

# NSW HIV Strategy 2016 – 2020

## Quarter 2 2019

### Data Report



## The NSW HIV Strategy 2016-2020

The *NSW HIV Strategy 2016-2020* continues the NSW Government's commitment to achieving the virtual elimination of HIV transmission in NSW by 2020, and sustaining the virtual elimination of HIV transmission in people who inject drugs, sex workers and from mother to child. The Strategy refines our efforts across prevention, testing and treatment, building on the actions that have proven successful in implementing the *NSW HIV Strategy 2012-2015* and prioritising the additional activities needed to end HIV transmission in NSW, including expanding access to PrEP for people at a high risk of HIV and the rapid initiation of HIV treatment.

To achieve this goal the Strategy focuses on:

- Sustaining the central role of condoms in preventing the transmission of HIV
- Reducing sharing of injecting equipment among people who inject drugs by 25%
- Assessing all people attending public sexual health services and high caseload general practices for PrEP eligibility
- Facilitating testing of all recent sexual and injecting partners of people newly diagnosed with HIV
- Increasing the frequency of HIV testing in priority populations in accordance with risk
- Strengthening service integration and models of care to deliver HIV testing in our priority settings
- Strengthening systems and service integration for HIV prevention, diagnosis and management for Aboriginal people at risk
- Increasing the proportion of people with diagnosed HIV on ART to 95%
- Ensuring 90% of people newly diagnosed with HIV are on ART within 6 weeks of diagnosis in 2016 and to further reduce this timeframe over the life of the Strategy
- Further strengthening systems for timely collection and reporting of data to monitor progress, report outcomes and determine additional focus

The Strategy identifies the range of key settings needed for action including publicly funded sexual health services, general practice and primary care, Aboriginal Community Controlled Health Services, NSW needles and syringe program outlets, antenatal care services, drug and alcohol services, mental health services and emergency departments.

A range of data sources are monitored and reported against via this quarterly data report, to monitor progress against the Strategy goals and targets

## Key messages

### **NSW continues to make progress towards the virtual elimination of HIV transmission**

Between January and June 2019, the number of NSW residents newly diagnosed with HIV decreased by 10% compared to the average for the same period of the last five years.

### **Diagnoses of early stage infections continue to fall**

Only 27% (n=38) of the new diagnoses in January to June 2019 had evidence that their infection occurred in the 12 months preceding diagnosis (early stage HIV infection), a reduction of 42% relative to the same period over the last five years. This decline in early stage infections, in a setting of high testing, suggests that HIV transmission is decreasing.

This decline in new diagnoses with early stage infection was seen in both Australian and overseas-born men who have sex with men (MSM), with reductions of 39% and 38%, respectively, compared to the January to June average for 2014-2018. Over 75% of these overseas-born MSM with early stage infection likely acquired HIV in Australia.

### **Increases in notifications of overseas-born MSM are being driven by those being diagnosed late**

There were 75 HIV notifications of overseas-born MSM between January and June 2019, a 23% increase compared with the same period over the last five years. This was driven by a higher number of overseas-born MSM who were diagnosed with late stage infection (n=35) during January to June 2019, an increase of 61%, compared to the five year average for this period. Most of the overseas-born MSM diagnosed with late stage infection were younger (20-40 years old), had only lived in Australia for four years or less and likely acquired their infection overseas.

The rise in notifications of late stage infection in overseas-born MSM may reflect increased testing in this group due to specific initiatives targeting culturally and linguistically diverse (CALD) MSM. Examples include: the NSW HIV testing campaign 'Discreet Life' which targets CALD men, including heterosexually identifying MSM and men having sex overseas; the new [a\[TEST\] Chinese clinic](#) which offers free and confidential HIV and STI screening by Mandarin-speaking community peers and nurses; and the translation of the Ending HIV resources into Simplified Chinese.

### **Fall in notifications of Australian born MSM with late stage diagnosis**

In contrast to the increase seen in late diagnoses in overseas-born MSM, there was a 42% decrease for MSM born in Australia (n=12) with late stage diagnosis in January to June 2019 compared to the five year average for the same period. This follows a similar decrease during June to December 2018. In the setting of high testing, this suggests that the number of Australian-born MSM with undiagnosed HIV infection is decreasing.

### **PrEP is the most common HIV prevention method in HIV-negative gay and bisexual men**

Since being listed on the PBS, 9,334 NSW residents have been dispensed PrEP at least once between 1 April 2018 and 31 March 2019. However, this is likely an underestimation of NSW residents using PrEP as it does not account for those who are privately importing PrEP online from overseas.

The Sydney Gay Community Periodic Survey (SGCPS) shows that 32.8% of gay and bisexual men who reported condomless anal intercourse with casual partners (CAIC) were using PrEP to prevent HIV in 2019, compared to 24.5% who reported consistent condom use. Though the increasing trend of PrEP use coincides with a decrease of consistent condom use, the overall proportion of MSM using an effective prevention method increased to 76.2%.

**NSW continues to demonstrate great success in treatment uptake**

The trend of decreasing time to treatment initiation has continued amongst cases newly diagnosed up to the end of 2018. The median time between diagnosis and treatment initiation has more than halved from 45 days in 2013 to 19 days in 2018. The proportion of those on treatment within six weeks of diagnosis was 83% for 2018, while the proportion of those on treatment within two weeks of diagnosis increased to 39%, up from 22% in 2017. Of those on ART by six months, 89% had an undetectable viral load at the time of the six month follow-up, which means that it is no longer possible for them to transmit HIV.

## Key data

HIV INFECTIONS	Target group	Apr-Jun 2019	Compared with Apr-Jun 2014-2018 average
Number of NSW residents newly diagnosed	All new diagnoses	77	3% more (av. n=74.4)
	MSM	62	5% more (av. n=59.0)
	Australian-born MSM	22	30% less (av. n=31.6)
	Overseas-born MSM	40	46% more (av. n=27.4)
	Heterosexuals	10	25% less (av. n=13.4)
Number of new diagnoses with evidence of early stage infection	All new diagnoses	17	41% less (av. n=28.6)
	MSM	16	39% less (av. n=26.4)
	Australian-born MSM	8	43% less (av. n=14.0)
	Overseas-born MSM	8	35% less (av. n=12.4)
Number all new diagnoses with evidence of late diagnosis	All new diagnoses	36	21% more (av. n=29.8)
PREVENT	Target group	Apr 2018 –Mar 2019	
Number of people receiving PrEP through PBS	People in NSW at high risk of HIV infection	9,334	
TEST	Target group	Apr-Jun 2019	Compared with Apr-Jun 2018
Number of HIV serology tests performed in NSW	All	149,080	3% more (n=144,622)
Number of HIV tests performed in NSW public sexual health clinics.	All	14,002	4% less (n=14,642)
	Identifying as MSM	8,783	5% less (n=9,236)
Number of DBS tests (Nov 2016 – Jun 2019)		2,684 (8 HIV positive)	
TREAT	Target group	Apr-Jun 2019	Target
Proportion of patients with diagnosed HIV infection in care, who were on treatment	Sexual Health and HIV Clinic attendees	98%	95%
	Select high caseload general practices	96%	95%
Proportion of NSW residents newly diagnosed with HIV who initiated ART within four and six weeks of diagnosis	Newly diagnosed Jan-Dec 2018 (n=277)	68% < 4 weeks 83% < 6 weeks	>90%
Proportion of NSW residents newly diagnosed who were reported to be virally suppressed (VL < 200 copies/mL) at 6-month follow-up	NSW residents Jan-Dec 2018 (n=277)	89%	100%

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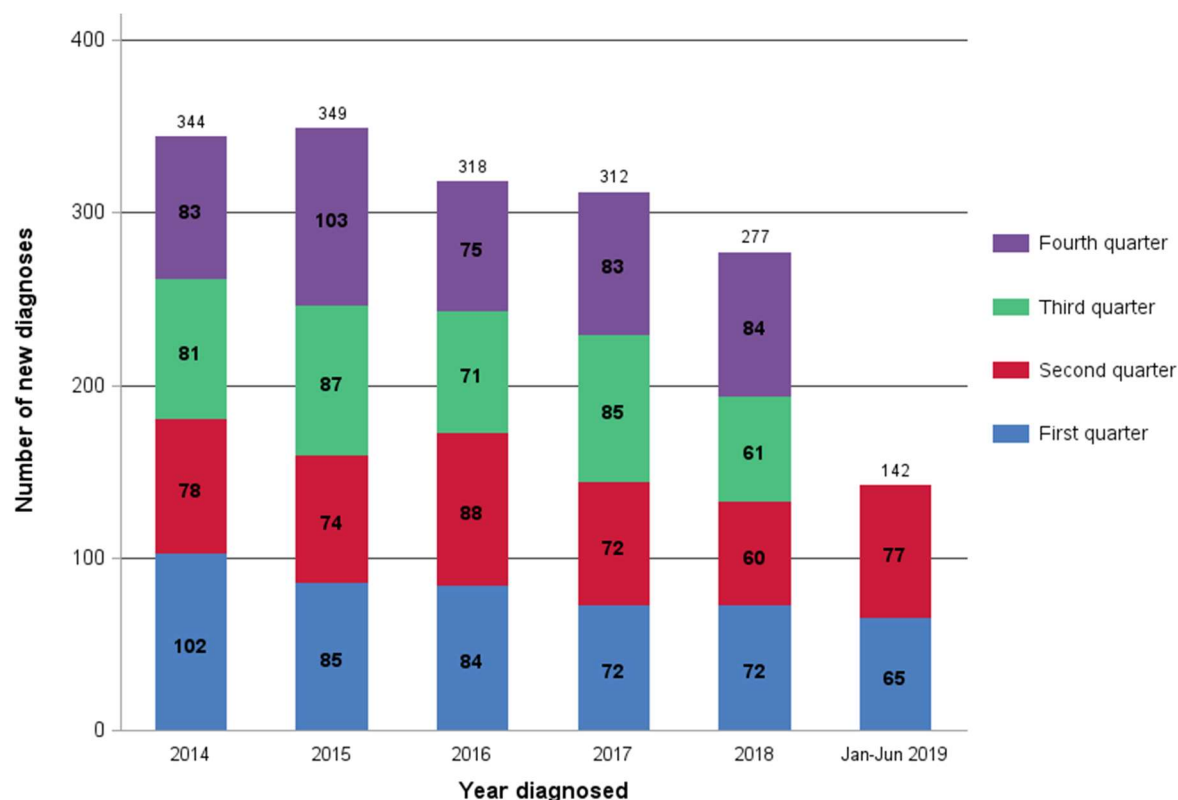
## Glossary of Terms

ART	Antiretroviral therapy
CAIC	Condomless anal intercourse with casual partners
GBM	Gay and bisexual men
HIV	Human Immunodeficiency Virus
LHD	Local Health District
MSM	Men who have sex with men
NSP	Needle and syringe program
NSW	New South Wales
PBS	Pharmaceutical Benefits Scheme
PFSHC	Publicly Funded Sexual Health Clinic
PrEP	Pre-exposure prophylaxis
PWID	People who inject drugs
Quarter 1 / Q1	1 January – 30 March
Quarter 2 / Q2	1 April – 30 June
Quarter 3 / Q3	1 July – 30 September
Quarter 4 / Q4	1 October – 31 December
SGCPS	Sydney Gay Community Periodic Survey
SVHN	St Vincent's Health Network

## 1. Reduce HIV transmission

### 1.1 How many cases are notified?

**Figure 1: Number of NSW residents with newly diagnosed HIV infection from January 2014 to June 2019**



Source: Notifiable Conditions Information Management System, Health Protection NSW, out 6 August 2019

In April to June (Q2) 2019:

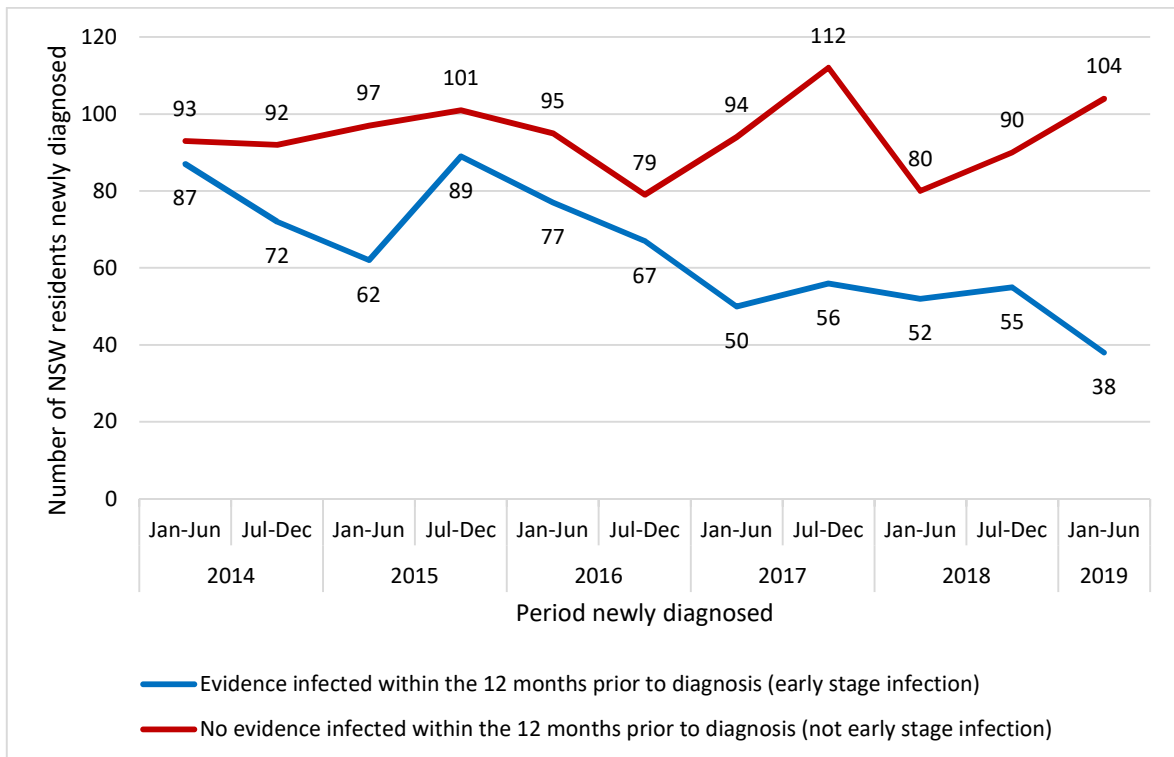
- Seventy-seven NSW residents were notified to NSW Health with a newly diagnosed HIV infection, 3% more than the Q2 2014-2018 average of 74.4 (Figure 1).
- Of 77, 17 (22%) had evidence their infection was acquired within one year of diagnosis (early stage infection), 41% less than the Q2 2014-2018 average of 28.6 (Figure 2).
- Sixty-two (81%) were men who have sex with men (MSM) and ten (13%) acquired HIV via hetero-sex (Figure 3). This is 5% more MSM, and 25% fewer heterosexuals compared with the new diagnoses averages of Q2 2014-2018 (av. n MSM = 59.0; av. n heterosexuals = 13.4).

