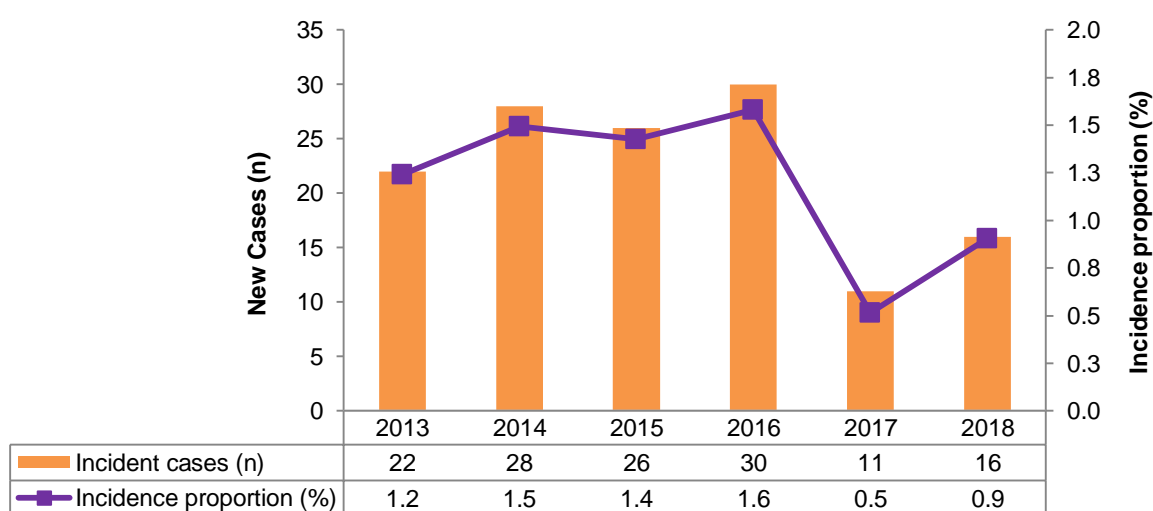
There was a significant decreasing trend in the HCV testing rate between 2013 and 2018 ( $p < 0.01$ ) in HIV positive GBM (Figure 8).

Among HIV positive GBM, 16 new HCV infections were detected at the GBM clinics in 2018. There was a significant decreasing trend in the incidence proportion from 1.2% in 2013 to 0.9% in 2018 ( $p = 0.03$ ). Of note was the decrease in incidence proportion from 1.6% in 2016 to 0.5% in 2017 ( $p < 0.01$ ). The subsequent increase to 0.9% in 2018 was not significant ( $p = 0.15$ ) (Figure 9).

**Figure 8. HCV (Ab or RNA) testing rate among HIV positive GBM at GBM clinics, 2013-2018**

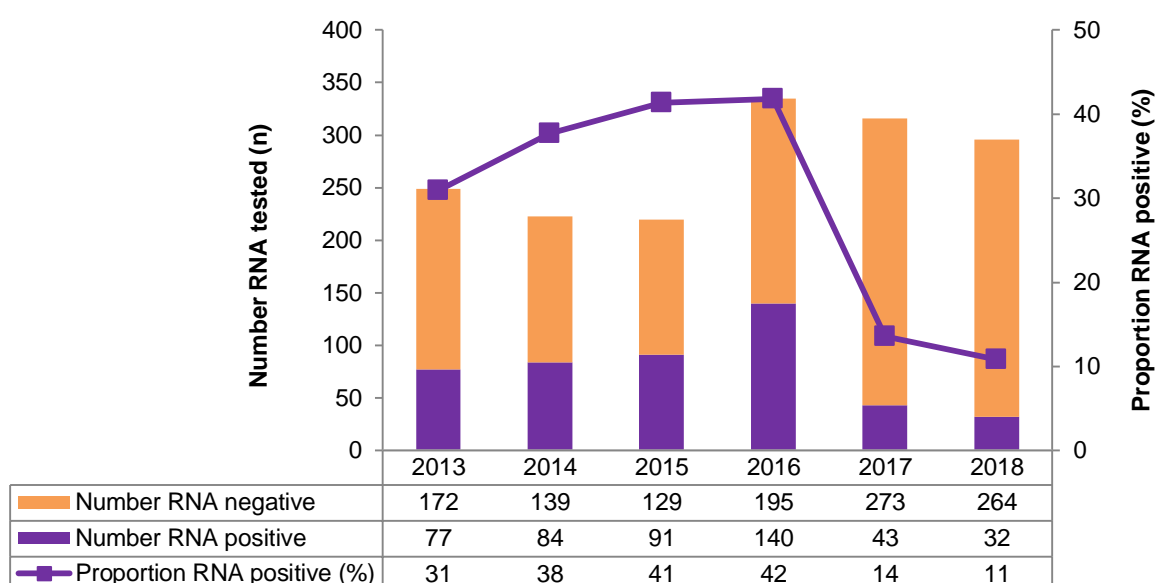


**Figure 9. Number of new cases and HCV incidence proportion among HIV positive GBM at GBM clinics, 2013-2018**



The proportion RNA positive in 2018 was 11% for HIV positive GBM and peaked at 42% in 2016. Between 2013 and 2018 there was a significant decrease in the proportion RNA positive ( $p < 0.01$ ). The decrease from 2016 (42%) to 2018 (11%) was also significant ( $p < 0.01$ ) (Figure 10).

**Figure 10. Number of individuals RNA tested and the proportion RNA positive among HIV positive GBM at GBM clinics, 2013-2018**



### 8.3 SUMMARY OF RESULTS

HCV testing among HIV negative GBM at GBM clinics substantially increased in 2016 coinciding with the commencement of HIV PrEP trial (PrEPX), before decreasing significantly between 2016 and 2018 among both GBM on PrEP and not on PrEP. The incidence proportion among HIV negative GBM has remained low and stable and while the proportion RNA positive appeared to be decreasing, this trend was not statistically significant.

Among HIV positive GBM, the HCV testing rate significantly decreased between 2013 and 2018. The incidence proportion and proportion RNA positive among HIV positive GBM decreased significantly during this time. The Co-EC study, which began in April 2016 and aimed to eliminate HIV/HCV co-infection in the GBM population, enrolled hundreds of HIV positive GBM from Melbourne GBM clinics to deliver HCV treatment. Between 2016 and 2018, the decreasing number and proportion of new infections among HIV positive GBM could be a result of this intervention.

## 9 HEPATITIS C AT PWID CLINICS

This section reports on patients attending ACCESS clinics that provide specialist health services to people who inject drugs (PWID clinics) for HCV testing between 2013 and 2018. The proportion HCV positive only includes new infections (See 6.3 Disease classification). Data from 11 ACCESS sites classified PWID clinics were used to report on selected indicators related to the control of HCV in Victoria and are presented separately for males and females. For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.3.

### 9.1 HCV AT PWID CLINICS

In 2018, a total of 67,278 individuals attended PWID clinics and 5,308 had at least one HCV antibody or RNA test in the year (7.9%) (Table 10).

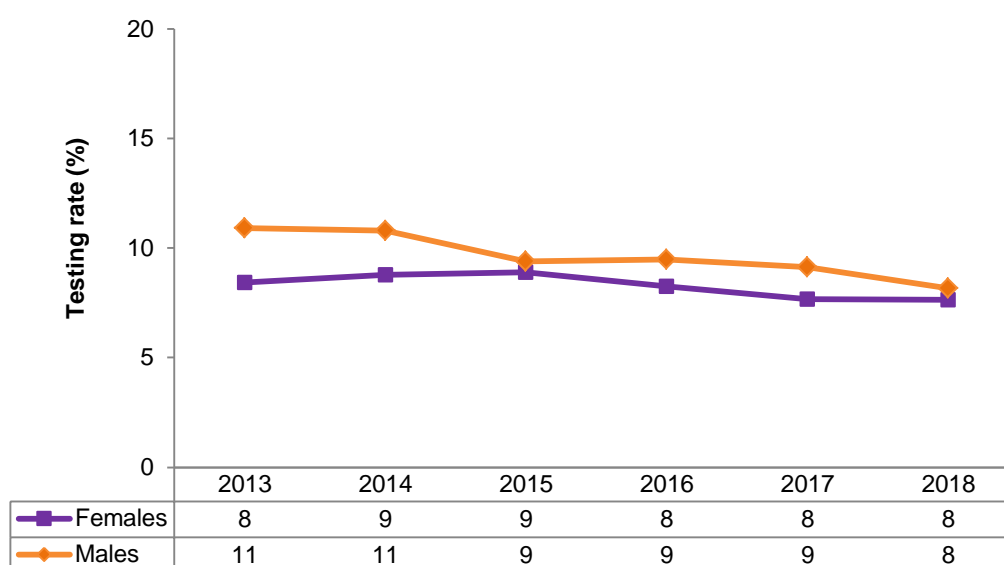
**Table 10. HCV testing rate and incidence proportion among patients attending PWID clinics, 2018**

	Number attended	Number tested (Ab or RNA)	HCV testing rate*	Number of new HCV cases	HCV incidence proportion
	n	n	%	n	%
Males	31,486	2,569	8.2	17	0.8
Females	35,792	2,739	7.7	9	0.4
<b>Total</b>	<b>67,278</b>	<b>5,308</b>	<b>7.9</b>	<b>26</b>	<b>0.6</b>

The testing rate among males in 2018 (8.2%) was significantly higher than the testing rate among females (7.7%) ( $p=0.01$ ). There was a significant decreasing trend in HCV testing at PWID clinics in males ( $p<0.01$ ) and no change in females ( $p=0.28$ ) between 2013 and 2018 (Figure 11).

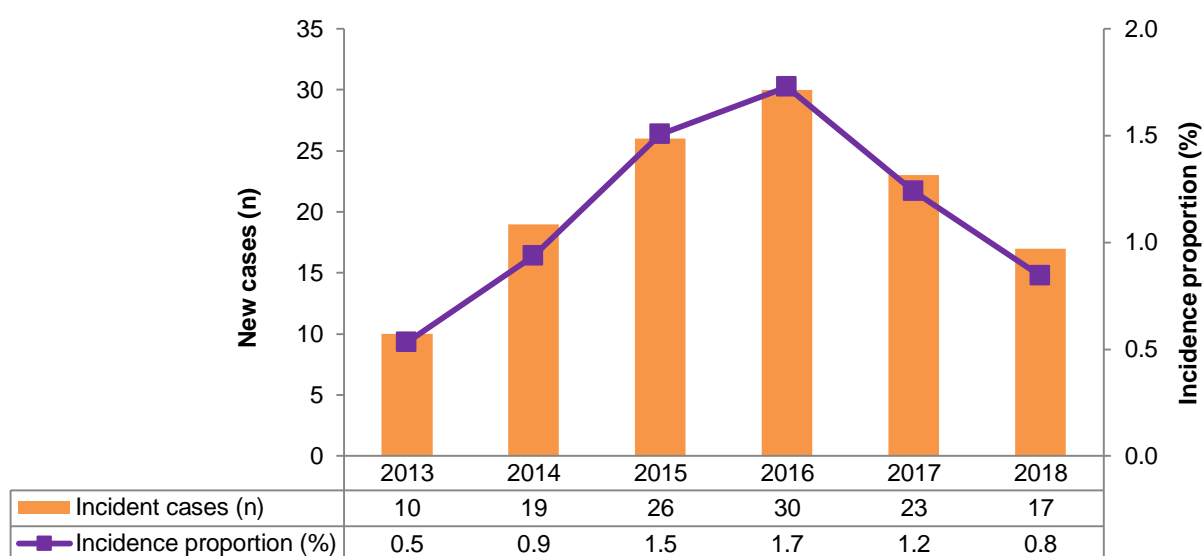


**Figure 11. HCV (Ab or RNA) testing rate by sex at PWID clinics, 2013-2018**



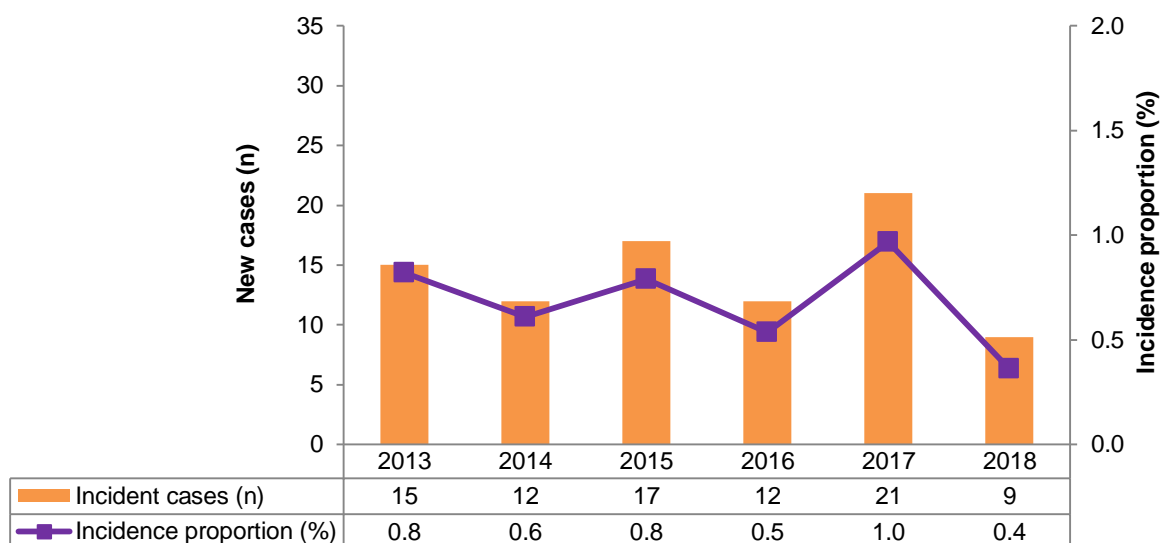
Among males attending PWID clinics, 17 new HCV infections were detected in 2018. Over the 2013-2018 reporting period, there was no change in the HCV incidence proportion in males ( $p=0.21$ ). The incidence proportion peaked in 2016 at 1.7%. There was a significant increase in the incidence proportion from 2013 to 2016 ( $p<0.01$ ). The subsequent decline in incidence proportion from 1.7% in 2016 to 0.8% in 2018 was significant ( $p=0.02$ ) (Figure 12).

**Figure 12. Number of new cases and incidence proportion among males attending PWID clinics, 2013-2018**



Among females attending PWID clinics, nine new HCV infections were detected in 2018. Over the 2013-2018 reporting period, there was no change in the HCV incidence proportion in females ( $p=0.28$ ) (Figure 13).

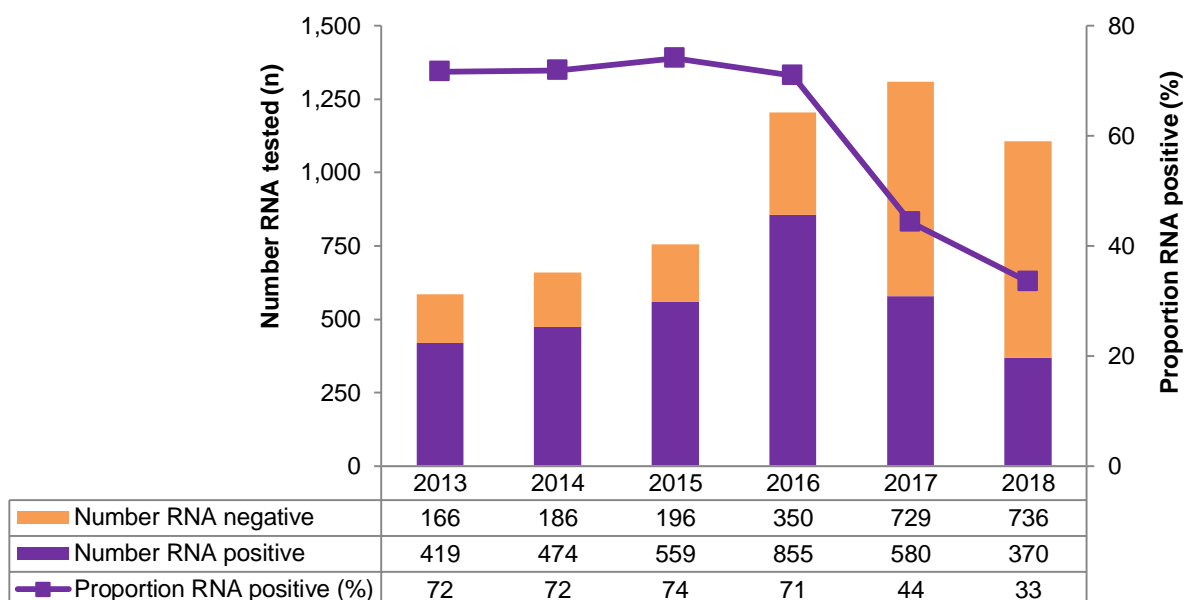
**Figure 13. Number of new cases and HCV incidence proportion among females attending PWID clinics, 2013-2018**



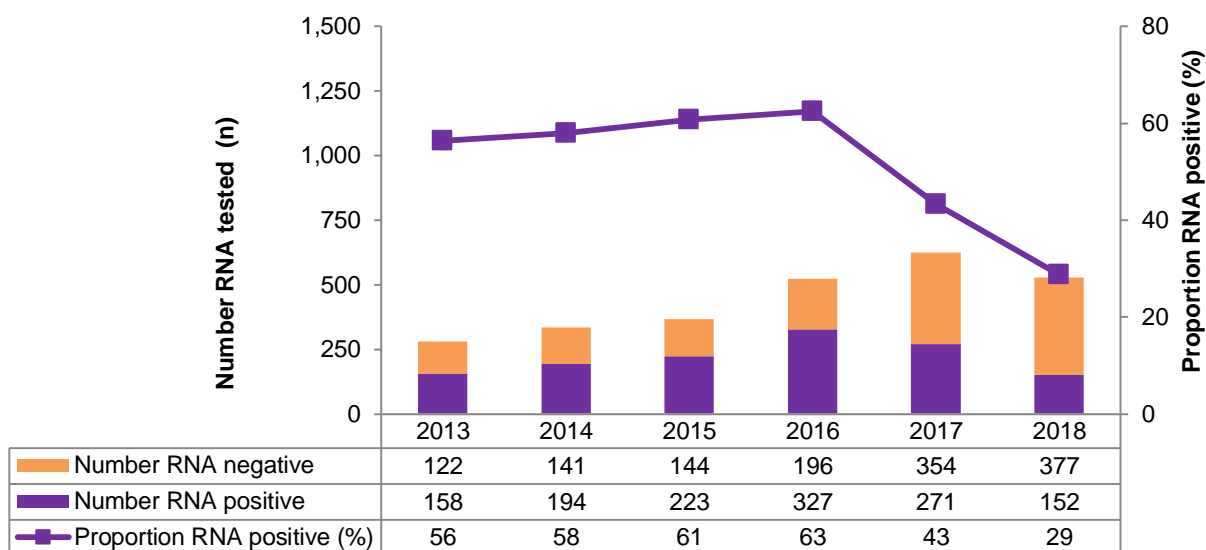
The proportion RNA positive in 2018 was 33% among males attending PWID clinics and peaked at 71% in 2016. Between 2013 and 2018 there was a significant decrease in the proportion RNA positive ( $p < 0.01$ ). The decrease from 2016 (71%) to 2018 (33%) was also significant ( $p < 0.01$ ) (Figure 14).

The proportion RNA positive in 2018 was 29% among females attending PWID clinics and peaked at 63% in 2016. Between 2013 and 2018 there was a significant decrease in the proportion RNA positive ( $p < 0.01$ ). The decrease from 2016 (63%) to 2018 (29%) was also significant ( $p < 0.01$ ) (Figure 15).

**Figure 14. Number of RNA tests and the proportion RNA positive among among males attending PWID clinics, 2013-2018**



**Figure 15. Number of individuals RNA tested and the proportion RNA positive among females attending PWID clinics, 2013-2018**



## 9.2 SUMMARY OF RESULTS

HCV testing among males attending PWID clinics significantly decreased from 2013 to 2018. During this time, there was no change in the incidence proportion among males however the proportion RNA positive significantly decreased.

Among females attending PWID clinics, HCV testing remained stable between 2013 and 2018. During this time, there was no change in the incidence proportion however the proportion RNA positive significantly decreased.

Encouragingly, since the listing of direct acting antiviral treatment on the PBS in 2016, the proportion RNA positive has declined significantly among both males and females attending PWID clinics, suggesting an increased uptake of treatment.

## 10 SYPHILIS AMONG GBM

This section reports on GBM attending for syphilis testing at ACCESS clinical sites between 2013 and 2018. The proportion syphilis positive only includes infectious syphilis (See 6.3 Disease classification). Data from three clinics specialising in gay men's health, PRONTO! and Melbourne Sexual Health Centre (together referred to as GBM clinics) were used to report on selected indicators related to the control of syphilis in Victoria, and are presented separately for HIV negative and HIV positive GBM (See 6.4 Report indicators). For HIV negative GBM, results presented are stratified by PrEP use. For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.3.

### 10.1 SYPHILIS AMONG HIV NEGATIVE GBM

In 2018, 15,227 HIV negative GBM attended a GBM clinic and 12,924 were tested at least once for syphilis (85%) (Table 11).

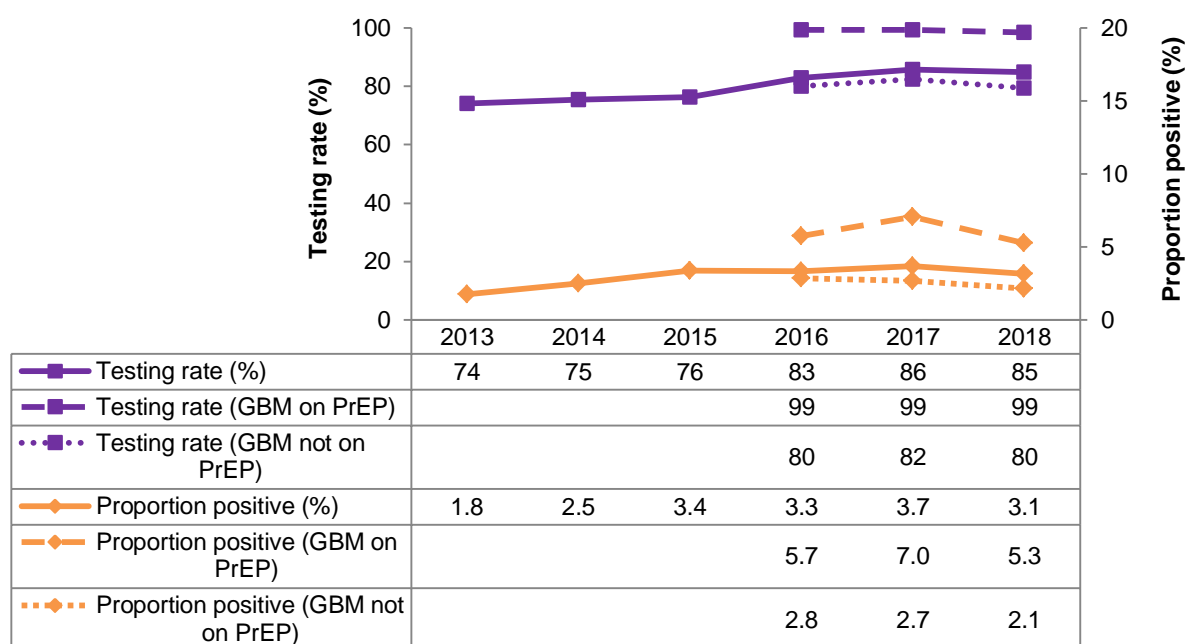
**Table 11. Syphilis testing rate and proportion positive among HIV negative GBM by service type, 2018**

	HIV neg GBM attended	HIV neg GBM tested	Syphilis testing rate	HIV neg GBM tested syphilis positive	Proportion HIV neg GBM syphilis positive
	n	n	%	n	%
GBM clinics	15,227	12,924	85	407	3.1

There was a significant increasing trend in the syphilis testing rate from 74% in 2013 to 85% in 2018 ( $p<0.01$ ). The testing rate at GBM clinics was 99% for GBM on PrEP and 80% for GBM not on PrEP in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was no statistically significant change in the testing rate for both GBM on PrEP ( $p=0.71$ ) and GBM not on PrEP ( $p=0.69$ ) (Figure 16).

The proportion syphilis positive among HIV negative GBM in 2018 at GBM clinics was 3.1% (Table 11). The proportion syphilis positive for GBM on PrEP was 5.3% compared to 2.1% for GBM not on PrEP ( $p<0.01$ ). Between 2013 and 2018, there was a significant increasing trend in the proportion syphilis positive among HIV negative GBM from 1.8% in 2013 to 3.1% in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was no change in the proportion syphilis positive for GBM on PrEP ( $p=0.17$ ) and a significant decrease in the proportion syphilis positive for GBM not on PrEP ( $p<0.01$ ) (Figure 16).

**Figure 16. Syphilis testing rate and proportion positive among HIV negative GBM at GBM clinics, by PrEP status, 2013-2018**



## Syphilis Retesting

Among HIV negative GBM attending a GBM clinic for syphilis testing in 2018, 42% were retested within three months (75% of GBM on PrEP compared to 26% not on PrEP), 59% were retested within six months (89% of GBM on PrEP compared to 44% not on PrEP) and 71% were retested within 12 months (93% of GBM on PrEP compared to 61% not on PrEP) (Table 12).

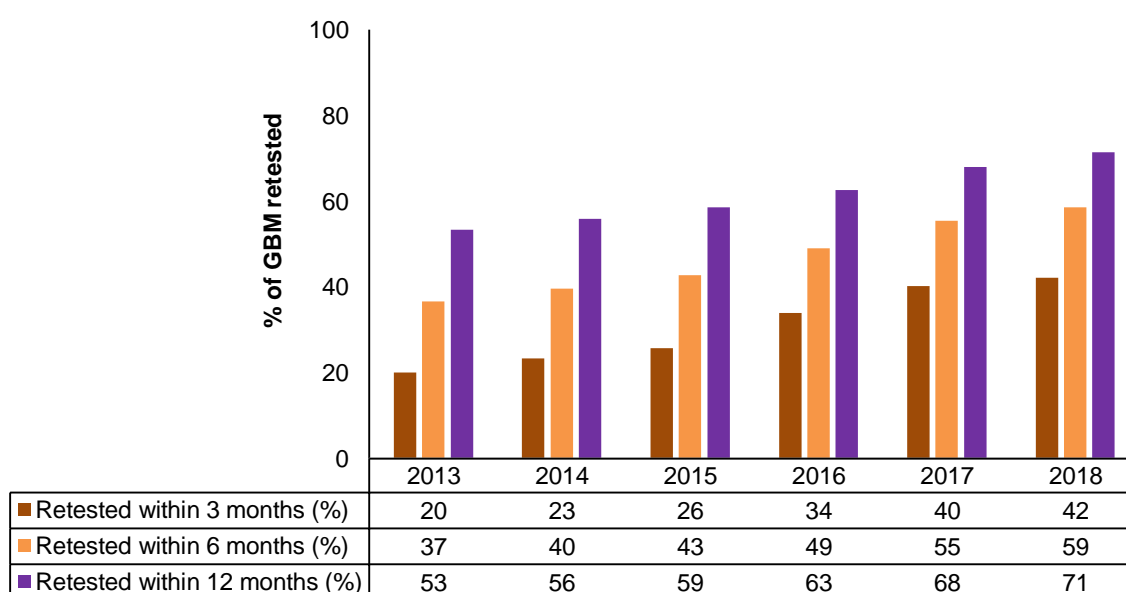
**Table 12. HIV negative GBM retested for syphilis at GBM clinics, 2018**