In January to June 2019:

- One hundred and forty-two NSW residents were notified to NSW Health with newly diagnosed HIV infection, 10% fewer than the January to June 2014-2018 average of 157.4 (Figure 1).
- Of 142, 38 (27%) had evidence of early stage infection, 42% less than the January to June 2014-2018 average of 65.6 (Figure 2).
- Of 142, 114 (80%) were MSM, 20 (14%) acquired HIV via hetero-sex, three (2%) via injecting drugs and five (4%) via another exposure. This is 9% fewer MSM and 25% fewer heterosexuals compared with the new diagnoses averages of January to June 2014-2018 (av. n MSM = 125.6; av. n heterosexuals = 26.6) (Figure 3).



**Figure 2: New diagnoses January 2014 to June 2019 by evidence infected within 12 months of diagnosis**



Early stage infection: a sero-conversion like illness or negative or indeterminate HIV test within 12 months of diagnosis, irrespective of CD4 or presentation with an AIDS defining illness at diagnosis

**Figure 3: New diagnoses January 2014 to June 2019 by reported HIV risk exposure**

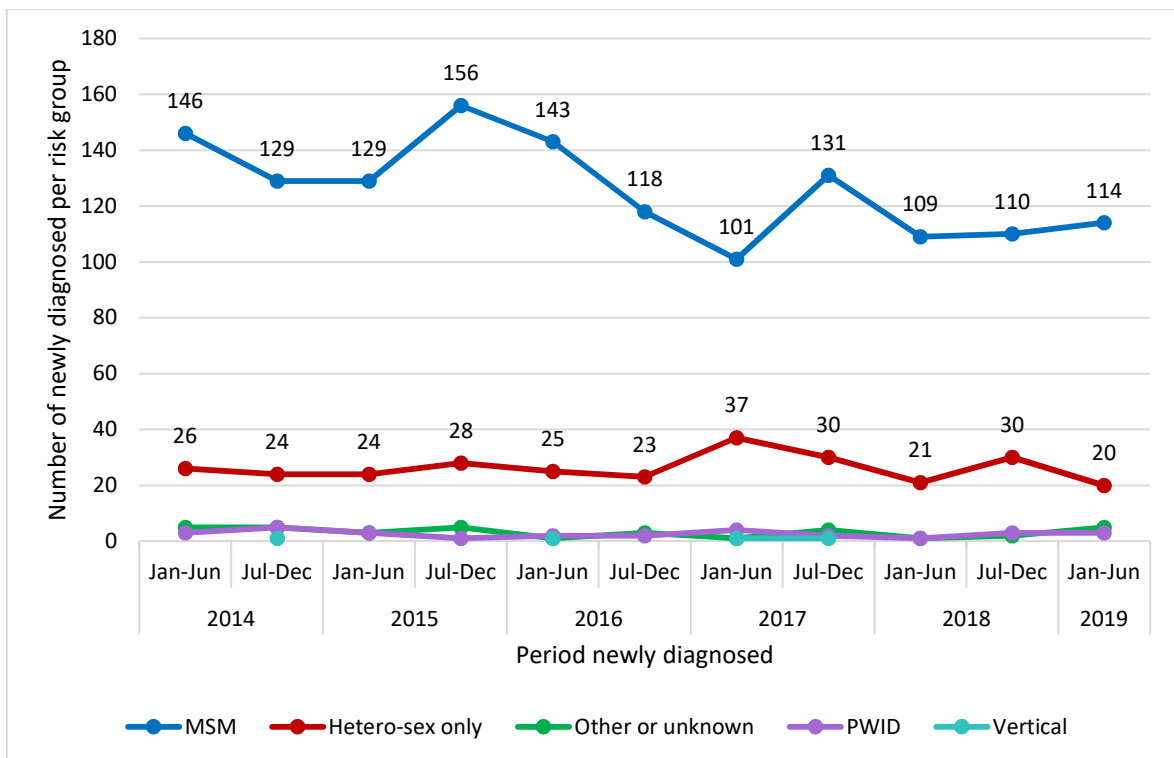
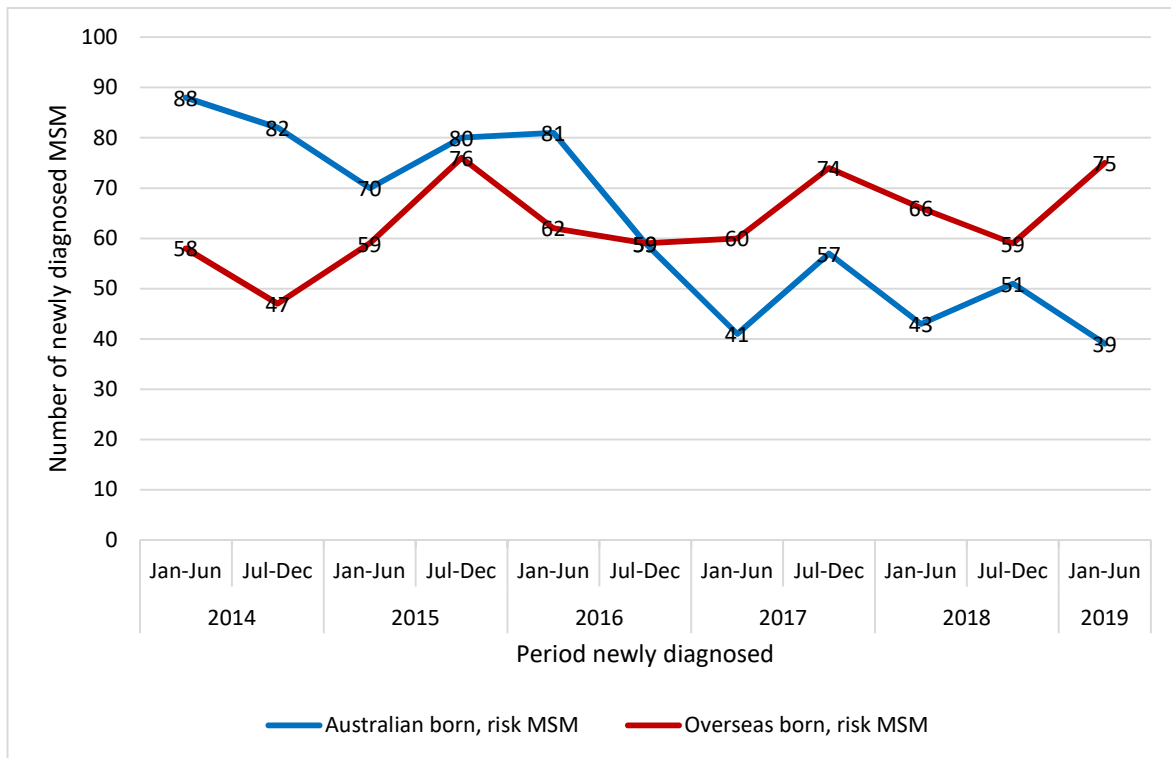


Figure 4: New diagnoses January 2014 to June 2019 in Australian versus overseas-born MSM



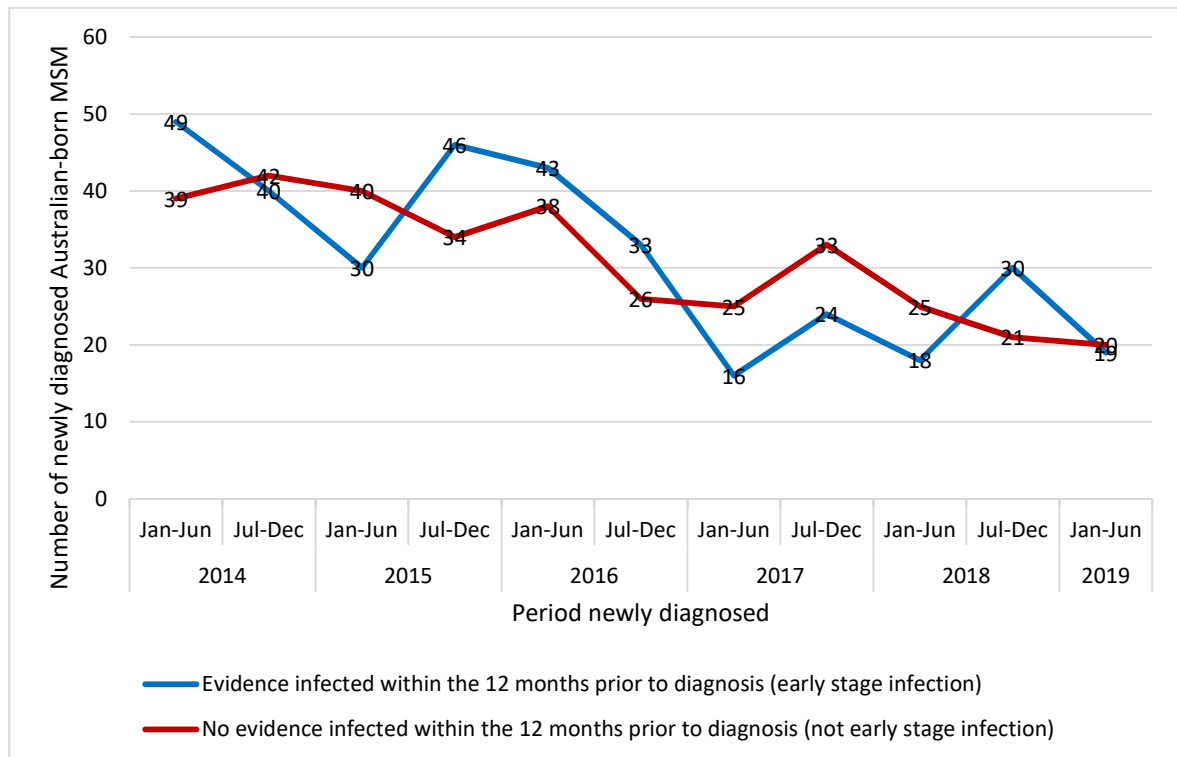
In April to June (Q2) 2019:

- Twenty-two of the 62 (35%) newly diagnosed MSM were Australian-born, which was 30% less than the average for Q2 2014-2018 (av. n=31.6) (Figure 4). Eight of 22 (36%) Australian-born newly diagnosed MSM had evidence their infection was acquired within one year of diagnosis (early stage infection), 43% less than the Q2 2014-2018 average of 14.0 (Figure 5).
- Forty of the 62 (65%) newly diagnosed MSM were overseas-born, which was 46% more than the average for Q2 2014-2018 (av. n=27.4). Eight of 40 (20%) overseas-born newly diagnosed MSM had evidence of early stage infection, 35% less than the Q2 2014-2018 average of 12.4 (Figure 6). Of eight overseas-born MSM newly diagnosed with early stage infection, five (63%) most likely acquired their infection in Australia.

In January to June 2019:

- Thirty-nine of 114 (34%) MSM newly diagnosed were Australian-born, 40% less than the average for January to June 2014-2018 (av. n=64.6) (Figure 4). Nineteen of 39 (49%) Australian-born newly diagnosed MSM had evidence of early stage infection, 39% fewer than the January to June 2014-2018 average (av. n=31.2) (Figure 5).
- Seventy-five of 114 (66%) MSM newly diagnosed were overseas-born, 23% more than the January to June 2014-2018 average (av. n=61.0). Eighteen of 75 (24%) overseas-born newly diagnosed MSM had evidence of early stage infection, a 38% reduction compared to the January to June 2014-2018 average (av. n=28.8) (Figure 6). Of 18 overseas-born MSM newly diagnosed with early stage infection, 14 (78%) most likely acquired their infection in Australia.

**Figure 5: New diagnoses January 2014 to June 2019 of Australian-born MSM by evidence infected within 12 months of diagnosis**



**Figure 6: New diagnoses January 2014 to June 2019 of overseas-born MSM by evidence infected within 12 months of diagnosis**

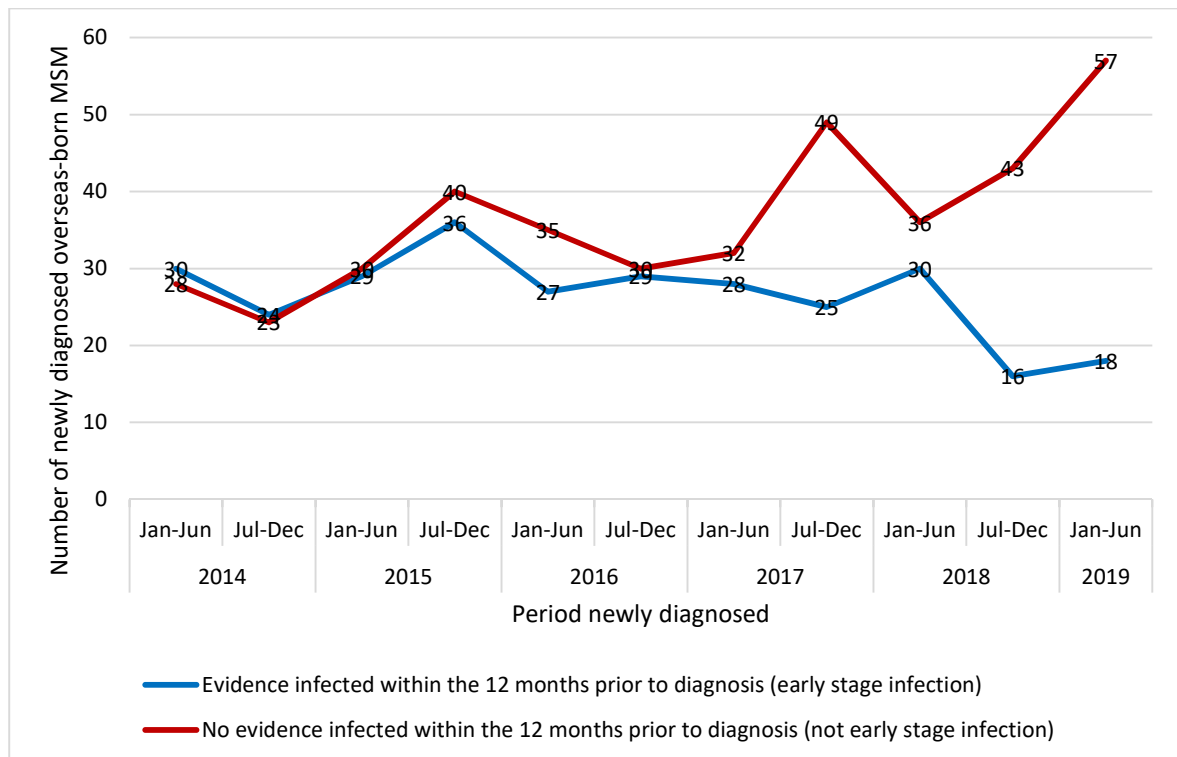
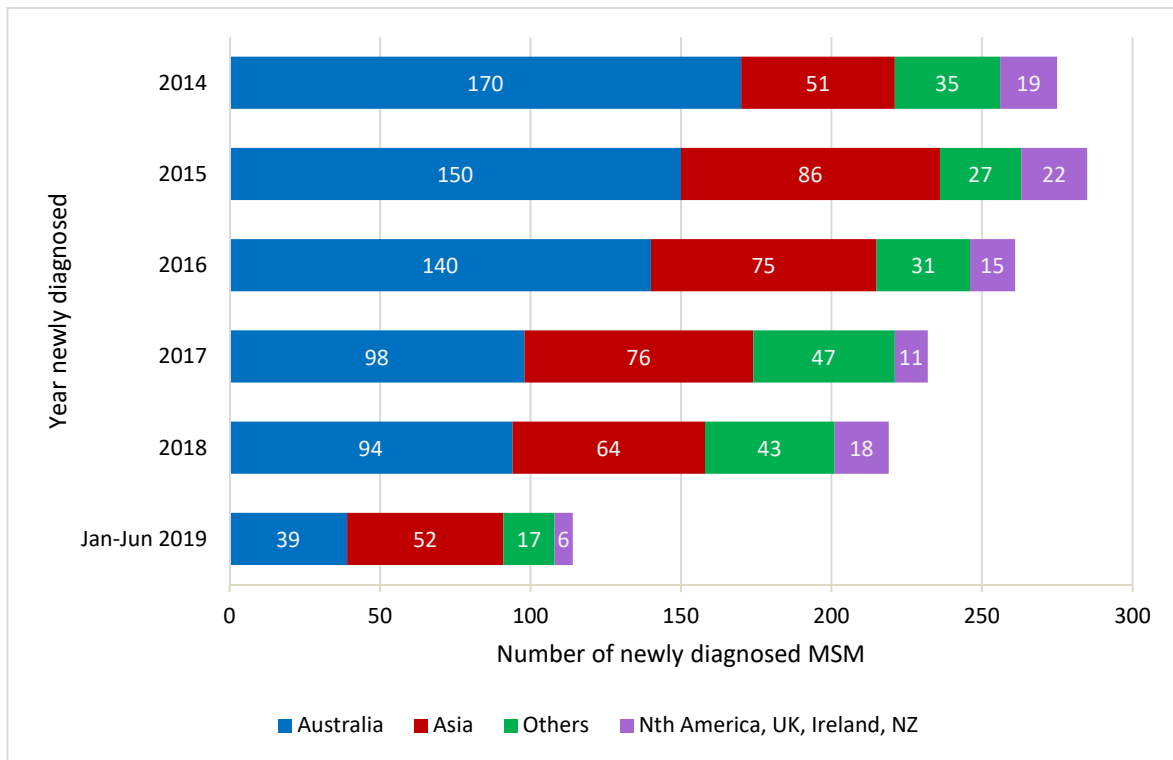