	HIV neg GBM with index test	HIV neg GBM with retest	HIV neg GBM with retest
	n	n	%
<i>Within 3 months</i>			
<b>HIV neg GBM</b>	<b>12,923</b>	<b>5,463</b>	<b>42</b>
HIV neg GBM on PrEP	4,223	3,160	75
HIV neg GBM not on PrEP	8,700	2,303	26
<i>Within 6 months</i>			
<b>HIV neg GBM</b>	<b>12,923</b>	<b>7,585</b>	<b>59</b>
HIV neg GBM on PrEP	4,223	3,739	89
HIV neg GBM not on PrEP	8,700	3,846	44
<i>Within 12 months</i>			
<b>HIV neg GBM</b>	<b>12,923</b>	<b>9,228</b>	<b>71</b>
HIV neg GBM on PrEP	4,223	3,946	93
HIV neg GBM not on PrEP	8,700	5,282	61

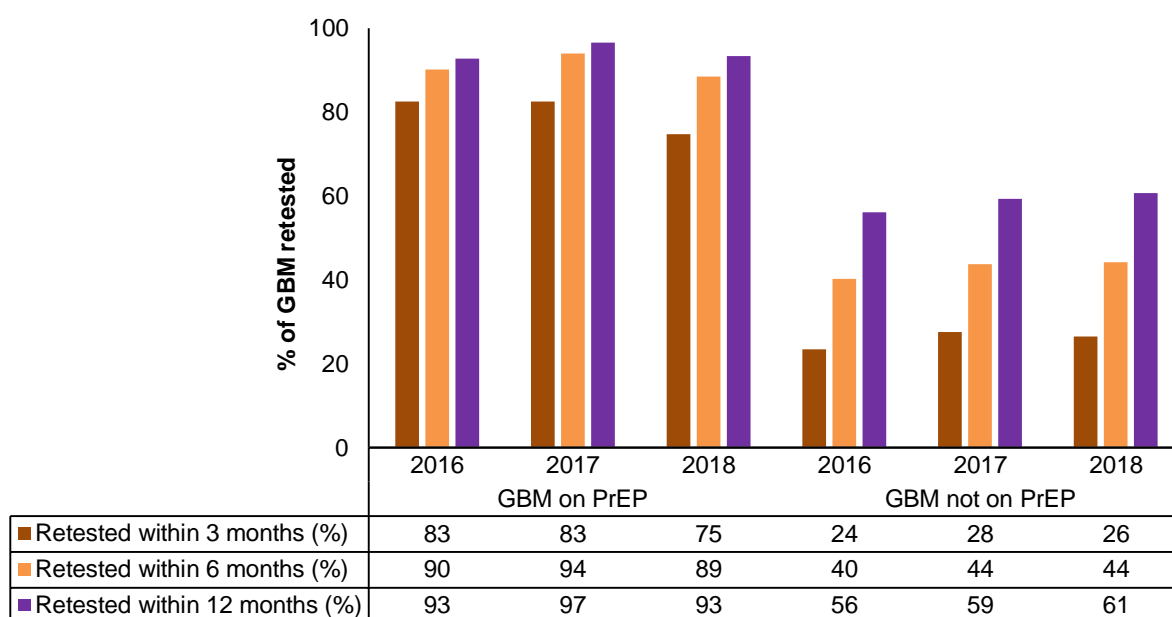
Over the 2013-2018 reporting period, there was a significant increasing trend in the syphilis retesting rate within three months ( $p<0.01$ ), six months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) (Figure 17).

For GBM on PrEP, there was a significant decrease in the proportion who were retested within three months ( $p<0.01$ ) between 2016 and 2018 and no change in the proportion who were retested within six months ( $p=0.26$ ) and 12 months ( $p=0.93$ ). For GBM not on PrEP, there was a significant increase in the proportion retested within 3 months ( $p<0.01$ ), 6 months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) between 2016 and 2018 (Figure 18).

**Figure 17. Syphilis retesting among HIV negative GBM at GBM clinics, 2013-2018**



**Figure 18. Syphilis retesting among HIV negative GBM at GBM clinics, by PrEP status, 2016-2018**



## 10.2 SYPHILIS AMONG HIV POSITIVE GBM

In 2018, 3,886 HIV positive GBM attended a GBM clinic and 3,637 were tested at least once for syphilis (94%) (Table 13).

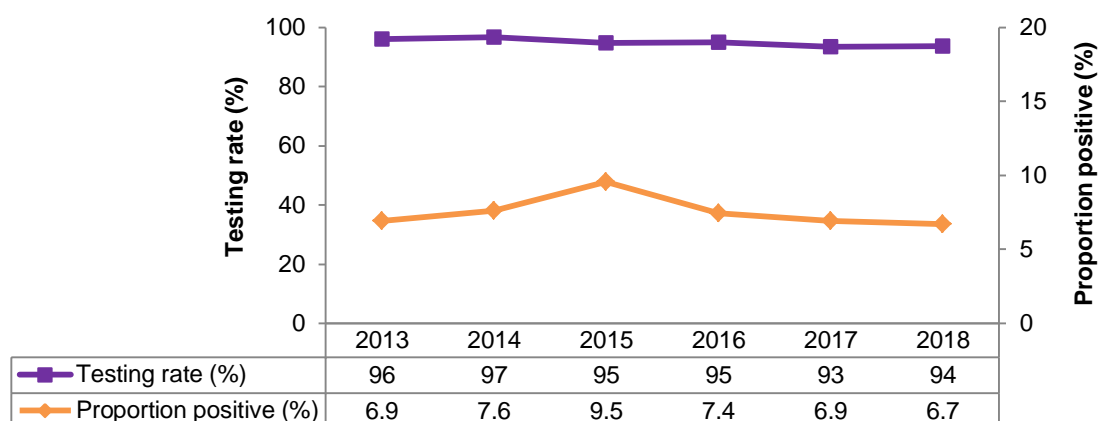
**Table 13. Syphilis testing rate and proportion positive among HIV positive GBM, 2018**

	HIV pos GBM attended	HIV pos GBM tested	Syphilis testing Rate	HIV pos GBM tested syphilis positive	Proportion HIV pos GBM syphilis positive
	n	n	%	n	%
GBM clinics	3,886	3,637	94	244	6.7

There was no change in the syphilis testing rate among HIV positive GBM between 2013 and 2018 ( $p=0.12$ ) (Figure 19).

The proportion syphilis positive among HIV positive GBM in 2018 at GBM clinics was 6.7% (Table 13). Between 2013 and 2018, there was no change in the proportion syphilis positive overall among HIV positive GBM ( $p=0.12$ ), however a significant decrease in proportion syphilis positive was observed from the peak proportion syphilis positive of 9.5% in 2015 to 6.7% in 2018 ( $p<0.01$ ) (Figure 19).

**Figure 19. Syphilis testing rate and proportion positive among HIV positive GBM at GBM clinics, 2013-2018**



## Syphilis Retesting

Among HIV positive GBM attending GBM clinics for syphilis testing in 2018, 27% were retested within three months, 73% were retested within six months and 93% were retested within 12 months (Table 14).

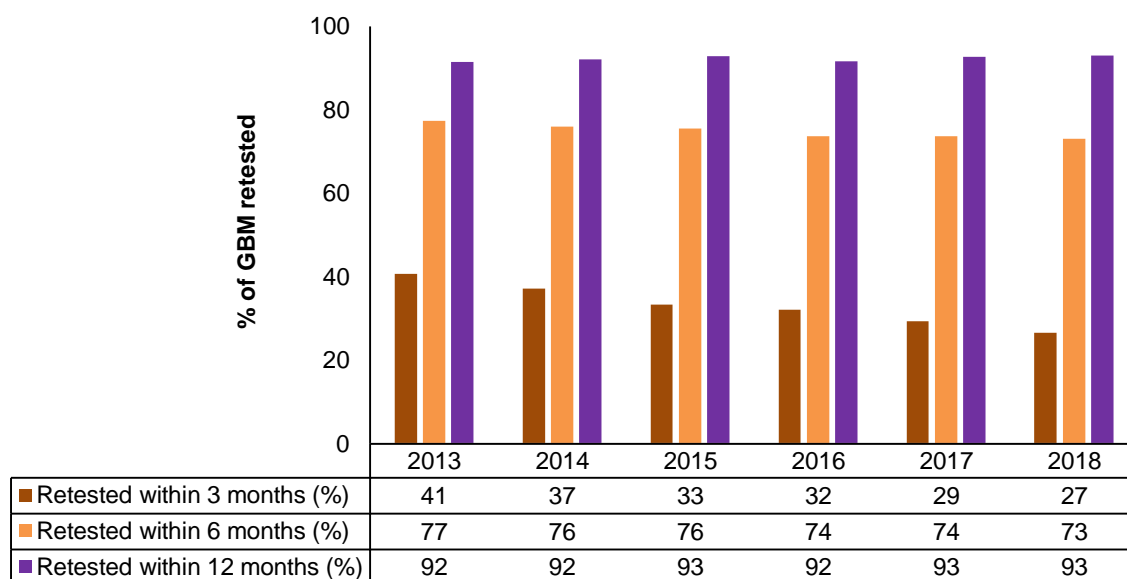
**Table 14. HIV positive GBM retested for syphilis at GBM clinics, 2018**

	HIV pos GBM with index test	HIV pos GBM with retest	HIV pos GBM with retest
	n	n	%
Within 3 months	3,637	969	27
Within 6 months	3,637	2,658	73
Within 12 months	3,637	3,385	93

There was a significant decreasing trend in the syphilis retesting rate within three months ( $p < 0.01$ ) and six months ( $p = 0.02$ ) and no change in the syphilis retesting rate within 12 months ( $p = 0.58$ ) between 2013 and 2018 (Figure 20).



**Figure 20. Syphilis retesting among HIV positive GBM at GBM clinics, 2013-2018**



## 10.3 SUMMARY OF RESULTS

Between 2013 and 2018 syphilis testing rates increased among HIV negative GBM in Melbourne, which was almost entirely due to post-2015 increases in testing among GBM on PrEP. While there has been a significant increase in the rate of three, six and 12-month syphilis retesting among GBM, declines were observed in the three month retesting rate among GBM on PrEP (also seen for HIV). Encouragingly there were small but significant increases in the rate of three, six and 12-month retesting among GBM not on PrEP between 2016 and 2018.

Proportion syphilis positive increased among HIV negative GBM between 2013 and 2018 and among GBM on PrEP the proportion syphilis positive was more than twice that of GBM not on PrEP. This is likely due to the high testing and retesting rates among GBM on PrEP (increasing opportunities for the detection of new cases), increased serodiscordant sex with HIV positive GBM (who have a comparatively higher syphilis prevalence) and high risk sexual behaviour reported by GBM on PrEP.

Among HIV positive GBM, the high 12 month syphilis retesting remained stable, however three and six-monthly retesting decreased over time. Recent changes in HIV management guidelines to recommend fewer clinical visits for HIV positive individuals when they are on antiretroviral treatment and otherwise well, has likely contributed to the decline in syphilis testing at three and six months.

The decrease in the proportion syphilis positive that has been observed since 2015 in HIV positive GBM may reflect a reduction in syphilis transmission with increased serodiscordant sex with HIV negative GBM (who in Melbourne have a lower syphilis prevalence) since the scale-up of HIV PrEP in Melbourne.

# 11 GONORRHOEA AMONG GBM

This section reports on GBM attending for gonorrhoea testing at ACCESS clinical sites between 2013 and 2018. Data from three clinics specialising in gay men's health, PRONTO! and Melbourne Sexual Health Centre (together referred to as GBM clinics) were used to report on selected indicators related to the control of gonorrhoea in Victoria and presented separately for HIV negative and HIV positive GBM. For HIV negative GBM, results presented are stratified by PrEP use. For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.3.

## 11.1 GONORRHOEA AMONG HIV NEGATIVE GBM

In 2018, 15,227 HIV negative GBM attended a GBM clinic and 13,972 (92%) were tested at least once for gonorrhoea (Table 15).

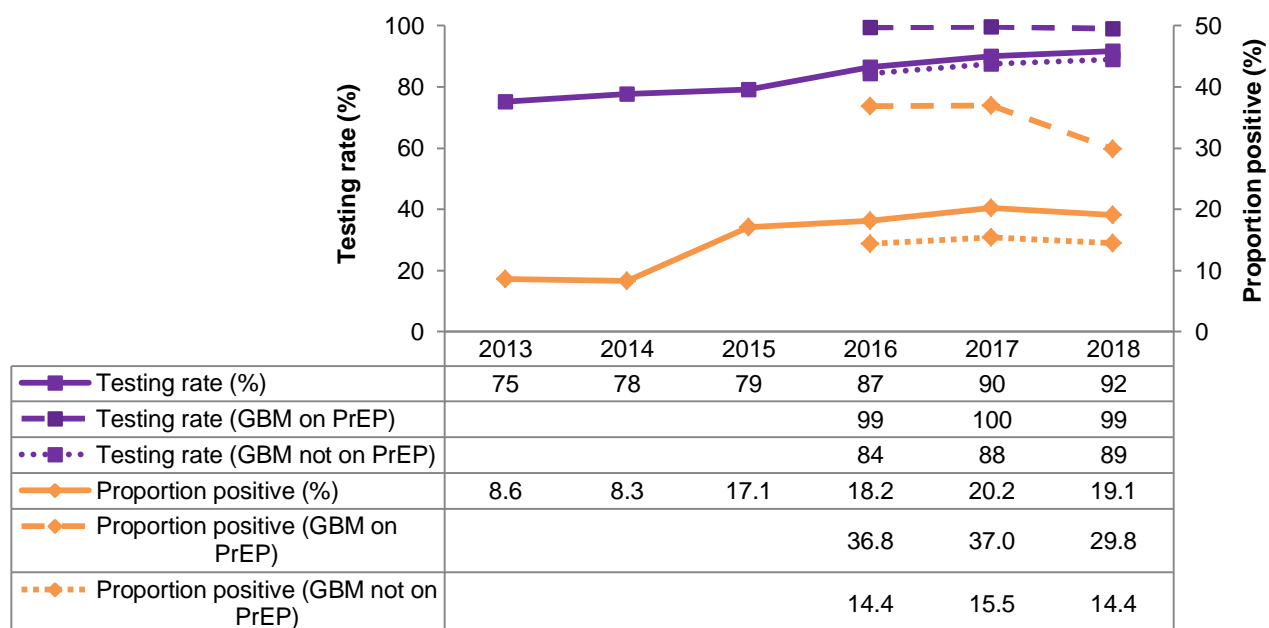
**Table 15. Gonorrhoea testing rate and proportion positive among HIV negative GBM at GBM clinics, 2018**

	HIV neg GBM attended	HIV neg GBM tested	Gonorrhoea testing rate	HIV neg GBM tested gonorrhoea positive	Proportion HIV neg GBM gonorrhoea positive
	n	n	%	n	%
GBM clinics	15,227	13,972	92	2,671	19.1

There was a significant increasing trend in the gonorrhoea testing rate from 75% in 2013 to 92% in 2018 ( $p<0.01$ ). The testing rate was 99% for GBM on PrEP and 89% for GBM not on PrEP in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was a significant increase in the testing rate for GBM not on PrEP ( $p<0.01$ ) and no significant change for GBM on PrEP ( $p=0.89$ ) (Figure 21).

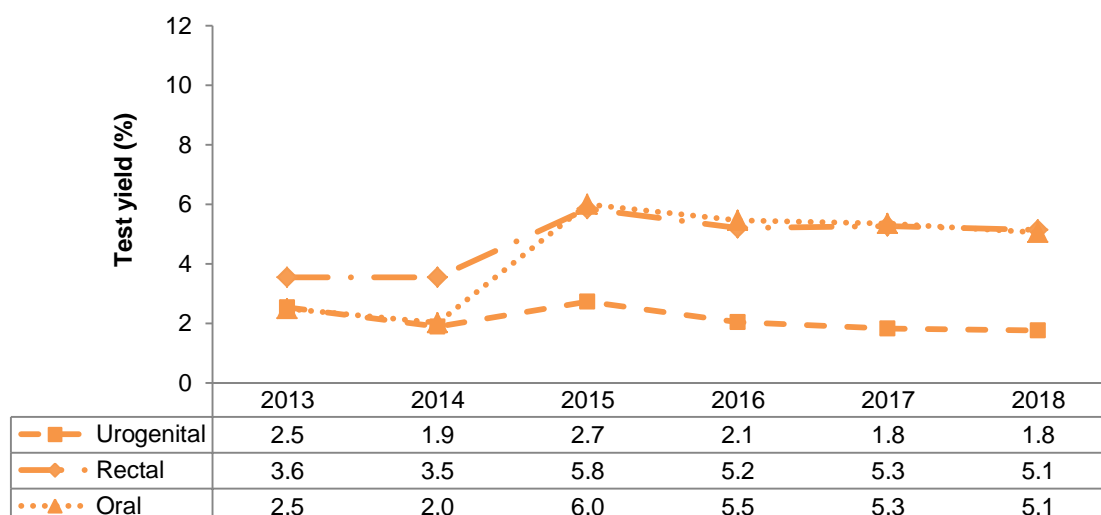
The proportion gonorrhoea positive among HIV negative GBM in 2018 at GBM clinics was 19.1% (Table 15). The proportion gonorrhoea positive for GBM on PrEP was 29.8% compared to 14.4% for GBM not on PrEP ( $p<0.01$ ). Between 2013 and 2018, there was a significant increasing trend in the proportion gonorrhoea positive among HIV negative GBM from 8.6% in 2013 to 19.1% in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was a significant decrease in the proportion gonorrhoea positive for GBM on PrEP ( $p<0.01$ ) and no change for GBM not on PrEP ( $p=0.92$ ) (Figure 21).

**Figure 21. Gonorrhoea testing rate and proportion positive among HIV negative GBM at GBM clinics, by PrEP status, 2013-2018**



Of all gonorrhoea tests among HIV negative GBM at GBM clinics in 2018, 1.8% of urogenital specimens tested positive, 5.1% of rectal specimens tested positive and 5.1% of oral specimens tested positive. Between 2013 and 2018, there was a significant increasing trend in the gonorrhoea test yield (positive specimen results) for oral specimens ( $p<0.01$ ) and rectal specimens ( $p<0.01$ ), and a significant decrease in the yield for urogenital specimens ( $p<0.01$ ). The gonorrhoea test yield peaked at all anatomical sites in 2015. The subsequent decline in test yield was significant at all anatomical sites (urogenital  $p<0.01$ , rectal  $p=0.01$ , oral  $p<0.01$ ) (Figure 22).

**Figure 22. Gonorrhoea test yield by anatomical site among HIV negative GBM at GBM clinics, 2013-2018**



**Table 16. Gonorrhoea test yield by anatomical site among HIV negative GBM at GBM clinics, by PrEP status, 2016-2018**

	2016	2017	2018
<b>GBM on PrEP</b>			
Urogenital	2.1	1.7	1.7
Rectal	6.2	5.4	5.0
Oral	5.9	5.3	4.9
<b>GBM not on PrEP</b>			
Urogenital	2.0	1.9	1.8
Rectal	4.7	5.2	5.2
Oral	5.3	5.4	5.2

For GBM on PrEP, there was a significant decrease in the test yield of oral and rectal specimens ( $p < 0.01$ ), and no change in the test yield of urogenital specimens ( $p = 0.06$ ) between 2016 and 2018. For GBM not on PrEP, there was no change in the test yield of urogenital specimens ( $p = 0.25$ ), rectal specimens ( $p = 0.06$ ) or oral specimens ( $p = 0.87$ ) between 2016 and 2018 (Table 16).

## Gonorrhoea Retesting

Among HIV negative GBM attending a GBM clinic for gonorrhoea testing in 2018, 42% were retested within three months (77% of GBM on PrEP compared to 27% not on PrEP), 58% were retested within six months (89% of GBM on PrEP compared to 44% not on PrEP) and 69% were retested within 12 months (94% of GBM on PrEP compared to 58% not on PrEP) (Table 17).

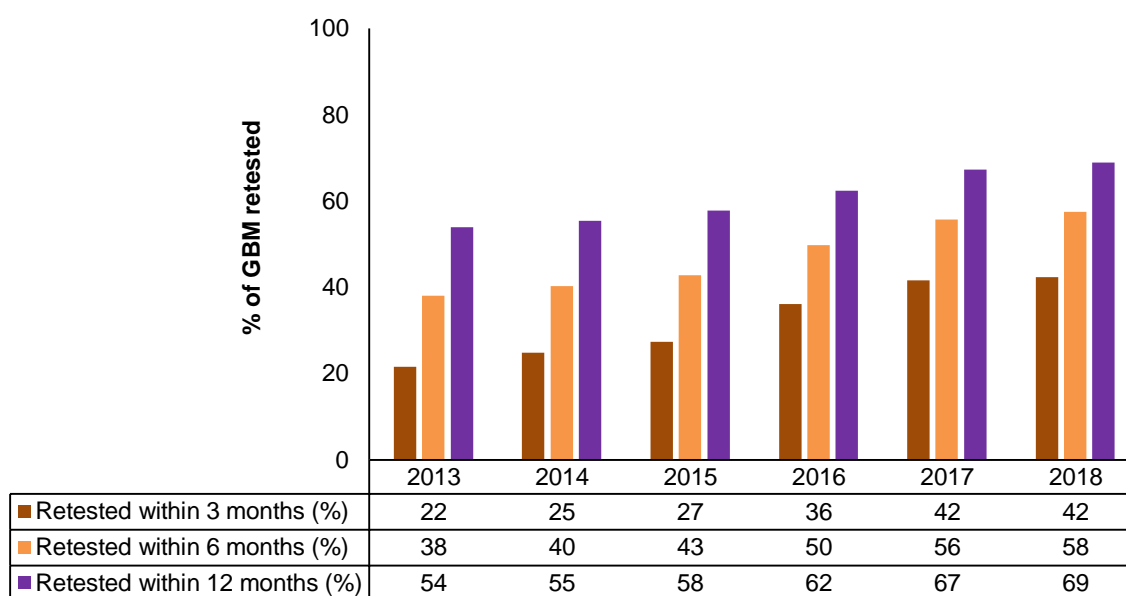
**Table 17. HIV negative GBM retested for gonorrhoea at GBM clinics, 2018**

	HIV neg GBM with index test	HIV neg GBM with retest	HIV neg GBM with retest
	n	n	%
<i>Within 3 months</i>			
<b>HIV neg GBM</b>	<b>13,971</b>	<b>5,926</b>	<b>42</b>
HIV neg GBM on PrEP	4,245	3,260	77
HIV neg GBM not on PrEP	9,726	2,666	27
<i>Within 6 months</i>			
<b>HIV neg GBM</b>	<b>13,971</b>	<b>8,035</b>	<b>58</b>
HIV neg GBM on PrEP	4,245	3,793	89
HIV neg GBM not on PrEP	9,726	4,242	44
<i>Within 12 months</i>			
<b>HIV neg GBM</b>	<b>13,971</b>	<b>9,627</b>	<b>69</b>
HIV neg GBM on PrEP	4,245	3,989	94
HIV neg GBM not on PrEP	9,726	5,638	58

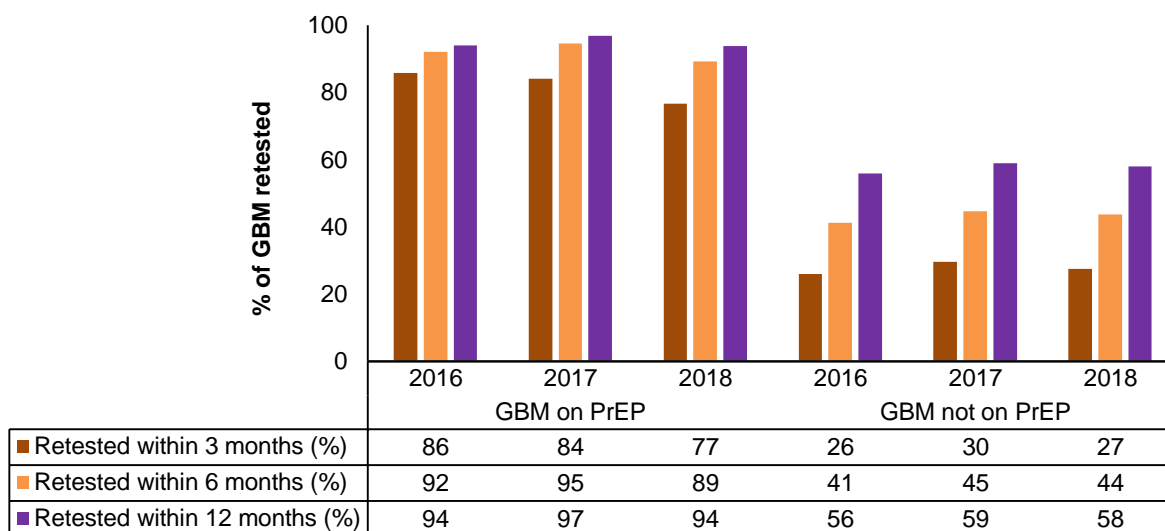
There was a significant increasing trend in the gonorrhoea retesting rate within three months ( $p<0.01$ ), six months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) between 2013 and 2018 (Figure 23).

For GBM on PrEP, there was a significant decrease in the proportion who were retested within three months ( $p<0.01$ ) and no change in the proportion retested within six months ( $p=0.14$ ) and 12 months ( $p=0.74$ ) between 2016 and 2018. For GBM not on PrEP, there was a significant increase in the proportion who were retested within six months ( $p=0.01$ ) and no significant change in the proportion who were retested within three months ( $p=0.06$ ) and 12 months ( $p=0.07$ ) between 2016 and 2018 (Figure 24).

**Figure 23. Gonorrhoea retesting among HIV negative GBM at GBM clinics, 2013-2018**



**Figure 24. Gonorrhoea retesting among HIV negative GBM at GBM clinics, by PrEP status, 2016-2018**



## 11.2 GONORRHOEA AMONG HIV POSITIVE GBM

In 2018, 3,886 HIV positive GBM attended a GBM clinic and 2,179 (56%) were tested at least once for gonorrhoea (Table 18).

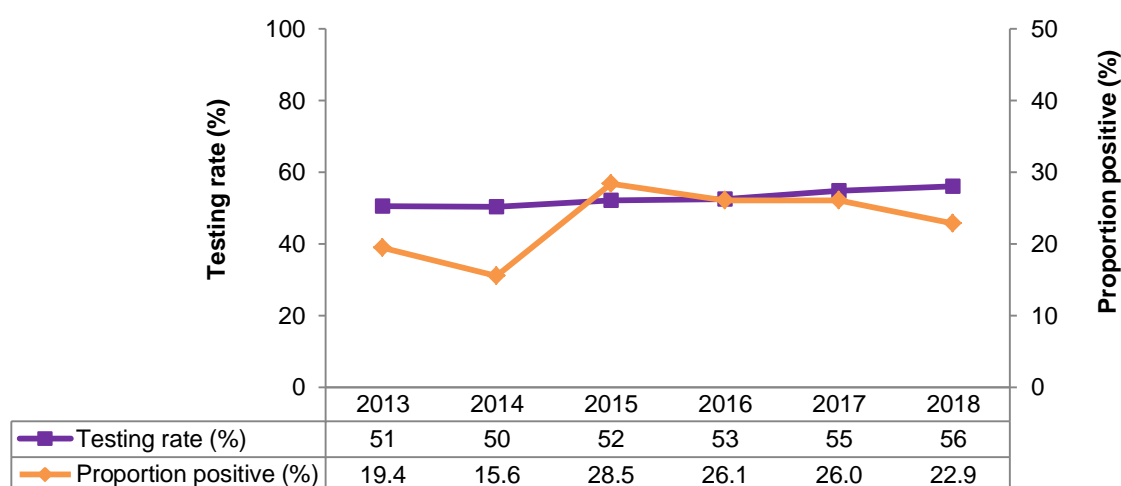
**Table 18. Gonorrhoea testing rate and proportion positive among HIV positive GBM at GBM clinics, 2018**

	Number of HIV pos GBM attended	Number of HIV pos GBM tested	Gonorrhoea testing rate	HIV pos GBM tested gonorrhoea positive	Proportion HIV pos GBM gonorrhoea positive
	n	n	%	n	%
GBM clinics	3,886	2,179	56	498	22.9

There was a significant increase in the gonorrhoea testing rate among HIV positive GBM between 2013 and 2018 ( $p<0.01$ ) (Figure 25).