Figure 7: New diagnoses January 2014 to June 2019 of MSM by world area of birth



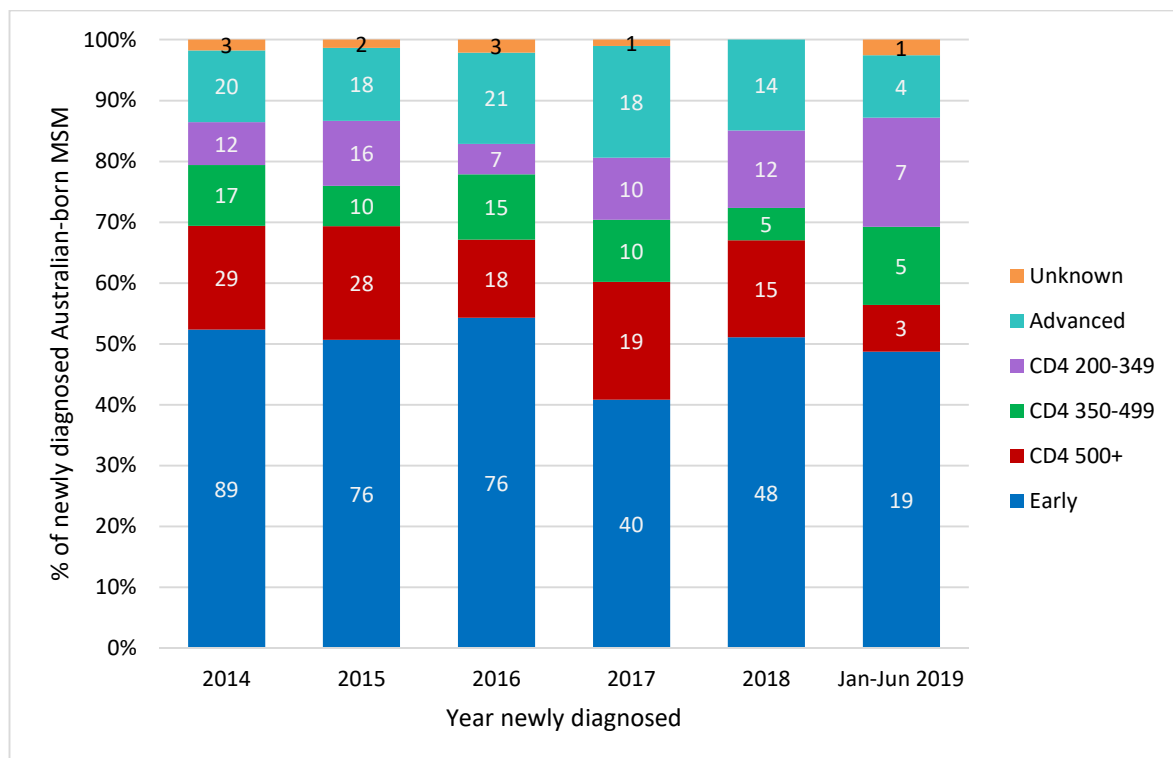
Comments on Figure 7

- Of 114 MSM newly diagnosed in NSW during January to June 2019, 34% were born in Australia, 32% in South-East Asia, 12% in Southern & Central America, 11% in North-East Asia and less than 5% in North-West Europe, Southern & Central Asia, Northern America, Oceania and Sub-Saharan Africa (Figure 7).

## 1.2 What is the stage of infection at diagnosis?

Stage of infection is reported here among Australian-born MSM (8a), overseas-born MSM (8b), and among all groups other than MSM (8c). **Early stage** infection is evidence of HIV infection acquired within 12 months of diagnosis, such as a sero-conversion illness or negative or indeterminate HIV test within 12 months of diagnosis, irrespective of CD4 or an AIDS defining illness at diagnosis. Categories **CD4 of 500+, 350-499, 200-349** exclude early and advanced stage categories. **Advanced stage** is a CD4 count less than 200 or an AIDS defining illness in absence of 'Early' criteria.

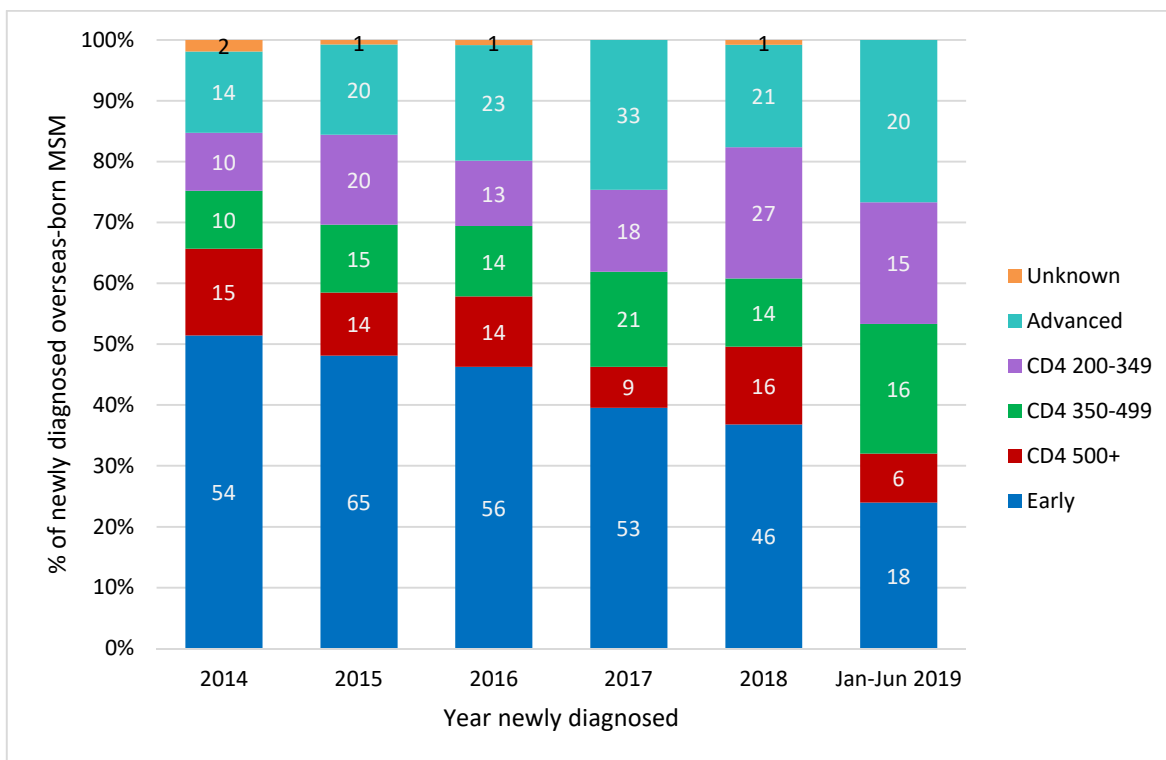
**Figure 8a: Stage of infection among Australian-born MSM newly diagnosed January 2014 to June 2019**



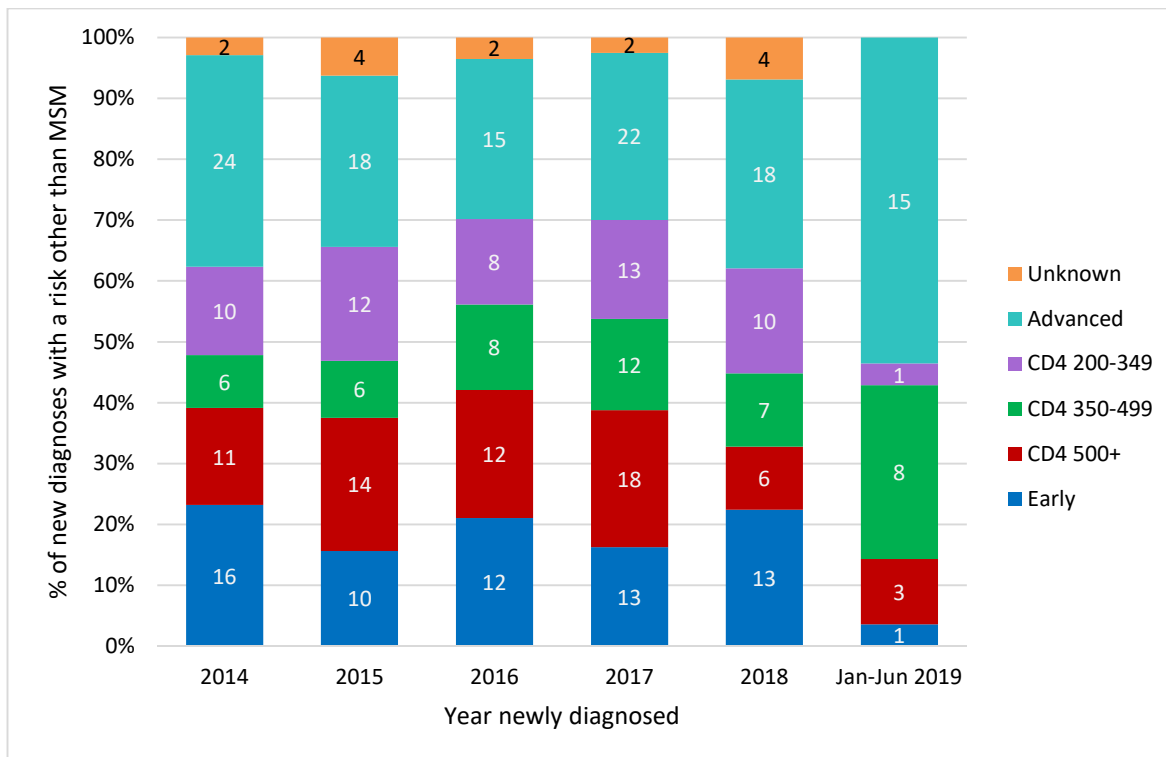
### Comment on Figures 8a-c

- Of 39 Australian-born newly diagnosed MSM in January to June 2019, 19 (49%) had evidence of early stage infection, 39% less compared to the January to June 2014-2018 average of 31.2 (Figure 8a). Eleven (28%) had late or advanced stage infection, 32% less than the comparison period (av. n=16.2) (Figure 8a).
- Of 75 overseas-born MSM newly diagnosed in January to June 2019, 18 (24%) had evidence of early stage infection, 38% less compared to the January to June 2014-2018 average of 28.8. Of these 18 early stage infections, three had been in NSW for less than 3 years, three for 3-4 years, three for 5-10 years, seven for 11 or more years and two were unknown. Thirty-five (47%) had late or advanced stage disease, 94% greater than the comparison period average of 18.0 (Figure 8b). Of these 35, 14 had been here for less than 3 years, nine for 3-4 years, seven for 5-10 years, four for 11 or more years and one was unknown.
- The number of new diagnoses in NSW residents who were not MSM was 12% lower in January to June 2019 (n=28) compared to the January to June 2014-2018 average (n=31.8). There were 16 with late and advanced stage infection at diagnosis, 4% more than the January to June 2014-2018 average of 15.4 (Figure 8c).