The proportion gonorrhoea positive among HIV positive GBM in 2018 at GBM clinics was 22.9% in 2018 (Table 18). Between 2013 and 2018, there was a significant increasing trend in the proportion gonorrhoea positive overall ( $p<0.01$ ), however a significant decrease in proportion gonorrhoea positive was observed from the peak proportion gonorrhoea positive of 28.5% in 2015 to 22.9% in 2018 ( $p<0.01$ ) (Figure 25).

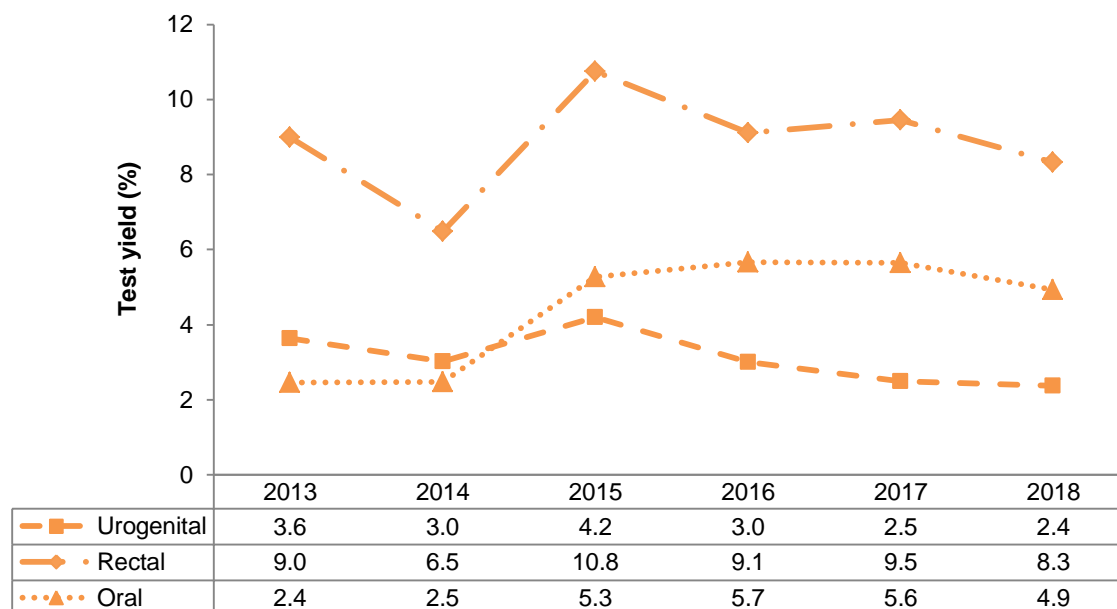
**Figure 25. Gonorrhoea testing rate and proportion positive among HIV positive GBM at GBM clinics, 2013-2018**



Of all gonorrhoea tests among HIV positive GBM at GBM clinics in 2018, 2.4% of urogenital specimens tested positive, 8.3% of rectal specimens tested positive and 4.9% of oral specimens tested positive. Between 2013 and 2018, there was an increasing trend in the oral gonorrhoea test yield ( $p<0.01$ ), a decreasing trend in the urogenital test yield ( $p<0.01$ ) and no change in the rectal test yield ( $p=0.58$ ). The gonorrhoea test yield for urogenital and rectal specimens peaked in 2015 (4.2% and 10.8% respectively). The subsequent decline in the test yield for urogenital and rectal specimens

was significant ( $p < 0.01$ ). The decline in test yield for oral specimens following the peak in 2016 (5.7%) was not significant ( $p = 0.48$ ) (Figure 26).

**Figure 26. Proportion of tests gonorrhoea positive by anatomical site among HIV positive GBM at GBM clinics, 2013-2018**



## Gonorrhoea Retesting

Among HIV positive GBM attending GBM clinics for gonorrhoea testing in 2018, 34% were retested within three months, 57% were retested within six months and 72% were retested within 12 months (Table 19).

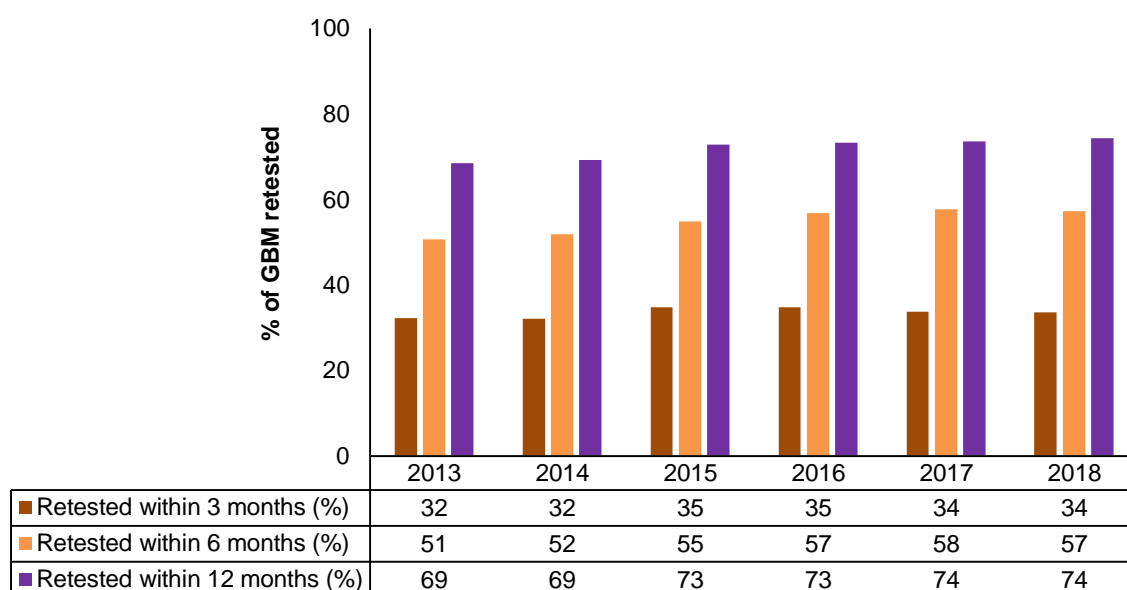
**Table 19. HIV positive GBM retested for gonorrhoea at GBM clinics, 2018**

	HIV pos GBM with index test	HIV pos GBM with retest	HIV pos GBM with retest
	n	n	%
Within 3 months	2,178	731	34
Within 6 months	2,178	1,248	57
Within 12 months	2,178	1,621	74

There was a significant increasing trend in the gonorrhoea retesting rate within six months ( $p < 0.01$ ) and within 12 months ( $p = 0.01$ ), and no change in the gonorrhoea retesting rate within three months ( $p = 0.38$ ) between 2013 and 2018 (Figure 27).



**Figure 27. Gonorrhoea retesting among HIV positive GBM at GBM clinics, 2013-2018**



### 11.3 SUMMARY OF RESULTS

Between 2013 and 2018 gonorrhoea testing and retesting rates increased among GBM attending GBM clinics in Melbourne, which was almost entirely due to post-2015 increases in testing among GBM on PrEP. While there has been a significant increase in the rate of three, six and 12-month HIV retesting among GBM, declines were observed in the three month retesting rate among GBM on PrEP (also seen for other STIs).

Proportion gonorrhoea positive increased among HIV negative GBM between 2013 and 2018 and for GBM on PrEP was more than twice that of GBM not on PrEP. This is likely due to the high testing rates among GBM on PrEP (increasing opportunities for the detection of new cases), increased serodiscordant sex with HIV positive GBM (who have a comparatively higher gonorrhoea prevalence) and high risk sexual behaviour reported by GBM on PrEP.

The proportion gonorrhoea positive among HIV negative GBM increased substantially in 2015 prior to PrEP scale-up and generally plateaued thereafter among GBM not on PrEP. The proportion gonorrhoea positive among GBM on PrEP declined between 2016 and 2018 but remains high.

Between 2013 and 2018, there was a significant increasing trend in the test yield of rectal and oral specimens among HIV negative GBM. Interestingly there was a significant decline in the test yield of urogenital specimens among this group during the same period. Between 2016 and 2018 among GBM on PrEP, there was a significant decrease in the test yield for oral and rectal specimens, and no change in urogenital specimens. During the same time among GBM not on PrEP, the test yield remained unchanged for all anatomical sites.

Among HIV positive GBM, there was a significant increase in the gonorrhoea testing rate at GBM clinics, however the rate of gonorrhoea testing remains approximately half that of the syphilis testing rate. This is likely due to the simplicity of pairing syphilis serology tests alongside HIV viral load tests. Encouragingly, between 2013 and 2018, retesting for gonorrhoea within six and 12-months increased significantly.

The proportion of HIV positive GBM who tested positive for gonorrhoea peaked in 2015 but declined significantly in the following two years. This may reflect a reduction in gonorrhoea transmission with increased serodiscordant sex with HIV negative GBM (who in Melbourne have a lower gonorrhoea prevalence) since the scale-up of HIV PrEP in Melbourne. While the gonorrhoea test yield decreased from 2015 onwards for rectal and urogenital samples an increasing trend in oral gonorrhoea remained suggesting recent increases in oral transmission.

## 12 CHLAMYDIA AMONG GBM

This section reports on GBM attending for chlamydia testing at GBM clinics between 2013 and 2018. Data from three clinics specialising in gay men's health, PRONTO! and Melbourne Sexual Health Clinic (together referred to as GBM clinics) were used to report on selected indicators related to the control of chlamydia in Victoria and presented separately for HIV negative and HIV positive GBM. For HIV negative GBM, results presented are stratified by PrEP use. For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.2.

### 12.1 CHLAMYDIA AMONG HIV NEGATIVE GBM

In 2018, 15,227 HIV negative GBM attended a GBM clinic and 13,867 (91%) were tested at least once for chlamydia (Table 20).

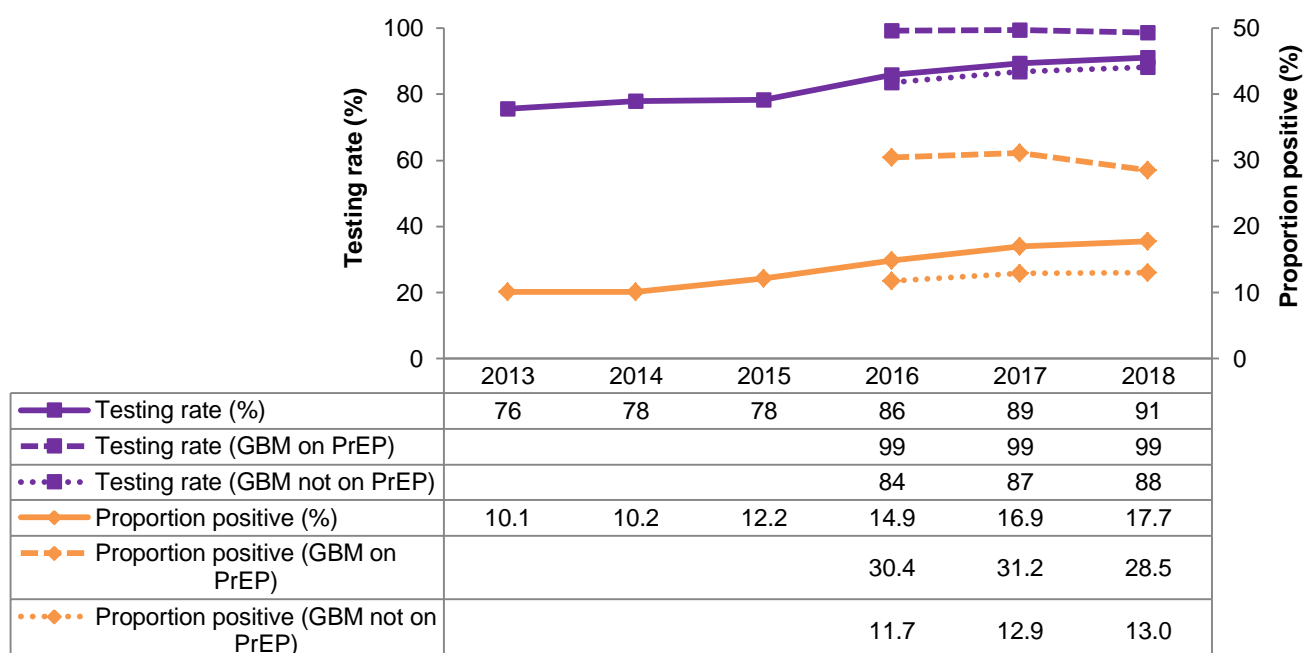
**Table 20. Chlamydia testing rate and proportion positive among HIV negative GBM at GBM clinics, 2018**

	HIV neg GBM attended	HIV neg GBM tested	Chlamydia testing rate	HIV neg GBM tested chlamydia positive	Proportion HIV neg GBM chlamydia positive
	n	n	%	n	%
GBM clinics	15,227	13,867	91	2460	17.7

There was a significant increasing trend in the chlamydia testing rate from 76% in 2013 to 91% in 2018 ( $p<0.01$ ). The testing rate at GBM clinics was 99% for GBM on PrEP and 88% for GBM not on PrEP in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was no change in testing rate for GBM on PrEP ( $p=0.80$ ) and a significant increase in the testing rate for GBM not on PrEP ( $p<0.01$ ) (Figure 28).