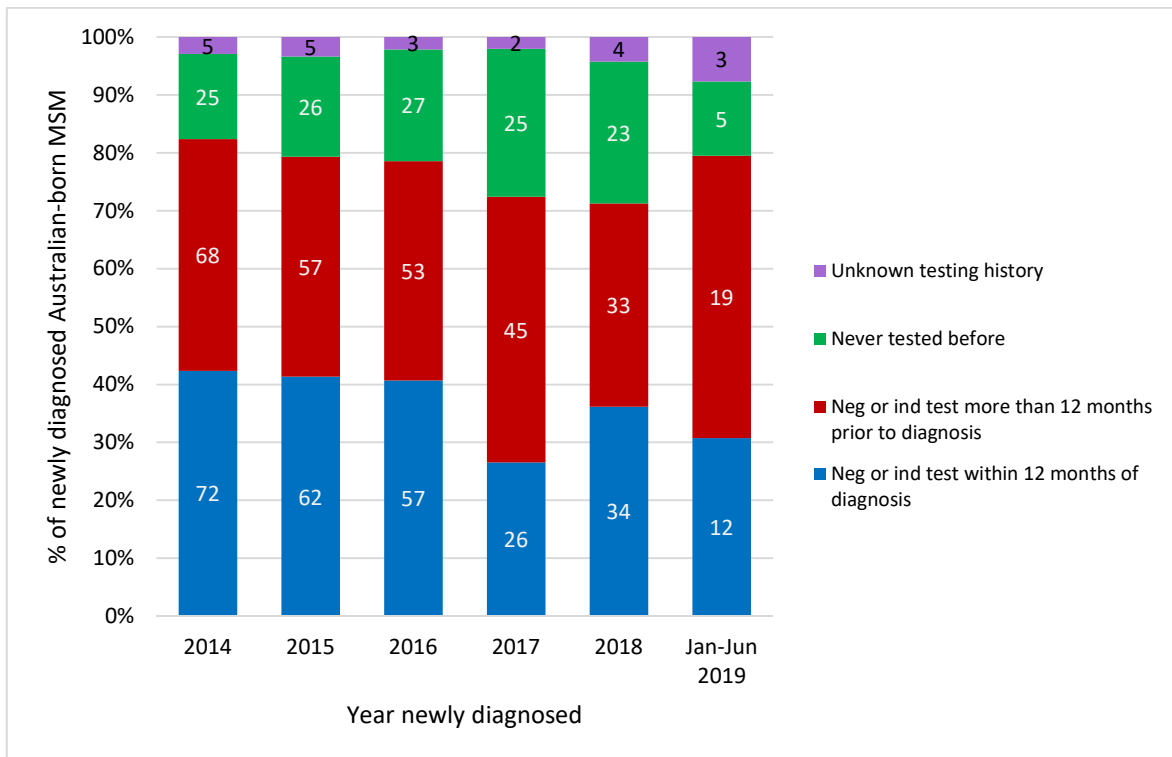
**Figure 8b: Stage of infection among overseas-born MSM newly diagnosed January 2014 to June 2019**



**Figure 8c: Stage of infection among new diagnoses January 2014 to June 2019 with a risk other than MSM**



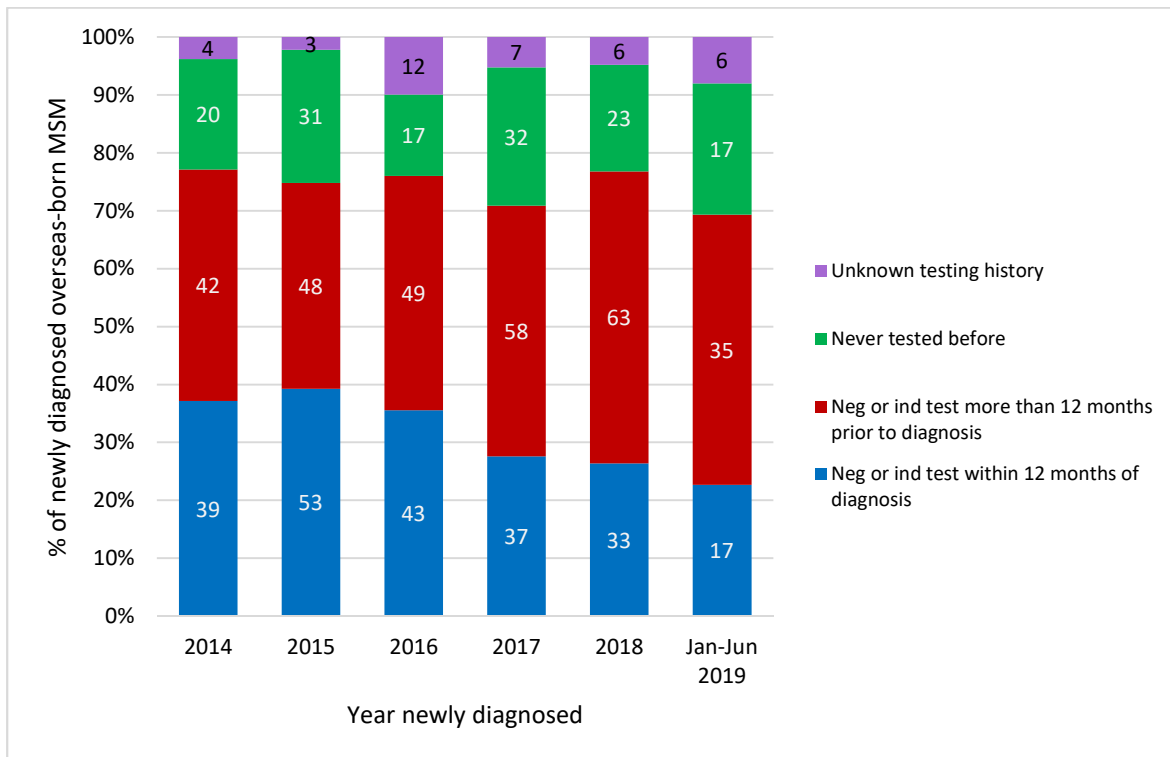
**Figure 9a: Per cent of Australian-born MSM newly diagnosed January 2014 to June 2019, by HIV testing history**



Of 39 Australian-born MSM newly diagnosed during January to June 2019:

- Twelve (31%) were reported (by a laboratory, a doctor, or the patient) to have had a negative or indeterminate HIV test within 12 months of diagnosis.
- Nineteen (49%) were reported to have had a negative or indeterminate HIV test sometime in the past, but not within 12 months of diagnosis.
- Five (13%) reported not ever having had an HIV test prior to diagnosis.
- Around two-thirds had not been testing according to guidelines.
- Twelve (31%) had evidence of late diagnosis.

**Figure 9b: Per cent of overseas-born MSM newly diagnosed January 2014 to June 2019, by HIV testing history**

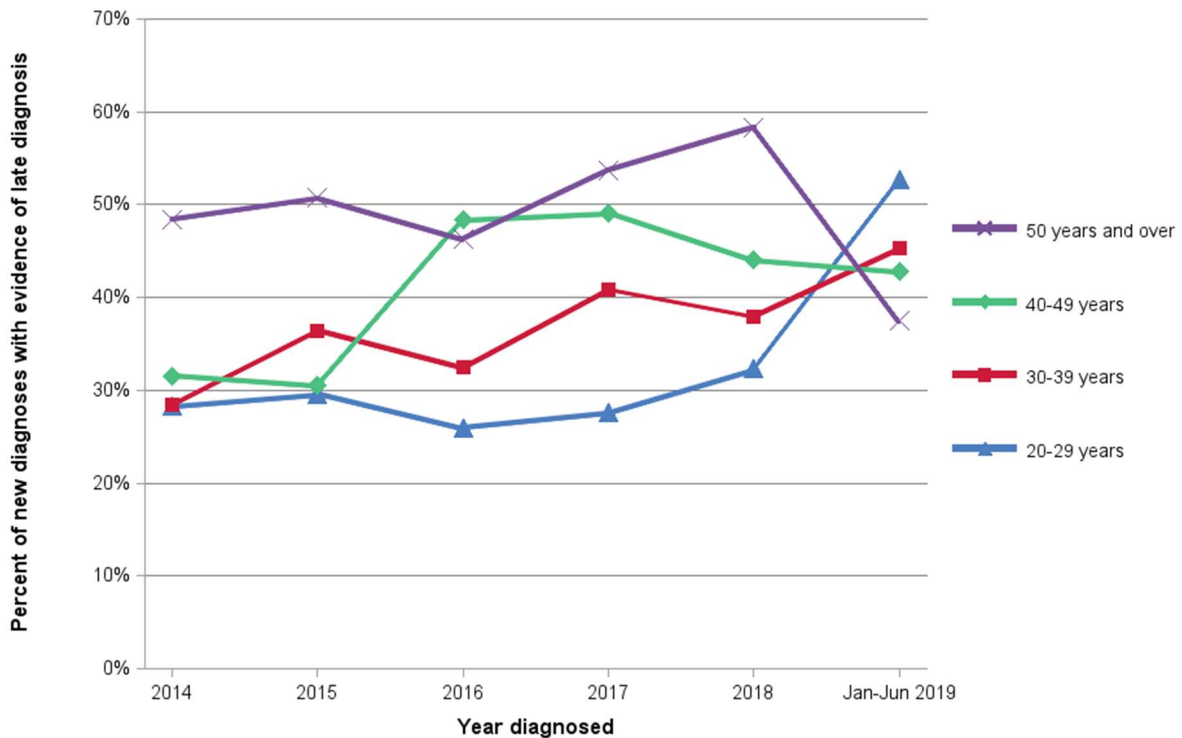


Of 75 overseas-born MSM newly diagnosed during January to June 2019:

- Seventeen (23%) were reported (by a laboratory, a doctor, or the patient) to have had a negative or indeterminate HIV test within 12 months of diagnosis.
- Thirty-five (47%) were reported to have had a negative or indeterminate HIV test sometime in the past, but not within 12 months of diagnosis.
- Seventeen (23%) reported not ever having had an HIV test prior to diagnosis.
- Over two thirds had not been testing according to guidelines.
- Thirty-five (47%) had evidence of late diagnosis.

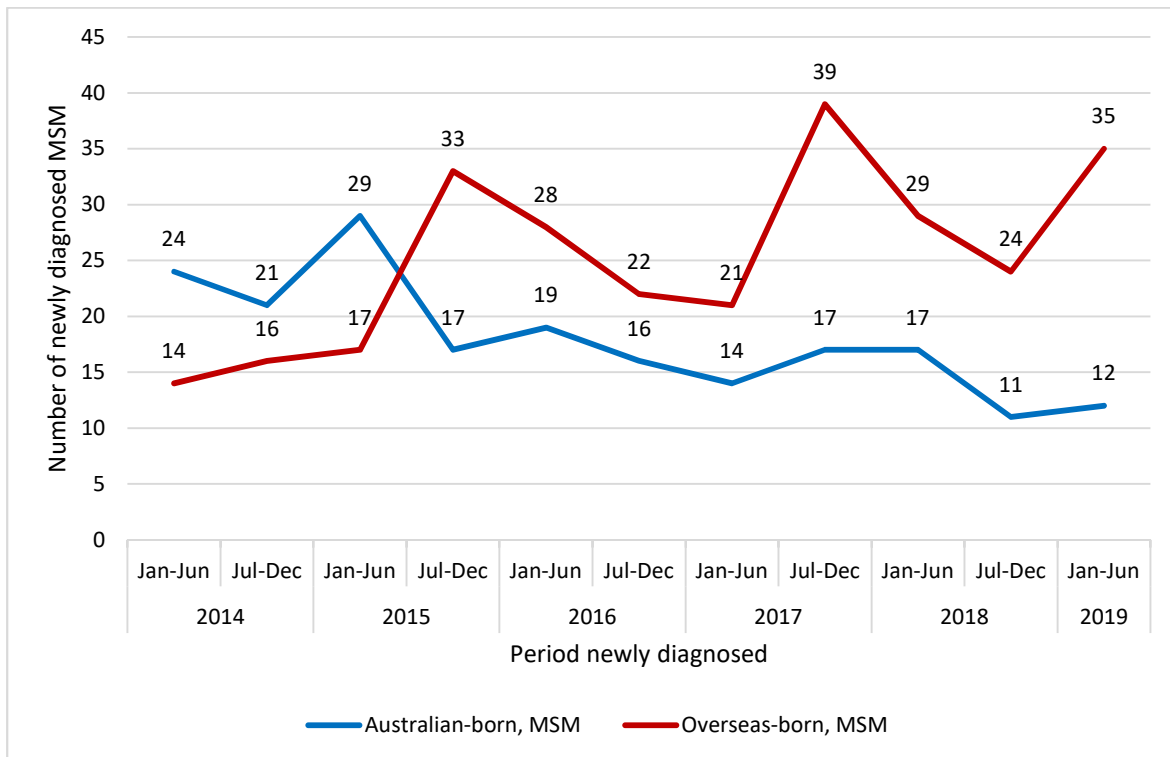


**Figure 10: Per cent of new diagnoses from January 2014 to June 2019 in each age group category with evidence of late diagnosis**



- Evidence of late diagnosis was defined as a CD4 count less than 350 or an AIDS defining illness or AIDS death within three months of diagnosis, in the absence of a laboratory confirmed negative HIV test in the 12 months prior to diagnosis.
- Of 77 people newly diagnosed in Q2 2019, 36 (47%) had evidence of late diagnosis, an increase of 21% compared with the 2014-2018 Q2 average count of 29.8.
- Of 142 people newly diagnosed in January to June 2019, 64 (45%) had evidence of late diagnosis, 9% more than the January to June 2014-2018 average count of 58.8. When separated into age groups:
  - None (0/1) of those aged 0-19 years (not shown in Figure 10)
  - 53% (19/36) of those aged 20 to 29 years
  - 45% (24/53) of those aged 30 to 39 years
  - 43% (12/28) of those aged 40 to 49 years
  - 38% (9/24) of those who were aged 50 years or over

**Figure 11: New diagnoses January 2014 to June 2019 with evidence of late diagnosis, for Australian versus overseas born MSM**



In January to June 2019:

- Of 64 people with evidence of late HIV diagnosis, 47 (73%) were MSM, an 11% increase compared with the January to June 2014-2018 average count of 42.4.
- Twelve (26%) of the 47 MSM with evidence of late diagnosis were Australian-born, a 42% decrease relative to the January to June 2014-2018 average count of 20.6 (Figure 11).
- Thirty-five (74%) of the 47 MSM with evidence of late diagnosis were overseas-born, a 61% increase relative to the January to June 2014-2018 average count of 21.8 (Figure 11).
- The majority of these overseas-born MSM were young, with 14 in the 20 to 29 age group and 16 in the 30 to 39 age group. Furthermore, most had only recently arrived in Australia, with 23 of 35 residing in Australia for four years or less.

### 1.3 What are some of the characteristics of people newly diagnosed?

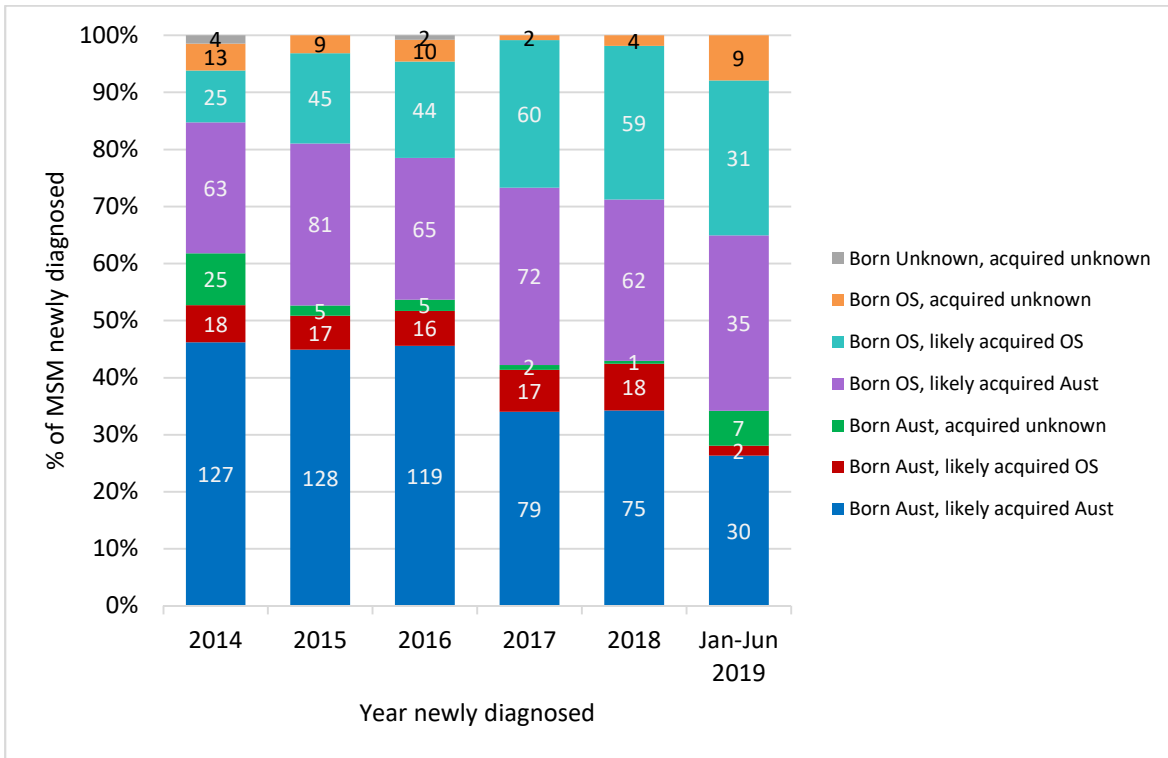
**Table 1: Characteristics of Australian-born and overseas-born MSM newly diagnosed in January to June 2019 vs the January to June 2014-2018 average count, and the count difference**

Case characteristics	Australian-born MSM			Overseas-born MSM		
	Jan-Jun 2014-2018 average	Jan-Jun 2019	Count (%) diff.	Jan-Jun 2014-2018 average	Jan-Jun 2019	Count (%) diff.
<b>Number</b>	<b>64.6</b>	<b>39</b>	<b>-25.6 (-40%)</b>	<b>61</b>	<b>75</b>	<b>+14 (+23%)</b>
<b>Gender</b>						
<i>Male</i>	64	39	-25 (-39%)	60	70	+10 (+17%)
<i>Transgender</i>	0.6	0	-0.6 (-100%)	1	5	+4 (+400%)
<b>Age at diagnosis</b>						
<i>0 to 19</i>	0.4	0	-0.4 (-100%)	1	1	0 (0%)
<i>20 to 29</i>	20.4	8	-12.4 (-61%)	22	25	+3 (+14%)
<i>30 to 39</i>	15.8	14	-1.8 (-11%)	22.4	34	+11.6 (+52%)
<i>40 to 49</i>	14.2	8	-6.2 (-44%)	9.6	9	-0.6 (-6%)
<i>50 and over</i>	13.8	9	-4.8 (-35%)	6	6	0 (0%)
<b>Evidence of early stage infection<sup>1</sup></b>						
<i>Yes</i>	31.2	19	-12.2 (-39%)	28.8	18	-10.8 (-38%)
<i>No</i>	33.4	20	-13.4 (-40%)	32.2	57	+24.8 (+77%)
<b>Evidence of late diagnosis<sup>2</sup></b>						
<i>Yes</i>	20.6	12	-8.6 (-42%)	21.8	35	+13.2 (+61%)
<i>No</i>	43	26	-17 (-40%)	38.4	40	+1.6 (+4%)
<i>Unknown</i>	1	1	0 (0%)	0.8	0	-0.8 (-100%)
<b>Place most likely acquired HIV</b>						
<i>Australia</i>	53	30	-23 (-43%)	33.8	35	+1.2 (+4%)
<i>Overseas</i>	7.6	2	-5.6 (-74%)	21.8	31	+9.2 (+42%)
<i>Unknown</i>	4	7	+3 (+75%)	5.4	9	+3.6 (+67%)
<b>Reported HIV risks</b>						
<i>MSM</i>	57.4	33	-24.4 (-43%)	58.6	69	+10.4 (+18%)
<i>MSM and IDU</i>	7.2	6	-1.2 (-17%)	2.4	6	+3.6 (+150%)

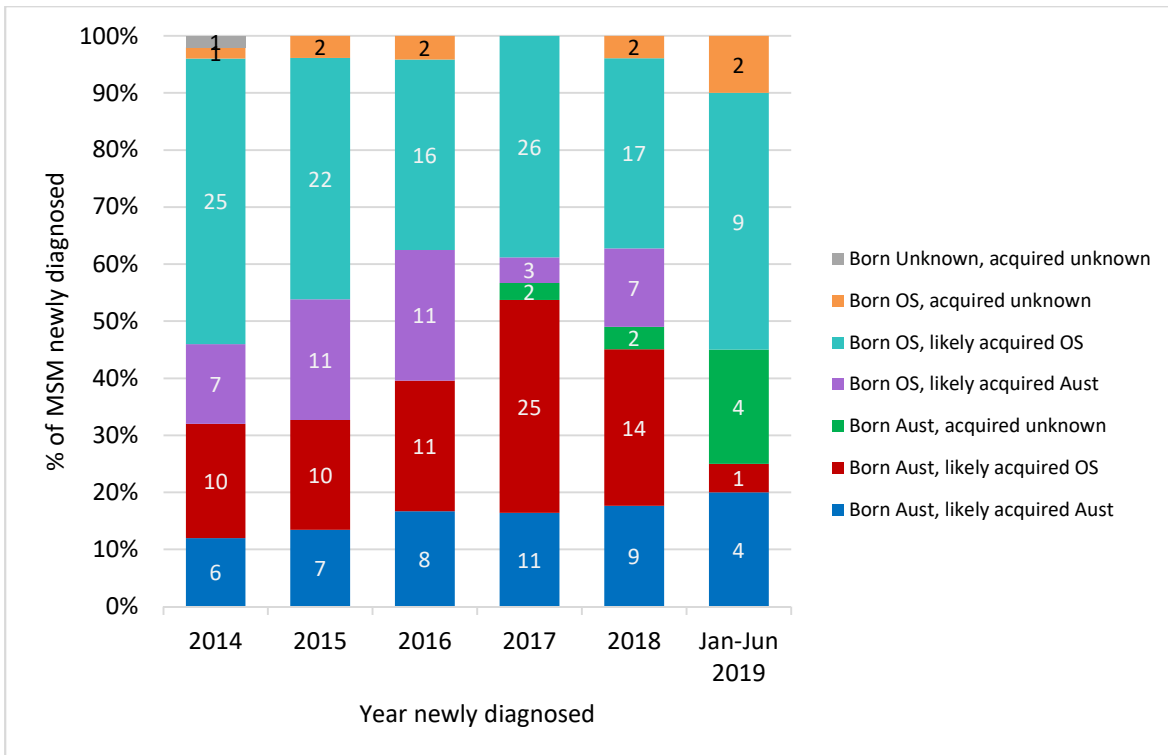
<sup>1</sup>Evidence of early stage infection/being infected in the 12 months prior to diagnosis: a sero-conversion illness or negative or indeterminate HIV test within 12 months of diagnosis, irrespective of CD4 or an AIDS defining illness at diagnosis.

<sup>2</sup>Evidence of a late diagnosis: a CD4 count less than 350 or an AIDS defining illness or AIDS death within three months of diagnosis, in the absence of a laboratory confirmed negative HIV test in the 12 months prior to diagnosis.

**Figure 12a: Per cent of men who have sex with men newly diagnosed January 2014 to June 2019 by place born and place most likely acquired HIV**



**Figure 12b: Per cent of heterosexual people newly diagnosed January 2014 to June 2019 by place born and place most likely acquired HIV**



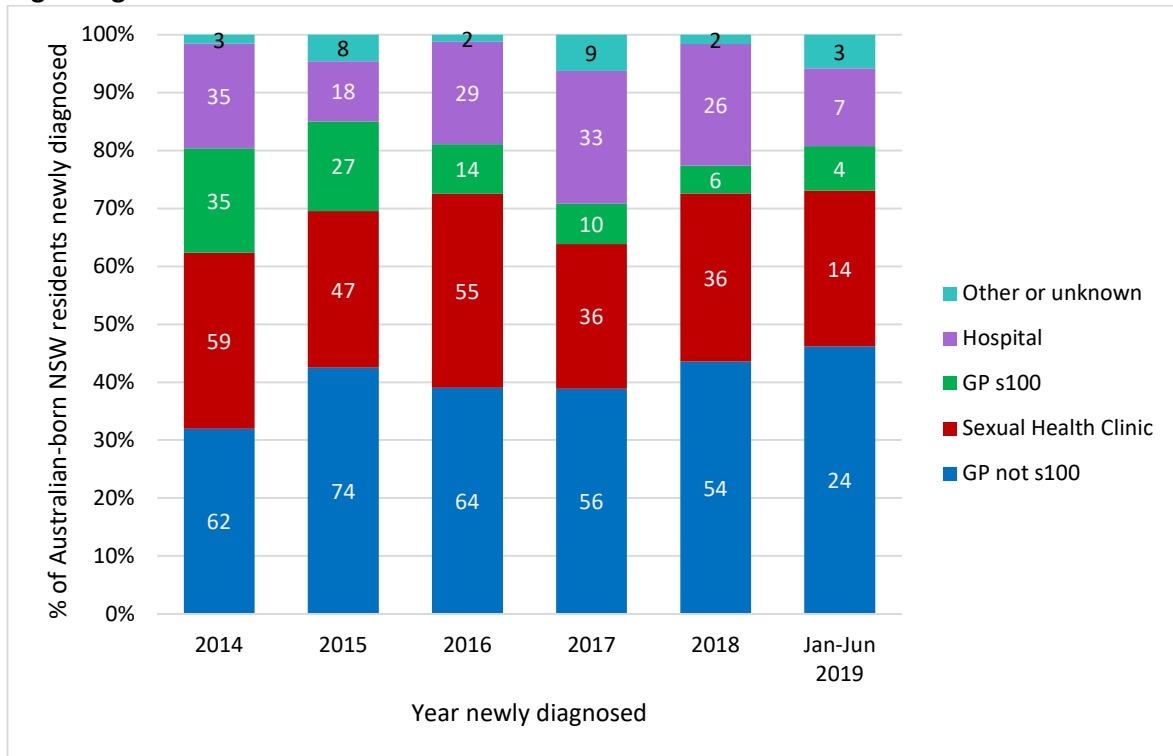
Of 114 MSM newly diagnosed in January to June 2019 (Figure 12a):

- Thirty-nine (34%) were Australian-born, 40% less than the average of 64.6 for January to June 2014-2018. Thirty of these Australian-born MSM likely acquired HIV in Australia, 43% less than the January to June 2014-2018 average of 53.0, and two likely acquired HIV overseas, 74% less than in the comparison period (av. n=7.6).
- Seventy-five (66%) were born overseas, 23% more than the average of 61.0 for January to June 2014-2018. Thirty-five of these overseas-born MSM likely acquired HIV in Australia, 4% more than the average for January to June 2014-2018 (av. n=33.8), and 31 likely acquired HIV overseas, 42% more than the comparison period (av. n=21.8).

Of 20 heterosexual people newly diagnosed in January to June 2019 (Figure 12b):

- Nine were Australian-born, a 22% decrease compared to the average of 11.6 for January to June 2014-2018.
- Eleven were born overseas, 27% less than the average of 15.0 for January to June 2014-2018.

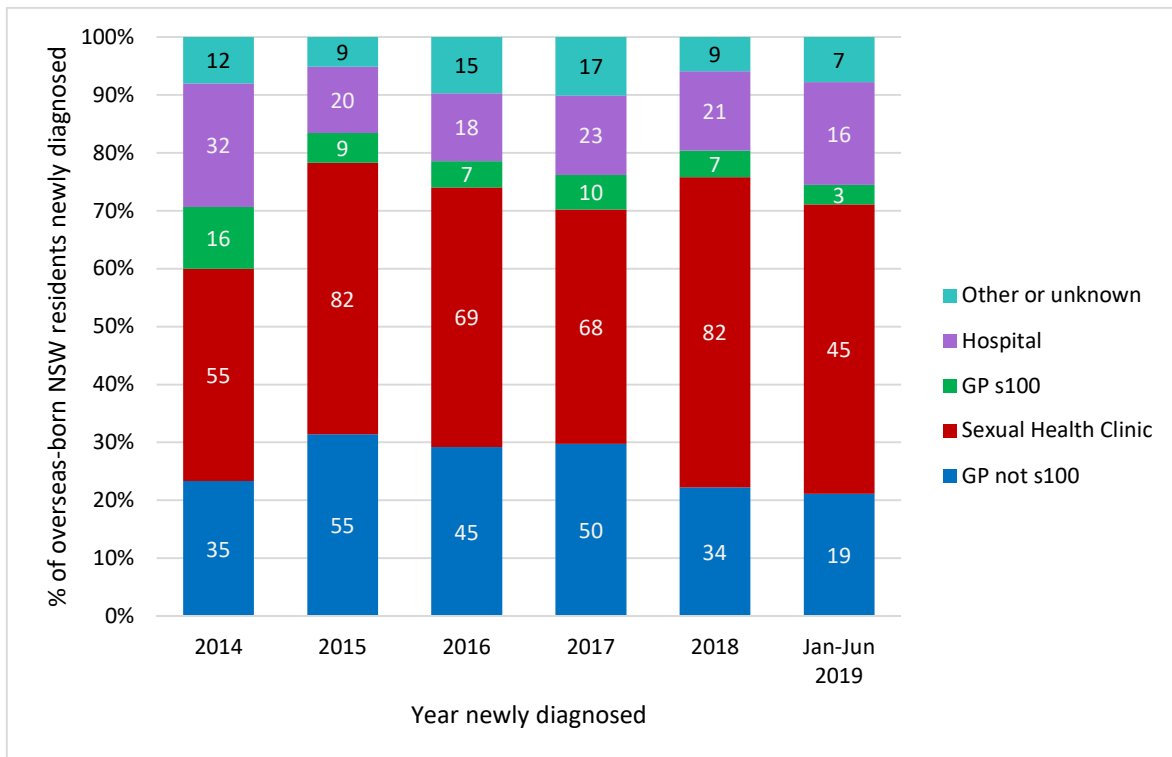
**Figure 13a: Per cent of Australian-born new diagnoses January 2014 to June 2019 by type of diagnosing doctor**



Of 52 Australian-born NSW residents with newly diagnosed HIV infection in January to June 2019 (Figure 13a):

- Twenty-four (46%) were diagnosed by general practitioners (GPs) not accredited to prescribe antiretroviral therapy (GP not-s100), 28% less than the comparison period (av. n=33.2);
- Fourteen (27%) were diagnosed by sexual health centres including community testing sites, 36% less than the January to June 2014-2018 average (av. n=22.0);
- Seven (13%) were diagnosed by hospital doctors, 50% less than the comparison period (av. n=14.0);
- Four (8%) were diagnosed by GP s100 doctors (HIV specialised and accredited to prescribe ART), 44% less than 7.2, the average for January to June 2014-2018, and;
- Three (5%) were diagnosed by another doctor type, similar to the average in January to June 2014-2018 (av. n=2.8).