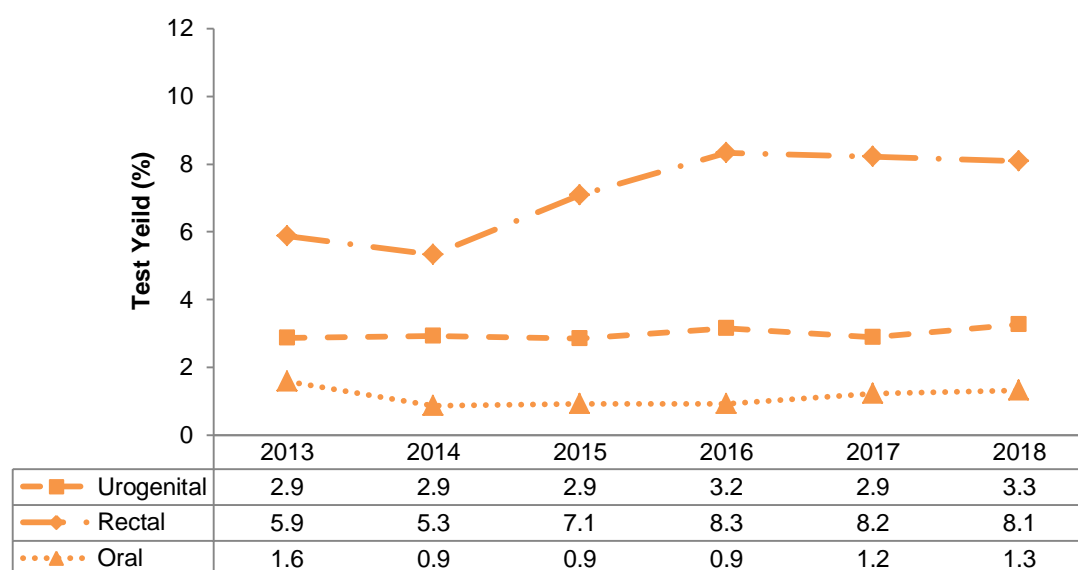
The proportion chlamydia positive among HIV negative GBM in 2018 at GBM clinics was 17.7% (Table 20). The proportion chlamydia positive for GBM on PrEP was 28.5% compared to 13.0% for GBM not on PrEP ( $p<0.01$ ). Between 2013 and 2018, there was a significant increasing trend in the proportion chlamydia positive among HIV negative GBM from 10.1% in 2013 to 17.7% in 2018 ( $p<0.01$ ). Between 2016 and 2018, there was no change in the proportion chlamydia positive among GBM on PrEP ( $p=0.11$ ) and a significant increase in the proportion chlamydia positive among GBM not on PrEP ( $p=0.01$ ) (Figure 28).

**Figure 28. Chlamydia testing rate and proportion positive among HIV negative GBM at GBM clinics, by PrEP status, 2013-2018**



Of all chlamydia tests among HIV negative GBM at GBM clinics in 2018, 3.3% of urogenital specimens tested positive, 8.1% of rectal specimens tested positive and 1.3% of oral specimens tested positive. Between 2013 and 2018, there was an increasing trend in the chlamydia test yield of urogenital specimens ( $p=0.04$ ) and rectal specimens ( $p<0.01$ ) and an increasing trend in test yield for oral specimens between 2014 and 2018 ( $p=0.01$ ) (Figure 30).

**Figure 29. Chlamydia test yield by anatomical site among HIV negative GBM at GBM clinics, 2013-2018**



**Table 21. Chlamydia test yield by anatomical site among HIV negative GBM at GBM clinics, by PrEP status, 2016-2018**

	2016	2017	2018
<b>GBM on PrEP</b>			
Urogenital	4.4	3.3	3.9
Rectal	11.1	9.9	9.2
Oral	1.0	1.1	1.3
<b>GBM not on PrEP</b>			
Urogenital	2.7	2.7	2.8
Rectal	2.9	2.8	2.9
Oral	0.8	1.3	1.4

For GBM on PrEP, there was a significant decrease in the test yield of rectal specimens ( $p<0.01$ ), and no change in the test yield of urogenital specimens ( $p=0.41$ ) or oral specimens ( $p=0.16$ ) between 2016 and 2018. For GBM not on PrEP, there was a significant increase in the test yield of oral specimens ( $p=0.02$ ) and no change in the test yield of urogenital specimens ( $p=0.75$ ) or rectal specimens ( $p=0.99$ ) between 2016 and 2018 (Table 21).

### Chlamydia Retesting

Among HIV negative GBM attending a GBM clinic for chlamydia testing in 2018, 39% were retested within three months (74% of GBM on PrEP compared to 24% not on PrEP), 55% were retested within six months (88% of GBM on PrEP compared to 41% not on PrEP) and 67% were retested within 12 months (93% of GBM on PrEP compared to 56% not on PrEP) (Table 22).

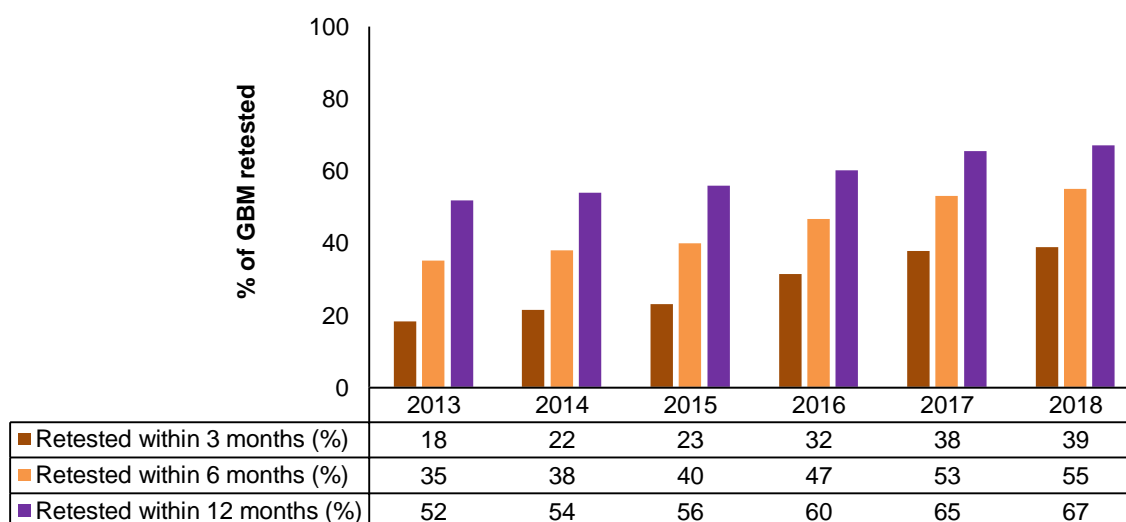
**Table 22. HIV negative GBM retested for chlamydia at GBM clinics, 2018**

	HIV neg GBM with index test	HIV neg GBM with retest	HIV neg GBM with retest
	n	n	%
<i>Within 3 months</i>			
<b>HIV neg GBM</b>	<b>13,832</b>	<b>5,402</b>	<b>39</b>
HIV neg GBM on PrEP	4,197	3,115	74
HIV neg GBM not on PrEP	9,635	2,287	24
<i>Within 6 months</i>			
<b>HIV neg GBM</b>	<b>13,832</b>	<b>7,629</b>	<b>55</b>
HIV neg GBM on PrEP	4,197	3,694	88
HIV neg GBM not on PrEP	9,635	3,935	41
<i>Within 12 months</i>			
<b>HIV neg GBM</b>	<b>13,832</b>	<b>9,288</b>	<b>67</b>
HIV neg GBM on PrEP	4,197	3,909	93
HIV neg GBM not on PrEP	9,635	5,379	56

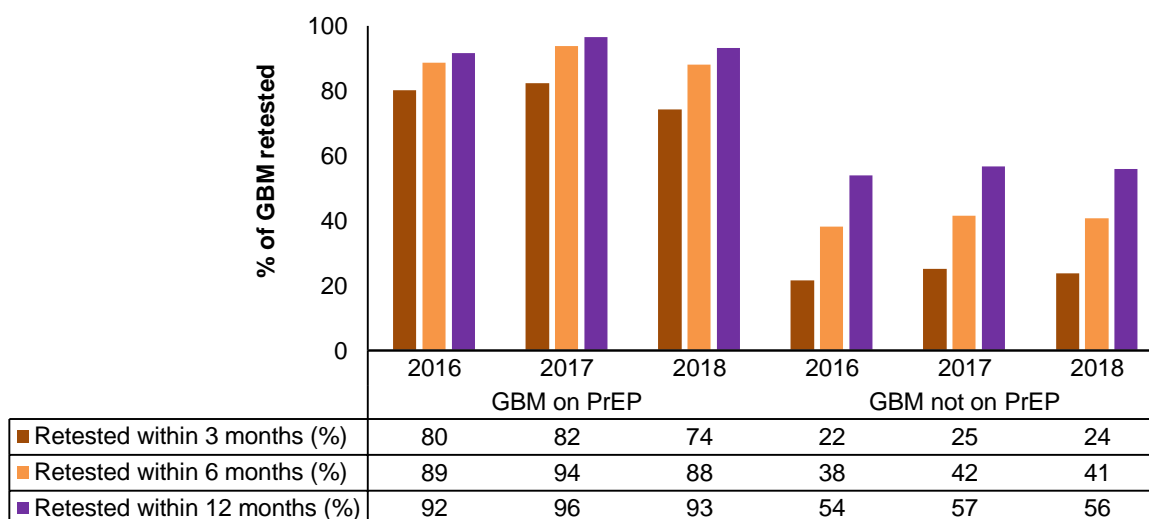
There was a significant increasing trend in the chlamydia retesting rate within three months ( $p<0.01$ ), six months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) between 2013 and 2018 (Figure 30).

For GBM taking PrEP, there was a significant decrease in the proportion who were retested within three months ( $p<0.01$ ) and no significant change in the proportion retested within six months ( $p=0.41$ ) or within 12 months ( $p=0.84$ ) between 2016 and 2018. For GBM not on PrEP, there was a significant increase in the proportion who were retested within three months ( $p<0.01$ ) and six months ( $p<0.01$ ) and no significant change in the proportion retested within 12 months ( $p=0.07$ ) between 2016 and 2018 (Figure 31).

**Figure 30. Chlamydia retesting among HIV negative GBM at GBM clinics, 2013-2018**



**Figure 31. Chlamydia retesting among HIV negative GBM at GBM clinics, by PrEP status, 2016-2018**



## 12.2 CHLAMYDIA AMONG HIV POSITIVE GBM

In 2018, 3,886 HIV positive GBM attended a GBM clinic and 2,142 (55%) were tested at least once for chlamydia (Table 23).

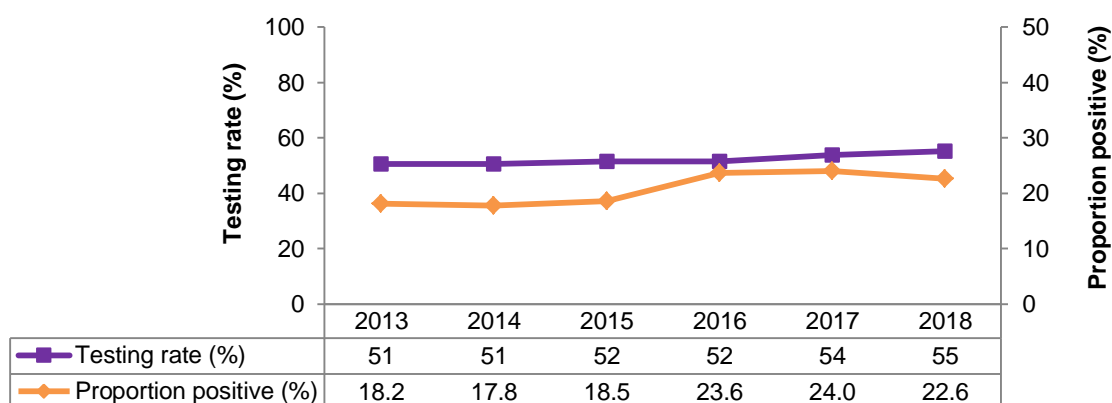
**Table 23. Chlamydia testing rate and proportion positive among HIV positive GBM at GBM clinics, 2018**

	HIV pos GBM attended	HIV pos GBM tested	Chlamydia testing rate	HIV pos GBM tested chlamydia positive	Proportion HIV pos GBM chlamydia positive
	n	n	%	n	%
GBM clinics	3,886	2,142	55	484	22.6

There was a significant increasing trend in the chlamydia testing rate among HIV positive GBM from 51% in 2013 to 55% in 2018 ( $p<0.01$ ) (Figure 32).

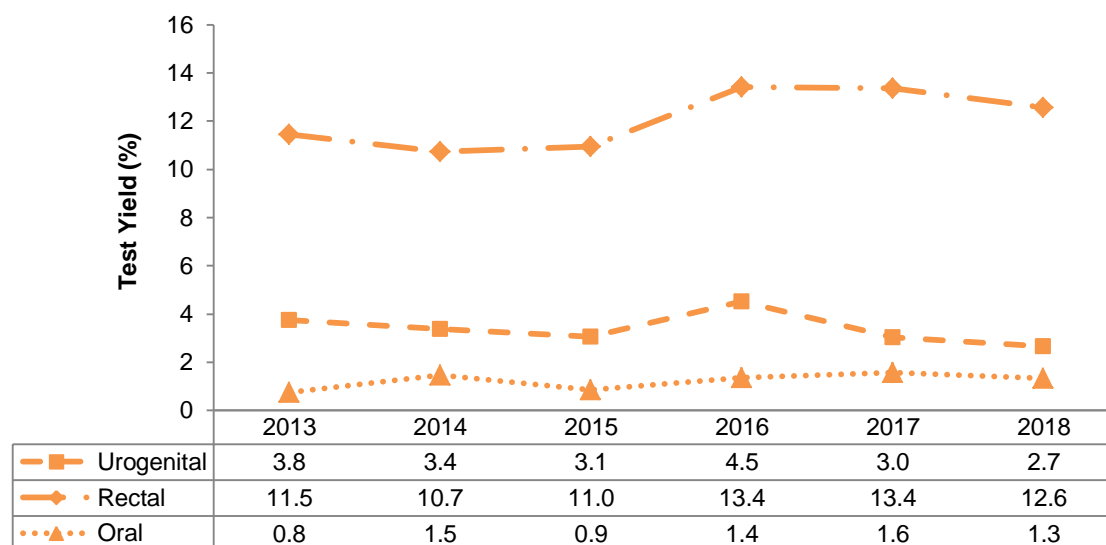
The proportion chlamydia positive among HIV positive GBM in 2018 at GBM clinics was 22.6% (Table 23). Between 2013 and 2018, there was a significant increasing trend in the proportion chlamydia positive overall among HIV positive GBM ( $p<0.01$ ). The proportion chlamydia positive remained stable between 2016 and 2018 ( $p=0.48$ ) (Figure 32).