**Figure 13b: Per cent of overseas-born new diagnoses January 2014 to June 2019 by type of diagnosing doctor**



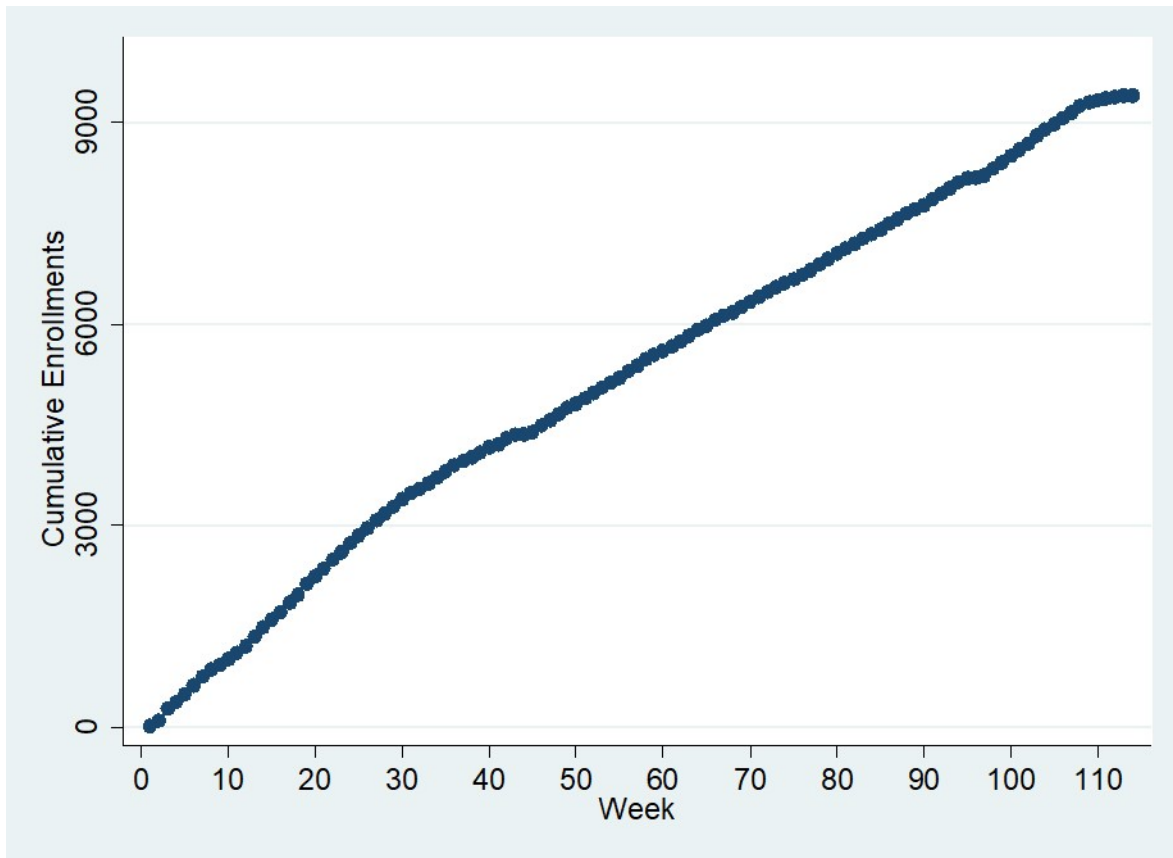
Of 90 overseas-born NSW residents with newly diagnosed HIV infection in January to June 2019 (Figure 13b):

- Nineteen (21%) were diagnosed by non s100 GPs, 7% less than the comparison period (av. n=20.4);
- Forty-five (50%) were diagnosed by sexual health centres including community testing sites, 34% more than the January to June 2014-2018 average (av. n=33.6);
- Sixteen (18%) were diagnosed by hospital doctors, 23% more than the comparison period (av. n=13.0);
- Three (3%) were diagnosed by a GP s100 doctor, 48% less than 5.8, the average for January to June 2014-2018;
- Seven (8%) were diagnosed by other doctor types, 30% more than the average in January to June 2014-2018 (av. n=5.4).

## 2. Expand HIV Prevention

### 2.1 Who is accessing PrEP through EPIC-NSW?

Figure 14: Cumulative NSW enrolments per week, from 1 March 2016 to 30 April 2018



#### Comments on Figure 14:

- Overall, 9,407 participants were enrolled at NSW sites in EPIC-NSW between 1 March 2016 and 30 April 2018.
- No new HIV diagnoses have been made in EPIC-NSW participants who continued to take PrEP as directed throughout the trial.
- Participating clinics were: Albion Street (SESLHD), Albury Sexual Health (MLHD), Brookong Centre Wagga (MLHD), Clinic 16 (NSLHD), Coffs Harbour Sexual Health (MNCLHD), Dubbo Sexual Health (WNSW LHD), Dr Doong's Surgery, East Sydney Doctors, Holdsworth House, Hunter New England Sexual Health (HNE LHD), Holden Street Clinic (CCLHD), Illawarra Shoalhaven Sexual Health (ISLHD), Kirketon Road Centre (SESLHD), Lismore Sexual Health Clinic (NNSW LHD), Liverpool Sexual Health (SWSLHD), MacCleay Street Medical Practice, Nepean Sexual Health and HIV Clinics (NBMLHD), Orange Sexual Health (WNSW LHD), RPA Sexual Health (SLHD), Short Street Clinic (SESLHD), St Vincent's Hospital (SVHN), Sydney Sexual Health Centre (SESLHD), Taylor Square Private Clinic, Western Sydney Sexual Health (WSLHD).

**Table 2: Demographic data for EPIC-NSW participants enrolled between 1 March 2016 – 30 April 2018 (not including screen fails and duplicates. N=9,407)**

Characteristic	N	%
<b>Gender</b>		
Male	9,260	98.4
Female	15	0.2
Transgender, male-to-female	65	0.7
Transgender, female-to-male	26	0.3
Other	41	0.4
<b>Total</b>	<b>9,407</b>	<b>100.0</b>
<b>Sexual identity</b>		
Gay/Homosexual	8,601	91.4
Bisexual	653	6.9
Heterosexual	54	0.6
Other <sup>a</sup>	98	1.0
<b>Total</b>	<b>9,407</b>	<b>100.0</b>
<b>Age at enrolment (years)</b>		
Median (Inter-quartile range)	34 (28 to 43)	
<b>Age group</b>		
18-24	1,097	11.7
25-34	3,774	40.1
35-44	2,455	26.1
≥45	2,081	22.1
<b>Total</b>	<b>9,407</b>	<b>100.0</b>
<b>Aboriginal and/or Torres Strait Islander status</b>		
Non-Indigenous <sup>a</sup>	8,022	85.3
Aboriginal and/or Torres Strait Islander	119	1.3
Missing	1,266	13.5
<b>Total</b>	<b>9,407</b>	<b>100.0</b>
<b>Country/Region of birth</b>		
Australia	4,862	51.7
Canada, Ireland, NZ, US, UK	1,044	11.1
Asia	1,222	13.0
Europe (excluding UK and Ireland)	359	3.8
Africa	151	1.6
South America, Central America & the Caribbean	337	3.9
Other countries	174	1.9
Missing	1,228	13.1
<b>Total</b>	<b>9,407</b>	<b>100.0</b>
<b>Proportion of gay men in suburb <sup>c</sup></b>		
≥20% gay men	2,943	31.3
10-20% gay men	854	9.1
5-10% gay men	1,128	12.0
<5% gay men	4,368	46.4
Missing	114	1.2
<b>Total</b>	<b>9,407</b>	<b>100.0</b>

<sup>a</sup> Other sexual identity includes pansexual, bicurious, queer, no preference/non-identifying;



b Note: If Indigenous status was not available but participant was born outside of Australia, it was assumed the participant was not of Aboriginal or Torres Strait Islander background (n=815).

c Based on data presented in "Callander D, Mooney-Somers J, Keen P, Guy R, Duck T, Bavinton BR, et al. Australian 'gayborhoods' and 'lesborhoods': a new method for estimating the number and prevalence of adult gay men and lesbian women living in each Australian postcode. Submitted International Journal of Geographical Information Science - Manuscript ID IJGIS-2019-0158. Submitted 23/3/2019"

### Comments on Table 2

- This analysis includes 9,407 NSW participants who were enrolled into the study between 1 March 2016 and 30 April 2018.
- Nearly all participants were male (99%), 93% identified as gay/homosexual, the median age of participants was 34 years, 31% resided in suburbs with  $\geq 20\%$  gay men, and 52% were Australian born.

### **PrEP use over time by EPIC-NSW participants**

Longitudinal data on PrEP use throughout the EPIC-NSW study were extracted from the dispensing logs that were collected at the end of the study in March 2019. Overall, 9,596 individuals were enrolled in EPIC-NSW and dispensed PrEP at least once.

**Table 3: Mean quarterly medication possession ratio (MPR) in the EPIC-NSW study**

Dispensing interval (days from first dispensing)	n	Mean MPR	95% confidence interval
0-90	9,586*	.93	0.926 – 0.934
91-180	8,645	.82	0.813 – 0.827
181-270	7,585	.76	0.751 – 0.769
271-360	6,503	.72	0.710 – 0.730
361-450	5,563	.69	0.679 – 0.701
451-540	4,559	.68	0.668 – 0.692
541-630	3,783	.66	0.646 – 0.674
631-720	2,520	.64	0.623 – 0.657
721-810	962	.63	0.602 – 0.658

\*10 participants were first dispensed PrEP after 20/4/2018

### Comment on Table 3

- Dispensing logs were available for all 9,596 participants (100%) who were dispensed with TDF/FTC at least once by 30/04/2018. The majority of participants who were enrolled and not dispensed PrEP (n=113; 1.2%) had a script written but did not fill their PrEP prescription.
- As a measure of PrEP adherence, medication possession ratio (MPR) was calculated. Quarterly MPR (with date of first dispensing being 'day 0') is shown in Table 3.
- Overall, TDF/FTC adherence as measured by MPR was generally high among EPIC-NSW participants. During study follow-up, the majority of participants had sufficient TDF/FTC in possession to allow daily dosing.

## 2.2 What is the prevalence of STIs among EPIC-NSW participants?

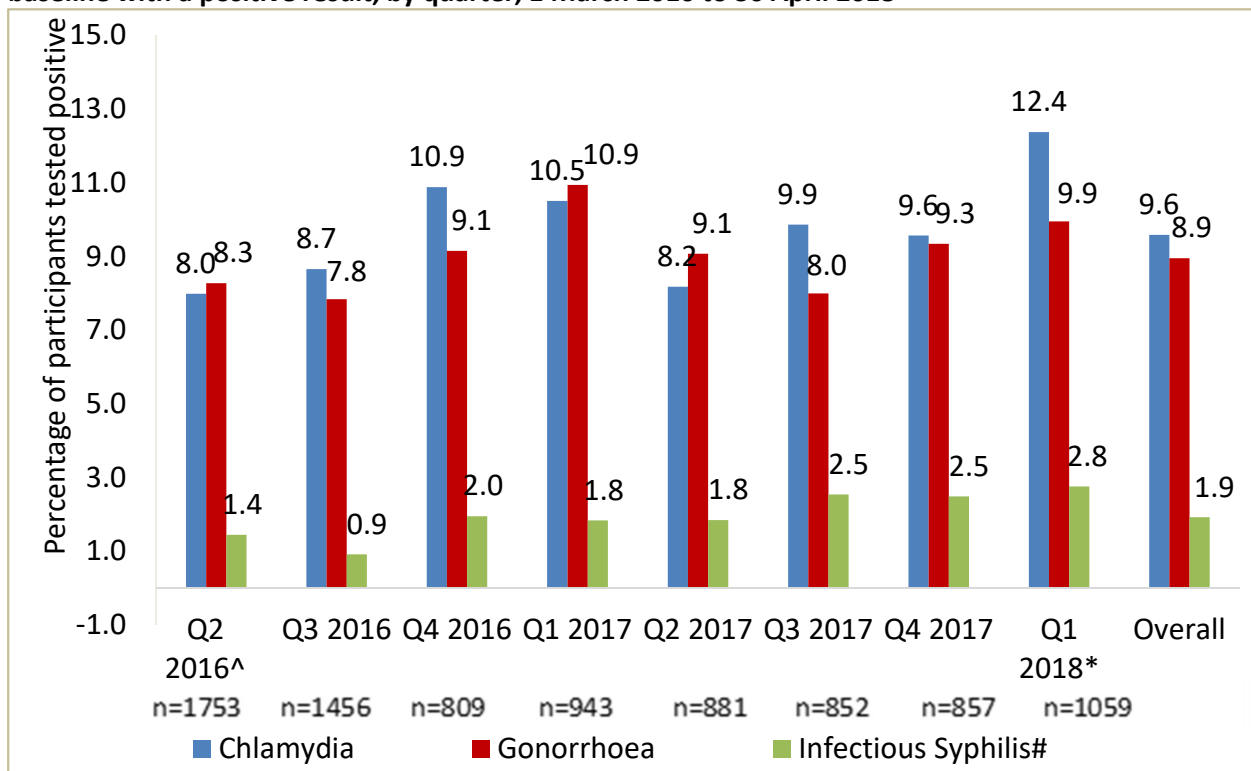
### EPIC-NSW Report to NSW Health: STI prevalence at enrolment

Monitoring the STI prevalence of EPIC-NSW participants when enrolled in the study provides a marker of sexual risk, and how well the program was targeted to individuals at high risk of HIV. STI prevalence is defined here as the proportion of individuals tested for an STI who had a positive result.

Of the 9,407 participants enrolled in the EPIC-NSW Study, STI testing data were available for 8,707 (89.7%) participants. Gonorrhoea and chlamydia data were available from all sites. Infectious syphilis diagnosis was based on combined clinical and laboratory data and could only be estimated at public sites. The number of sites included in each quarter has increased over time, and data are now able to be extracted from all sites that are part of the ACCESS network.

STI tests are included in the analysis if they were conducted within 3 weeks of the enrolment date and recorded in the standard test result fields at the enrolment clinic or at another clinic within ACCESS network (captured via data linkage between ACCESS sites).

**Figure 15: Proportion of individuals tested for chlamydia, gonorrhoea and infectious syphilis# at baseline with a positive result, by quarter, 1 March 2016 to 30 April 2018**



<sup>^</sup>Q2 2016 data was from 1 March 2016 to 30 June 2016 (four months)

<sup>\*</sup>Q1 2018 data was from 1 January 2018 to 30 April 2018 (four months)

<sup>#</sup>Infectious syphilis was based on a combination of pathology test results and clinical information and was available from public clinics only.

### Comment on Figure 15

Overall, of the EPIC-NSW participants tested for STIs at baseline between 1 March 2016 and 30 April 2018:

- 9.6% and 8.9% had a positive test result for chlamydia and gonorrhoea respectively
- The diagnosis rate for infectious syphilis in public clinics was 1.9%.

STI positivity at baseline remained high and reasonably stable over time, suggesting that the EPIC-NSW study continued to recruit higher-risk individuals throughout the enrolment period.

## **2.3 How many people were prescribed PrEP on the Pharmaceutical Benefits Scheme (PBS)?**

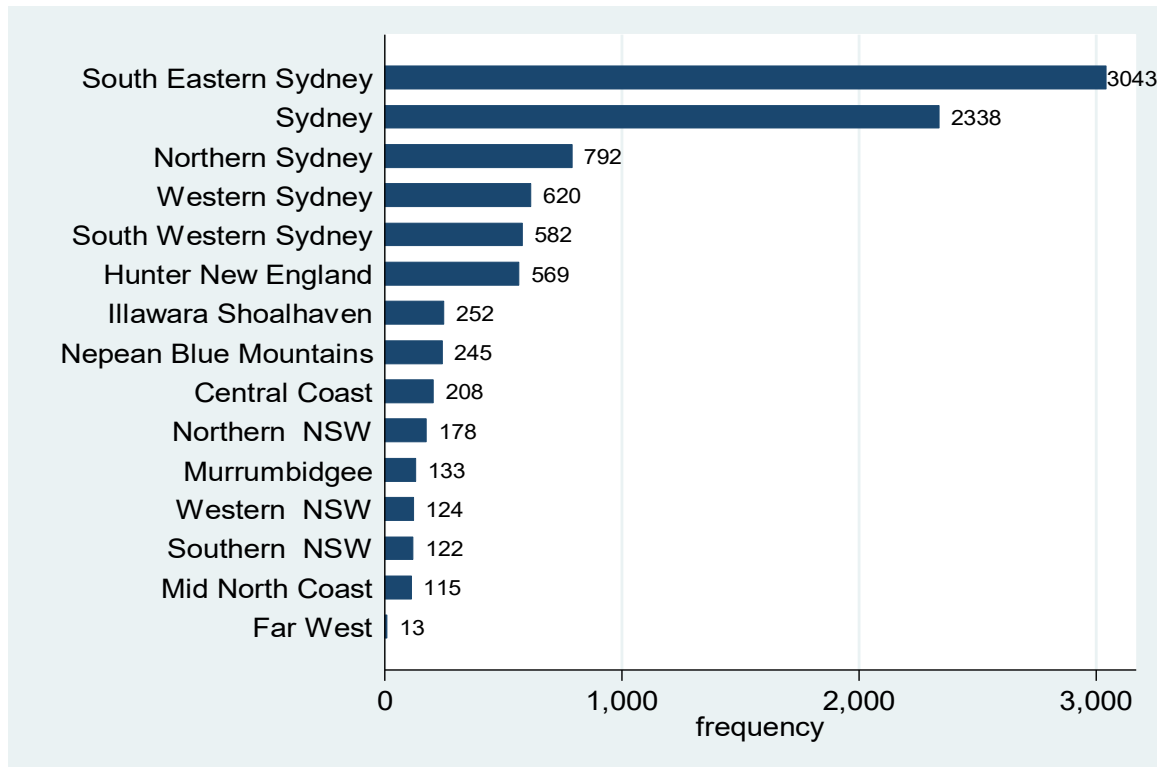
PrEP was listed on the PBS on 1 April 2018, making it accessible to people at high and medium risk of HIV infection through community pharmacies.

A PrEP transition plan has been implemented to support EPIC-NSW participant access to PBS PrEP, and to support expanded and ongoing access to PrEP throughout NSW.

Between 1 April and 31 March 2019:

- A total of 9,334 (unique number) NSW residents were dispensed PrEP for HIV prevention from April 2018.
- Of the 9,334 residents on PrEP, 99.2% were male. The distribution among age groups included: 88 (0.9%) between 0 and 19 years old; 2,303 (24.7 %) between 20 and 29; 3,187 (34.1%) between 30 and 39; 2,087 (22.4%) between 40 and 49; and 1,669 (17.9%) aged older than 50 years old.
- Between 1 April and 31 March 2019, among those who initiated PrEP treatment, 77.0% were prescribed by GP; 99.0% were dispensed by a community pharmacy.

**Figure 16: The Number of NSW residents dispensed PrEP by LHDs of patient residence from 1 April to 31 March 2019<sup>1</sup>**



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme (PBS) data from April 2018 to March 2019.

Note: The number of patients dispensed via community and public hospital pharmacies may add to a figure greater than the overall unique patients as some patients receive treatment from more than one pharmacy type within a year. Due to boundary changes or movements in and or out of NSW, the overall unique number of individuals presented in the above graph may differ slightly from previous reports.

#### Comments on Figure 16

- About 85% of people dispensed PrEP under the PBS in NSW between 1 April and 31 March 2019 were residents of South Eastern Sydney (33.0%) and Sydney LHDs (25.0%), followed by Northern Sydney (8.5%), Western Sydney (6.6%), South Western Sydney (6.2%) and Hunter New England (6.1%).

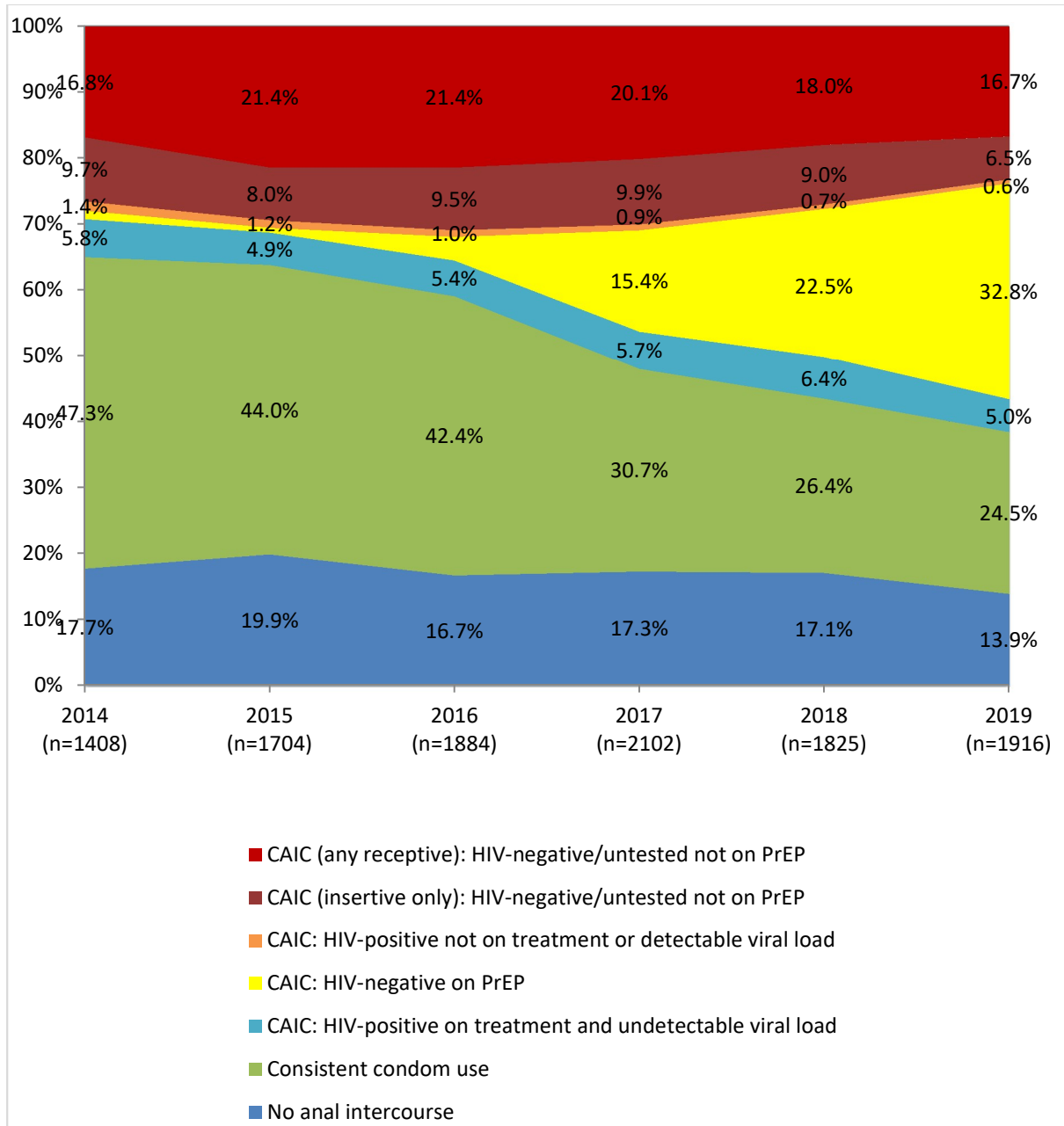
## 2.4 How many men who have sex with men use condoms and other HIV risk reduction practices?

Condom use and other HIV risk reduction strategies used by gay and bisexual men are measured through the annual Sydney Gay Community Periodic Survey (SGCPS), conducted each year during February/March. With the introduction of pre-exposure prophylaxis (PrEP) in NSW and the focus on the preventative benefits of HIV treatment in the current NSW HIV Strategy, reporting of condomless anal intercourse with casual partners (CAIC) in the SGCPS has been modified, distinguishing between

<sup>1</sup> PrEP data become available from PBS since April 2018.

HIV-positive men who are virally suppressed or not and HIV-negative men who are protected by PrEP or not.

**Figure 17: Proportion of gay and bisexual men with casual partners reporting consistent condom use, biomedical prevention and any condomless anal intercourse in the previous six months, 2014 to 2019**



Data source: Sydney Gay Community Periodic Survey, Centre for Social Research in Health, UNSW Sydney.

Note: CAIC = condomless anal intercourse with casual male partners. Consistent condom use includes men who report condom use for anal sex with casual male partners in the 6 months prior to survey and no condomless anal intercourse with those partners.

### Comment on Figure 17

- The SGCPS data show a rapid increase in PrEP use, particularly from 2017 onwards. The proportion of gay men with casual male partners who reported PrEP use and condomless anal intercourse was 32.8% in 2019, compared to 15.4% in 2017.
- As PrEP use has increased, consistent condom use has fallen. In 2019, 24.5% of gay men with casual partners reported consistent condom use, compared to 47.3% in 2014.
- The proportion of gay men with casual partners who are HIV-positive, on treatment and undetectable and who report condomless anal intercourse has remained relatively stable between 2014 and 2019 at around 5-6%.
- The proportion of HIV-positive men not on treatment or with a detectable viral load who reported CAIC decreased to 0.6% of men with casual partners in 2019, compared to 1.4% in 2014.
- In 2019, the proportion of gay men with casual partners who were HIV-negative or untested, not on PrEP and who reported any CAIC (insertive or receptive) decreased to 23.2%, compared to 26.5% in 2017. This suggests the proportion of gay men who are susceptible to HIV infection has decreased in Sydney as PrEP use has progressed.
- ‘Net prevention coverage’, i.e. the proportion of gay men with casual partners who report any form of safe sex, such as avoiding anal intercourse, condom use, PrEP use or undetectable viral load, has increased over the last few years, from 68.1% in 2016 to 76.2% in 2019.

## **2.5 Community mobilisation “Ending HIV”**

Since 2013, ACON has monitored the knowledge and attitudes of gay men in regards to key messages in the NSW ‘Ending HIV’ campaign. Key findings and a description of the evaluation is provided in Appendix B.

## **2.6 How accessible is the Needle and Syringe Program in NSW?**

From July 2018 to June 2019,

- 14,918,939 injecting units were distributed in NSW.
- The LHDs with the highest number of units of injecting equipment distributed were Hunter New England, Sydney, South Western Sydney, South Eastern Sydney and Western Sydney.

## **2.7 What proportion of people re-use other people’s needles and syringes (receptive syringe sharing) in NSW?**

- In 2018, 20% of respondents reported receptive syringe sharing in the previous month (NSW Needle and Syringe Program Enhanced Data Collection, 2018)<sup>2</sup>.

<sup>2</sup> Geddes, L, Iversen J, and Maher L. NSW Needle and Syringe Program Enhanced Data Collection Report 2018, The Kirby Institute, UNSW Australia, Sydney 2018.

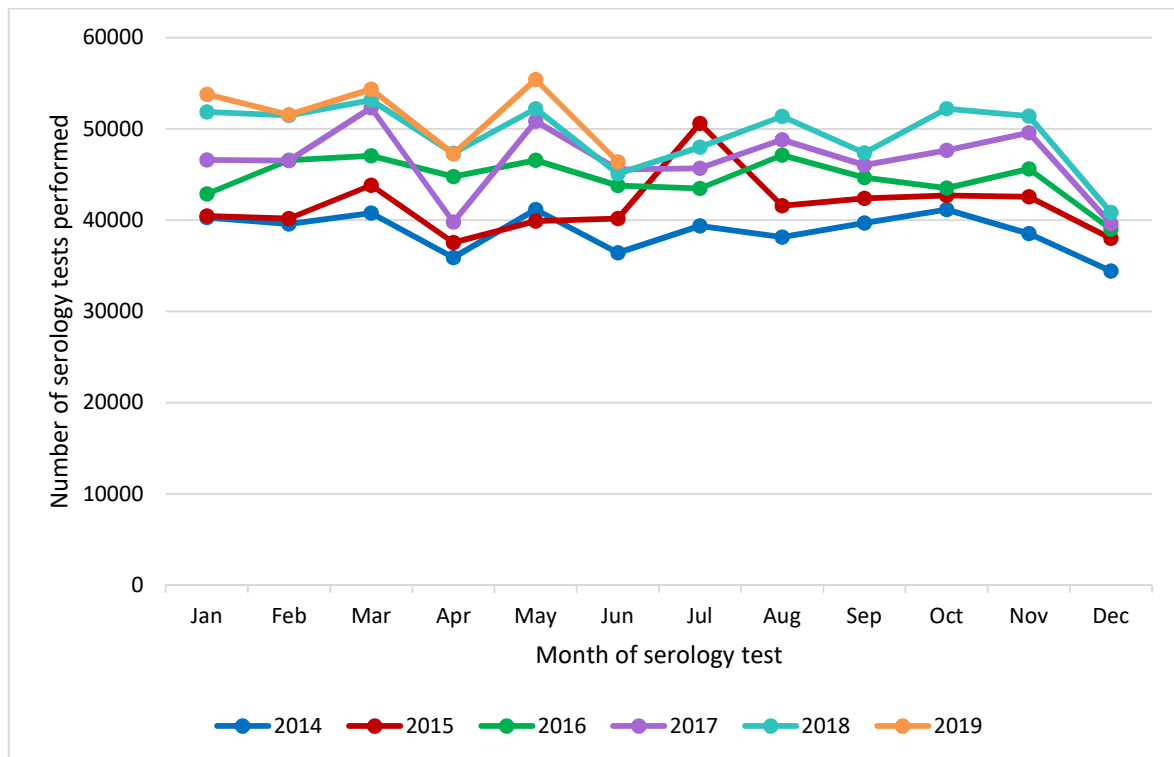
### 3. Increase HIV testing frequency

#### 3.1 Is HIV testing increasing in NSW?

##### NSW overall

In 2012, NSW Health commenced collection of testing data for selected notifiable conditions, including HIV, from 15 NSW laboratories. These laboratories represent about 95% of the laboratory testing for HIV in NSW residents. Information from laboratories does not provide any indication on the purpose of testing (screening of high risk individuals, routine antenatal, post-exposure testing), nor whether there are repeat tests on the same individual.