**Figure 32. Chlamydia testing rate and proportion positive among HIV positive GBM at GBM clinics, 2013-2018**



Of all chlamydia tests among HIV positive GBM at GBM clinics in 2018, 2.7% of urogenital specimens tested positive, 12.6% of rectal specimens tested positive and 1.3% of oral specimens tested positive. Over the 2013-2018 surveillance period, there was an increasing trend in the chlamydia test yield for rectal specimens ( $p<0.01$ ), a decreasing trend in the test yield for urogenital specimens ( $p=0.04$ ) and no change in the test yield for oral specimens ( $p=0.20$ ) (Figure 33).

**Figure 33. Chlamydia test yield by anatomical site among HIV positive GBM at GBM clinics, 2013-2018**



## Chlamydia Retesting

Among HIV positive GBM attending a GBM clinic for chlamydia testing in 2018, 29% were retested within three months, 55% were retested within six months and 73% were retested within 12 months (Table 24).

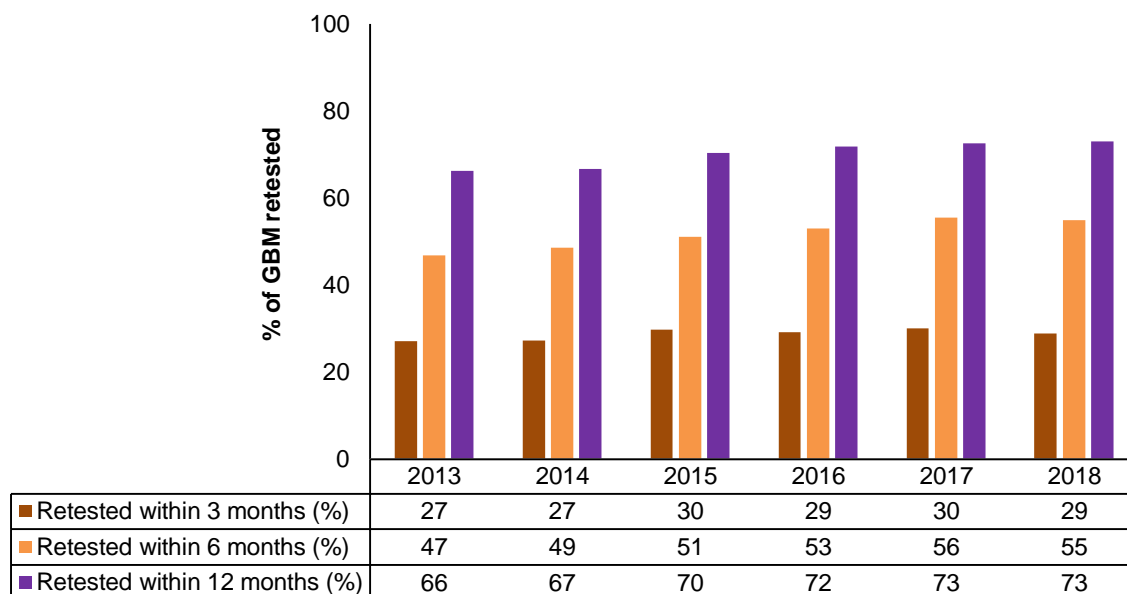
**Table 24. HIV positive GBM retested for chlamydia at GBM clinics, 2018**

	HIV pos GBM with index test	HIV pos GBM with retest	HIV pos GBM with retest
	n	n	%
Within 3 months	2,142	619	29
Within 6 months	2,142	1,176	55
Within 12 months	2,142	1,564	73

There was a significant increasing trend in the chlamydia retesting rate within three months ( $p<0.01$ ), six months ( $p<0.01$ ) and 12 months ( $p<0.01$ ) between 2013 and 2018 (Figure 34).



**Figure 34. Chlamydia retesting among HIV positive GBM at GBM clinics, 2013-2018**



## 12.3 SUMMARY OF RESULTS

Between 2013 and 2018 chlamydia testing and retesting rates increased among GBM attending GBM clinics in Melbourne, which was almost entirely due to post-2015 increases in testing among GBM on PrEP. While there has been a significant increase in the rate of three, six and 12-month HIV retesting among GBM, declines were observed in the three month retesting rate among GBM on PrEP (also seen for other STIs). Among GBM not on PrEP, there was small but significant increase in the proportion retested within three and six months.

Proportion chlamydia positive increased among HIV negative GBM between 2013 and 2018 and for GBM on PrEP was more than twice that of GBM not on PrEP. This is likely due to the high testing and treatment rate among GBM on PrEP (increasing opportunities for the detection of new cases), increased serodiscordant sex with HIV positive GBM (who have a comparatively higher chlamydia prevalence) and high risk sexual behaviour reported by GBM on PrEP.

The proportion chlamydia positive among HIV negative GBM increased substantially in 2015 prior to PrEP scale-up and generally plateaued thereafter. The proportion chlamydia positive among GBM on PrEP remained high but stable between 2016 and 2018, while the proportion chlamydia positive among GBM not on PrEP increased significantly.

Between 2013 and 2018 among HIV negative GBM, there was a significant increasing trend in the test yield of rectal and urogenital specimens and since 2014 in the test yield of oral specimens. Between 2016 and 2018 among GBM on PrEP, there was a significant decrease in the test yield for rectal specimens, and no change in urogenital and oral specimens. During the same time among

GBM not on PrEP, the test yield increased significantly for oral specimens and remained unchanged for urogenital and rectal specimens.

Among HIV positive GBM, there was a significant increase in the chlamydia testing rate at GBM clinics, however the rate of chlamydia testing remains approximately half that of the syphilis testing rate. This is likely due to the simplicity of pairing syphilis serology tests alongside HIV viral load tests. Encouragingly, between 2013 and 2018, retesting for chlamydia within three, six and 12-months increased significantly.

The proportion of HIV positive GBM testing positive for chlamydia peaked in 2015 but has plateaued in the following two years. Between 2013 and 2018 among HIV positive GBM, there was a significant increasing trend in the test yield for rectal specimens, a decreasing trend in test yield for urogenital specimens and the test yield for oral specimens remained stable.

## 13 CHLAMYDIA AMONG YOUNG PEOPLE

This section reports on young people (15-29 years) attending for chlamydia testing at GP clinics (including GBM GP clinics), community health clinics and Melbourne Sexual Health Centre between 2013 and 2018. Analysis excludes young males defined as GBM or attending GP clinics that specialise in gay men's health and PRONTO! and females that have ever been recorded as a sex worker. Data from 17 ACCESS sites were used to report on selected indicators related to the control of chlamydia in Victoria and presented separately for young males and females. For more information regarding classification of priority populations and disease definitions, see sections 6.2 and 6.2.

### 13.1 CHLAMYDIA AMONG YOUNG PEOPLE

In 2018, 28,292 young people aged 15-29 years attended a GP clinic, CH clinic or MSHC and 12,755 (45%) were tested at least once for chlamydia (Table 25). The proportion chlamydia positive among all young people aged 15-29 years in 2018 was 10.3% (Table 25).

**Table 25. Chlamydia testing rate and proportion positive among young people by clinic type, 2018**

	Young people attending	Young people tested for chlamydia	Chlamydia testing rate	Young people tested chlamydia positive	Proportion chlamydia positive
	n	n	%	n	%
General Practice clinics	12,162	791	6.5	84	10.6
Community Health clinics	8,618	1,679	19.5	140	8.3
GBM clinics	7,671 <sup>†</sup>	378	4.9	11	2.9
Melbourne Sexual Health Centre	11,212	9,944	88.7	1,082	10.9
<b>Total<sup>^</sup></b>	<b>28,292</b>	<b>12,755</b>	<b>45.1</b>	<b>1,317</b>	<b>10.3</b>

<sup>^</sup> Total is unique individuals across all clinic types. <sup>†</sup> Represents only young females attending

The testing rate among young females in 2018 (41%) was significantly lower than the testing rate among young males (55%) ( $p < 0.01$ ) (Table 26, Table 27). The proportion chlamydia positive among young males in 2018 (11.5%) was significantly higher than the proportion chlamydia positive among young females (9.6%) ( $p < 0.01$ ) (Table 26, Table 27).

### 13.2 CHLAMYDIA AMONG YOUNG FEMALES

In 2018, 19,694 young females attended a clinic and 8,058 were tested at least once for chlamydia (41%). The chlamydia testing rate among females varied greatly across clinic types and was lowest in GP clinics and highest at MSHC. The proportion chlamydia positive among females was highest at MSHC and GP clinics and lowest at GBM GP clinics (Table 26).

**Table 26. Chlamydia testing rate and proportion positive among female young people by clinic type, 2018**

	Young females attending	Young females tested for chlamydia	Chlamydia testing rate	Young females tested chlamydia positive	Proportion chlamydia positive
	n	n	%	n	%
General Practice clinics	6,374	520	8.2	49	9.4
Community Health clinics	5,773	1,329	23.0	103	7.8
GBM clinics	7,671	378	4.9	11	2.9
Melbourne Sexual Health Centre	6,494	5,867	90.4	612	10.4
<b>Total<sup>^</sup></b>	<b>19,694</b>	<b>8,058</b>	<b>40.9</b>	<b>775</b>	<b>9.6</b>

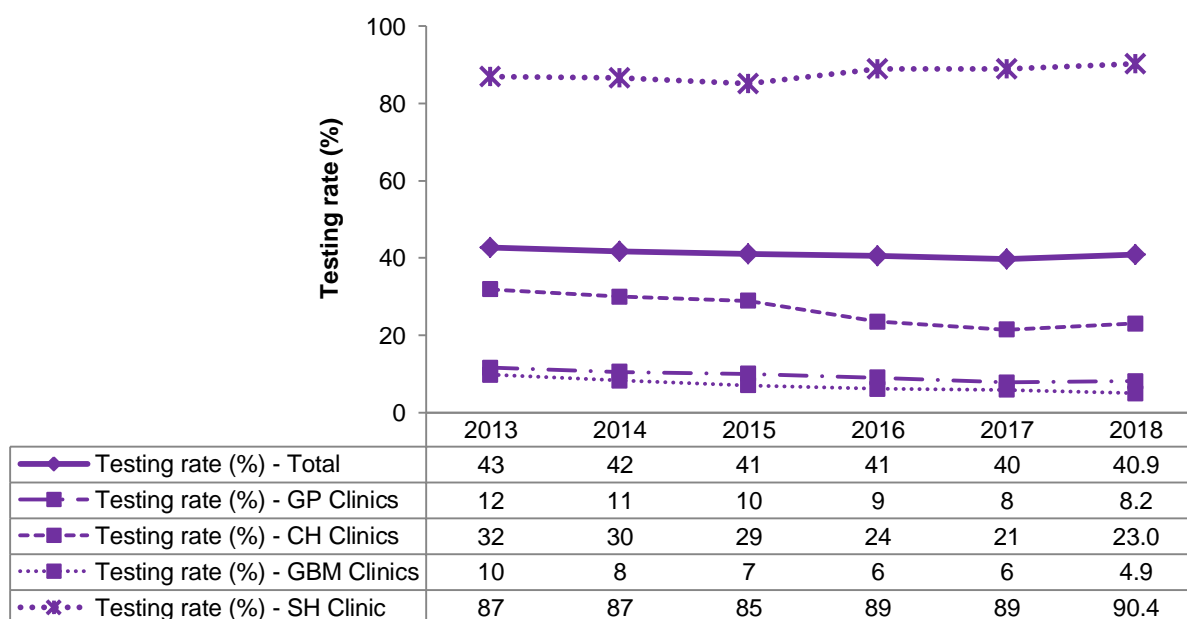
<sup>^</sup> Total is unique individuals across all clinic types.

Over the reporting period there was a significant decreasing trend in the chlamydia testing rates among females, attending GP clinics ( $p < 0.01$ ), CH clinics ( $p < 0.01$ ) and GBM GP clinics ( $p < 0.01$ ) and a significant increasing trend among young females attending MSHC ( $p < 0.01$ ) (Figure 35).

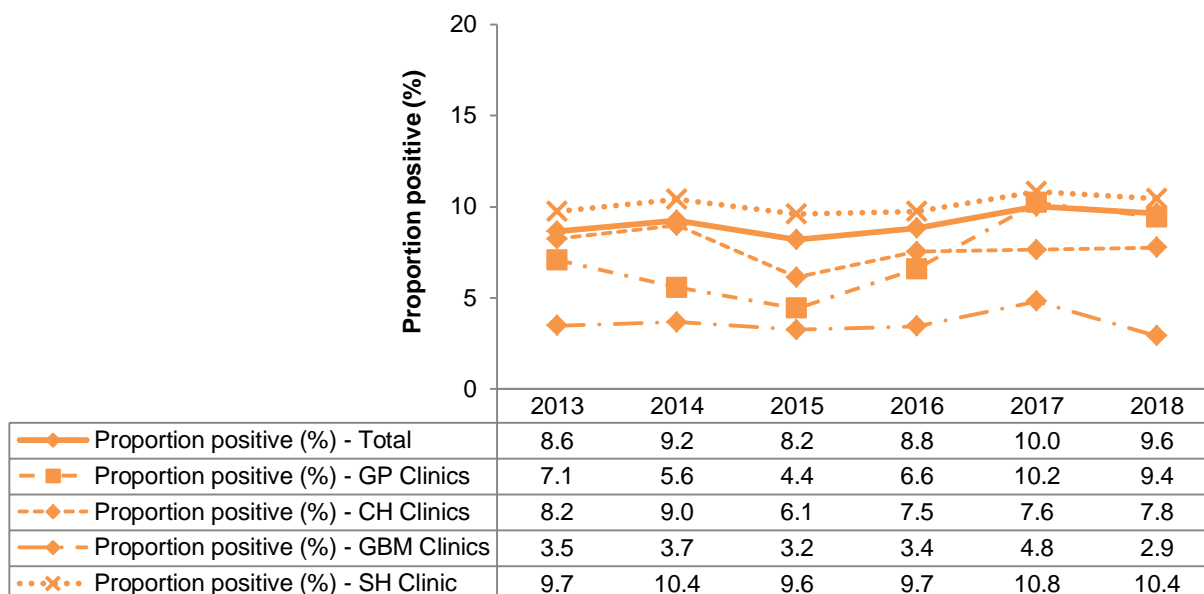
The proportion chlamydia positive among young females across all clinic types in 2018 was 9.6% (Table 26). Over the 2013-2018 surveillance period, there was a significant increase in the proportion chlamydia positive among young females across all clinic types ( $p < 0.01$ ) (Figure 35).

Over the 2013-2018 surveillance period, there was a significant increasing trend in proportion chlamydia positive among females attending GP clinics ( $p < 0.01$ ) and no change in the proportion positive among females attending Community Health clinics ( $p = 0.48$ ), GBM clinics ( $p = 0.87$ ) and Melbourne Sexual Health Centre ( $p = 0.19$ ) (Figure 36).

**Figure 35. Chlamydia testing among young females, 2013-2018**



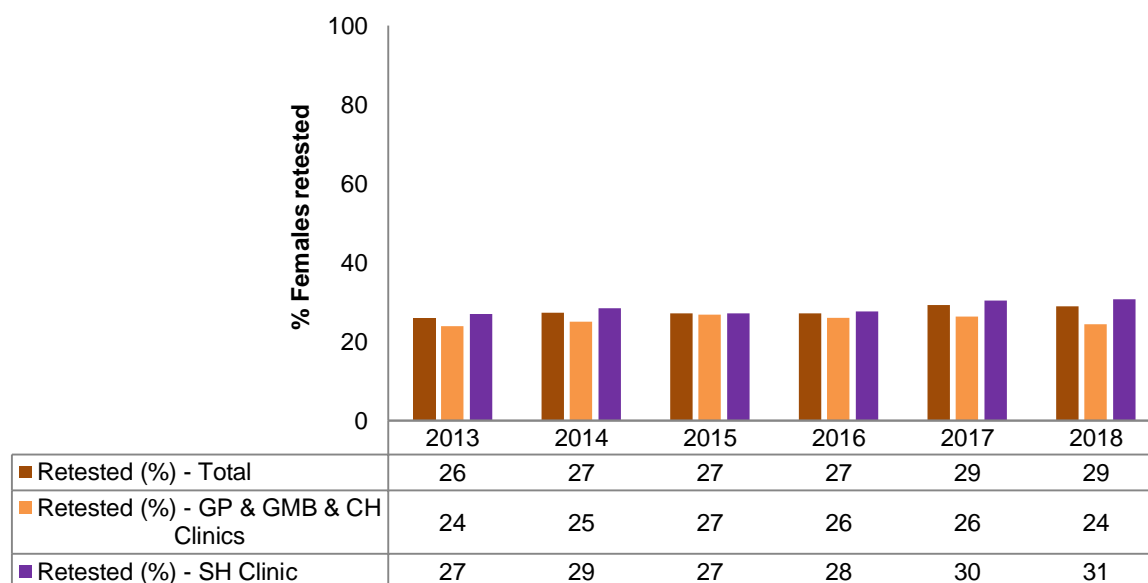
**Figure 36. Chlamydia proportion positive among young females, 2013-2018**



## Chlamydia Retesting

Among young females attending all clinic sites for chlamydia testing in 2018, 29% were retested within 12 months (24% at GP, GMB GP and CH clinics, 31% in SH clinics) (Figure 37).

**Figure 37. Chlamydia retesting among young females, 2013-2018**



There was a significant increasing trend in the chlamydia retesting rate within 12 months at all clinic types ( $p < 0.01$ ) and at the SH clinic ( $p < 0.01$ ) and no change in the resting within 12 months GP, GBM and CH clinics ( $p = 0.53$ ) (Figure 37).

### 13.3 CHLAMYDIA AMONG YOUNG MALES

In 2018, 8,598 young males attended a clinic and 4,697 were tested at least once for chlamydia (55%). The chlamydia testing rate among males varied greatly across clinics types and was lowest in GP clinics and highest at Melbourne Sexual Health Centre. The proportion chlamydia positive among males was highest at GP clinics and lowest at community health clinics (Table 27).

**Table 27. Chlamydia testing rate and proportion positive among young males by clinic type, 2018**

	Young males attending	Young males tested for chlamydia	Chlamydia testing rate	Young males tested chlamydia positive	Proportion chlamydia positive
	n	n	%	n	%
General Practice clinics	5,788	271	4.7	35	12.9
Community Health clinics	2,845	351	12.3	37	10.5
Sexual Health clinic	4,718	4,076	86.4	470	11.5
<b>Total<sup>^</sup></b>	<b>8,598</b>	<b>4,697</b>	<b>54.6</b>	<b>542</b>	<b>11.5</b>

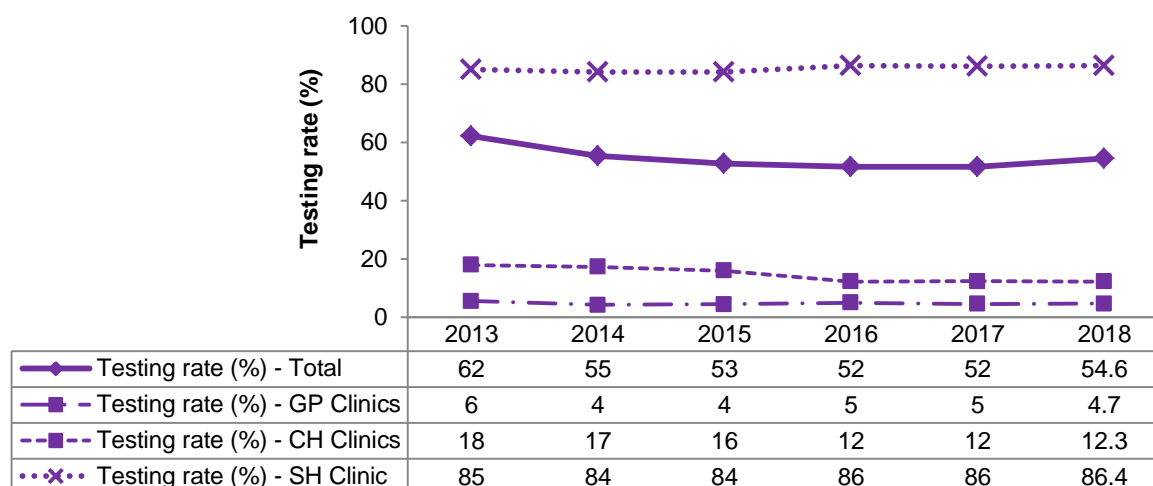
<sup>^</sup> Total is unique individuals across all clinic types.

Over the reporting period there was a significant decreasing trend in the chlamydia testing rates among males, attending CH clinics ( $p < 0.01$ ), a significant increasing trend among young males attending Melbourne Sexual Health Centre ( $p < 0.01$ ) and no change in the testing rate among young males attending GP clinics ( $p = 0.34$ ) (Figure 38).

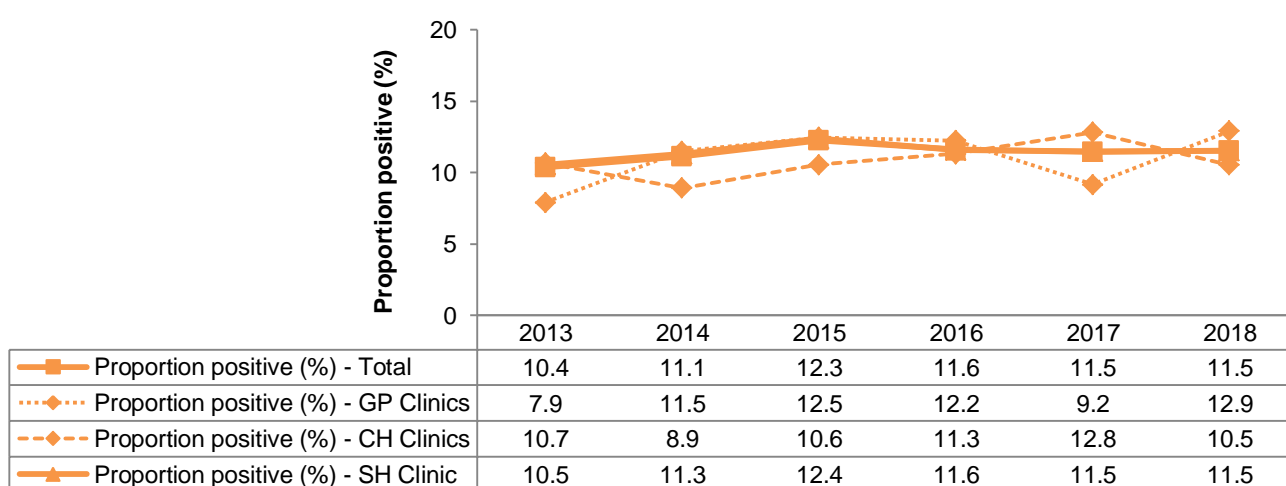
The proportion chlamydia positive among young males across all clinic types in 2018 was 11.5% (Table 27). Over the 2013-2018 surveillance period, there was a significant increase in the proportion chlamydia positive among young males across all clinic types ( $p < 0.01$ ) (Figure 39).

Over the 2013-2018 surveillance period, there was no significant change in the proportion chlamydia positive among males attending GP clinics ( $p = 0.27$ ), Community Health clinics ( $p = 0.45$ ) and Melbourne Sexual Health Centre ( $p = 0.35$ ) (Figure 39).

**Figure 38. Chlamydia testing among young males, 2013-2018**



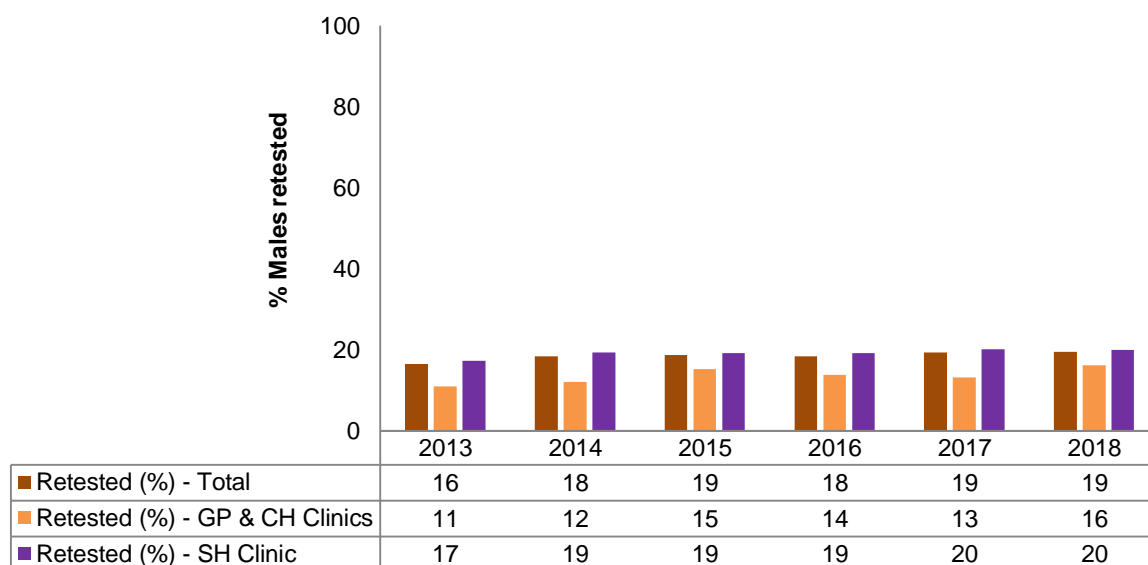
**Figure 39. Chlamydia proportion positive among young males, 2013-2018**



## Chlamydia Retesting

Among young males attending all clinic sites for chlamydia testing in 2018, 19% were retested within 12 months (16% at GP and CH clinics, 20% in SH clinics) (Figure 40).

**Figure 40. Chlamydia retesting among young males at GP clinics and Community Health Clinics, 2013-2018**



There was a significant increasing trend in the chlamydia retesting rate within 12 months at all clinic types ( $p < 0.01$ ), GP and CH clinics ( $p = 0.03$ ) and at the SH clinic ( $p = 0.01$ ) (Figure 40).

## 13.4 SUMMARY OF RESULTS

Between 2013 and 2018, there was a decrease in the chlamydia testing rate among both male and female young people. This decline was driven predominantly by reduced rates of testing outside of the sexual health clinic. However, among those tested, there was a significant increase in the 12-monthly retesting rates among both male and female young people.

In the context of sustained rates of chlamydia positivity among young people, these data suggest that chlamydia control strategies reliant on testing of sexually active young people are not being maintained in general practice. The large number of consults in this setting emphasises the importance of general practice diagnosis, treatment and control of chlamydia among young people in Victoria.