**Figure 18: Number of HIV serology tests performed in 15 NSW laboratories, Jan 2014 to Jun 2019**



Data source: NSW Health denominator data project, out 5 August 2019.

##### Comments on Figure 18

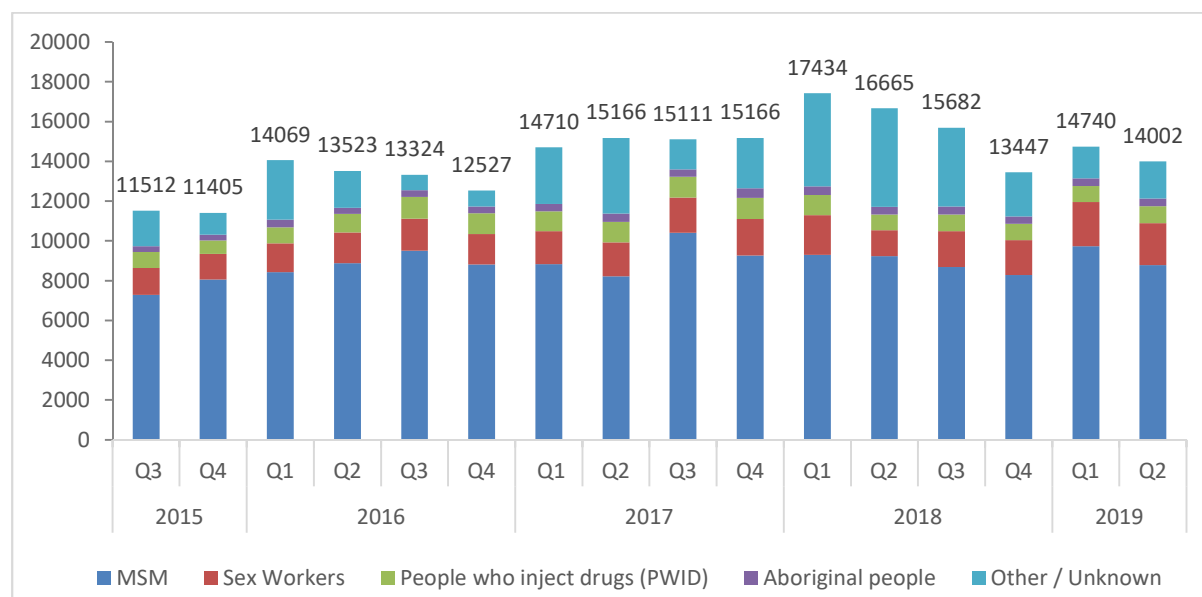
In April to June (Q2) 2019:

- 149,080 HIV serology tests were performed in 15 laboratories in NSW, which was 3% more than Q2 2018 (n=144,622), 9% more than Q2 2017 (n=136,185), 10% more than Q2 2016 (n=135,164), 27% more than Q2 2015 (n=117,628), and 31% more than Q2 2014 (n=113,512).

In January to June 2019:

- 308,774 HIV serology tests were performed in 15 laboratories in NSW, which was 3% more than in January to June 2018 (n=301,108), 10% more than January to June 2017 (n=281,659), 14% more than January to June 2016 (n=271,667), 28% more than January to June 2015 (n=242,075), and 32% more than January to June 2014 (n=234,179).

**Figure 19: Number of HIV tests performed in public sexual health clinics in NSW between 1 July 2015 and 30 June 2019, by quarter and priority population**



Data source: NSW Health HIV Strategy Monitoring Database

Notes: patients have been classified as other/unknown where priority population data is not available. Includes data from St Vincent’s Hospital.

Comments on Figure 19

- In 2019 (Apr-Jun, 2019), 8,783 HIV tests were conducted in MSM in PFSHCs.

**Dried Blood Spot testing**

[Dried Blood Spot](#) (DBS) is an innovative finger stick test for HIV and hepatitis C that is accessed by eligible people online or via a settings based approach. The NSW DBS Self-Sampling HIV Testing Pilot Program aims to increase testing among high-risk populations who experience barriers to testing through conventional services.

**Table 4: Recruitment data for the NSW DBS Self-Sampling HIV and HCV Testing Pilot, November 2016 to June 2019**

Recruitment indicators	Q2 2019 (Apr - Jun)	Total (Nov 2016 - Jun 2019)
Number of registrations for HIV DBS test	1,201	3,642
Number (%) of people who registered for a HIV DBS kit who had never tested before or had tested over 2 years ago	529/1201 (44%)	1626/3642 (45%)
Return rate of DBS kits	-	2684/3642 (74%)
Number (%) of reactive HIV tests*	1	8/2684 (0.3%)

Data Source: NSW Dried Blood Spot Research database

\*Participants with known HIV positive status when accessing DBS testing removed from total.

Comments on Table 4

- 44 per cent of people during November 2016 to June 2019 who registered for the test had never previously tested for HIV or had tested more than 2 years ago
- 3,642 HIV test kits have been ordered, with a return rate of 74 per cent
- The positivity rate of returned HIV test kits is 0.3 per cent



**Table 5: Number per target population\* who registered for the NSW DBS Self-Sampling HIV and HCV Testing Pilot, November 2016 to June 2019\***

Target population	Q2 2019 (Apr - Jun)	Total (Nov 2016 - Jun 2019)
MSM	372 (31%)	1738 (48%)
Partners from Asia or Africa continents	259 (22%)	936 (26%)
From Asia or Africa continents	113 (9%)	608 (17%)
Ever injected drugs**	769(64%)	1564 (43%)
Aboriginal or Torres Strait Islander People**	364 (30%)	704 (19%)

- Data Source: NSW Dried Blood Spot Research database
- \*Participants can have profile for more than one target population.
- \*\*Aboriginal people and people who have ever injected drugs included from September 2017. Hepatitis C RNA testing included from September 2017

**Table 6: Number of tests done per target population\* for the NSW DBS Self-Sampling HIV and HCV Testing Pilot, November 2016 to June 2019**

Target population	Q2 2019 (Apr – Jun) 975	Total (Nov 2016 – Jun 2019)
Aboriginal people**	347 (36%)	616 (23%)
MSM	193 (20%)	1056 (39%)
Ever injected drugs**	715 (73%)	1393 (52%)
From Asia/Africa	71 (7%)	400 (15%)
Partners from Asia/Africa	202 (21%)	641 (24%)

- Data Source: NSW DBS Research Database
- \*Participants can have profile for more than one target population.
- \*\*Aboriginal people and people who have ever injected drugs included from September 2017. Hepatitis C RNA testing included from September 2017

**Comment on Table 6**

Between November 2016 and June 2019:

- 39 percent of DBS tests done by MSM;
- 15 percent of DBS tests were done by people from Asia/Africa; and
- 24 percent of DBS tests were done by people who had partners from Asia/Africa.

**Table 7: Registrations for the NSW DBS Self-Sampling HIV and HCV Testing Pilot per LHD of participant from November 2016 to June 2019, and number of tests done (kits returned) in Q2 2019**

LHD	Total number of registrations in Nov 2016 - Jun 2019	Number of registrations in Q2 2019 (Apr - Jun)	Number of tests done (kits returned) in Q2 2019 (Apr - Jun)
Central Coast	77	15	6
Far West	34	4	1
Hunter New England	338	56	32
Illawarra Shoalhaven	147	38	23
Justice Health	925	592	596
Mid North Coast	76	13	6
Murrumbidgee	100	20	13
Nepean Blue Mountains	69	26	16
Northern NSW	60	19	13
Northern Sydney	246	57	35
South Eastern Sydney*	641	146	96
Southern NSW	41	8	4
South Western Sydney	167	45	31
Sydney	473	97	63
Western NSW	68	16	11
Western Sydney	179	49	31

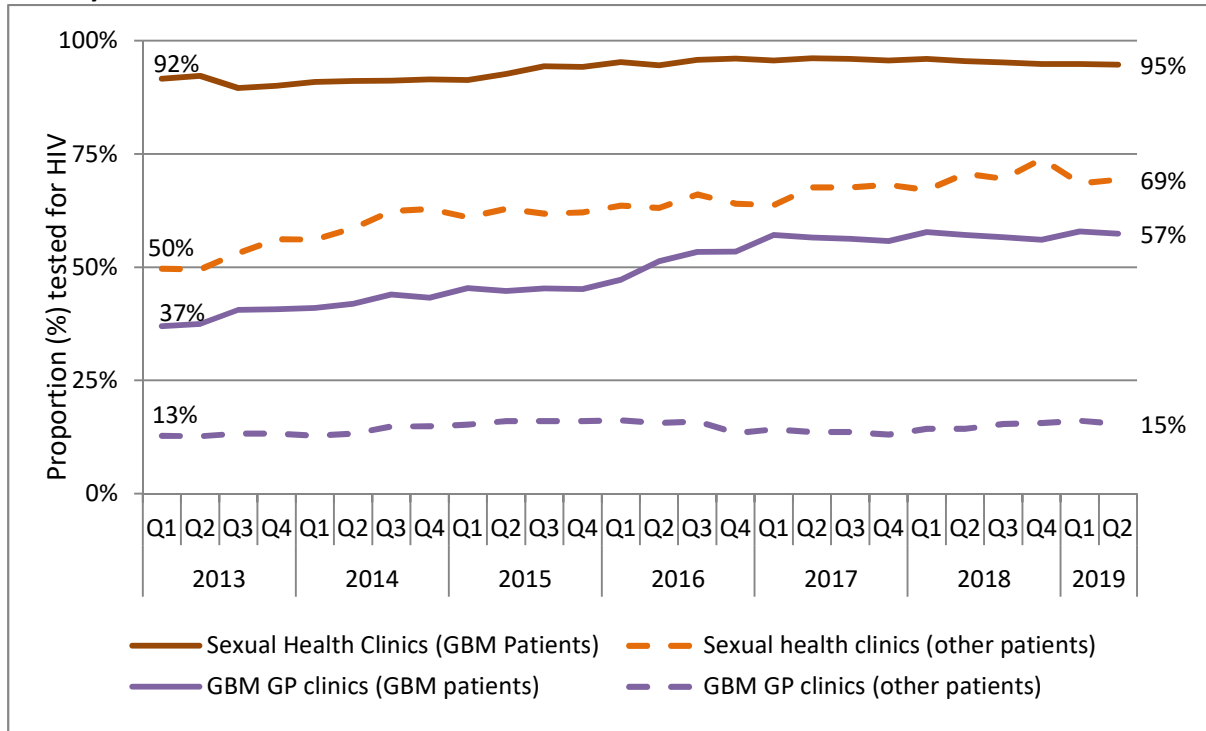
Data Source: NSW Dried Blood Spot Research database based on client postcode

\*South Eastern Sydney LHD reporting no longer includes Justice Health data.

### 3.2 What are the HIV testing patterns in NSW?

HIV testing takes place in a range of clinical and community settings, including general practice, PFSHCs and community HIV testing sites.

**Figure 20: Proportion of patients<sup>3</sup> attending PFSHCs and GBM GP clinics<sup>4</sup> tested at least once for HIV at any clinic in the ACCESS network in the previous year, by quarter and service type, 1 January 2013 to 30 June 2019<sup>5</sup>**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

#### Comments on Figure 20

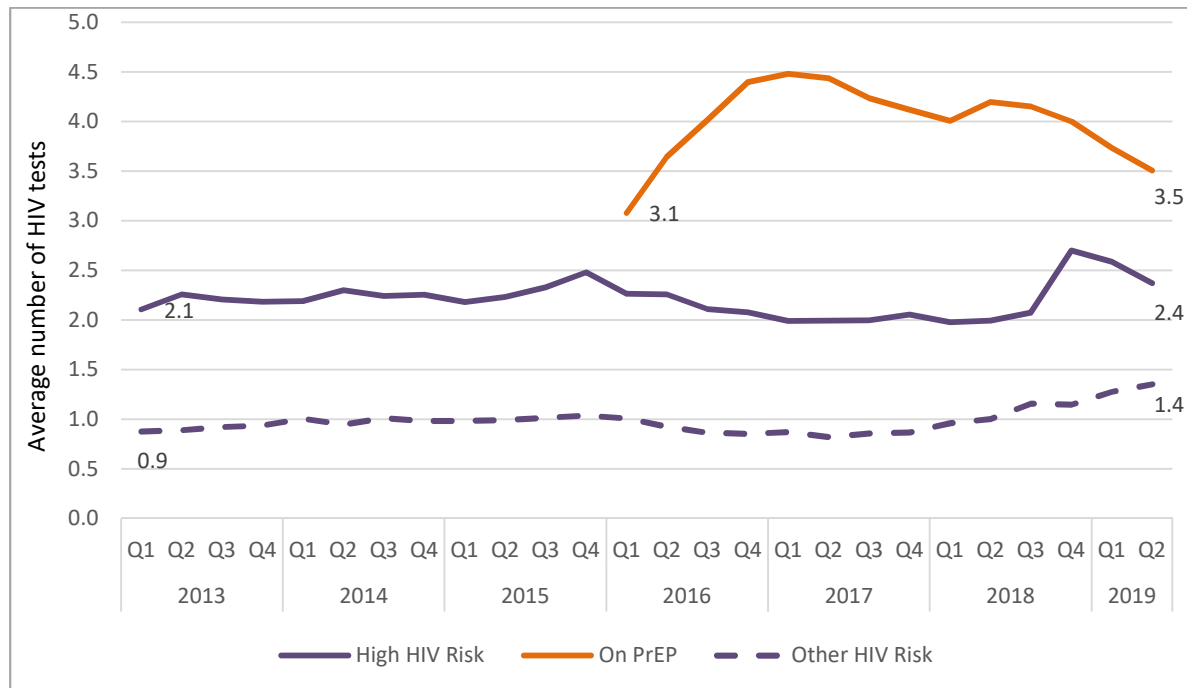
- HIV testing uptake among GBM attending PFSHCs remained consistently high in the second quarter of 2019 (95%).
- Testing uptake increased over time among other patients attending PFSHCs, rising from 50% in Q1 of 2013 to 69% in Q2 of 2019.
- Testing uptake also increased among GBM attending GBM GP clinics (from 37% in Q1 of 2013 to 57% in Q2 of 2019).
- Testing amongst other patients attending GBM GP clinics stayed relatively consistent from 2013 to Q2 2019.

<sup>3</sup> Excludes patients known to be HIV positive

<sup>4</sup> GBM clinics defined as general practice clinics serving at least 50 GBM patients annually;

<sup>5</sup> The testing period is retrospective; the proportion represents those who attended in a quarter and had at least one HIV test in the previous 12 months

**Figure 21: Average number of annual HIV tests among GBM patients<sup>6</sup> attending any clinic in the ACCESS network<sup>7</sup>, by HIV risk<sup>8</sup> and quarter, 1 January 2013 to 30 June 2019**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comments on Figure 21

- The average number of HIV tests among high risk GBM increased slightly from 2.1 in 2013 to 2.4 in Q2 2019. Among men of other risk profiles, the average number of tests increased from 0.9 to 1.4 over the same period.
- Men identified within ACCESS as accessing PrEP through the EPIC-NSW study were considered ‘low risk’ for HIV and, as per the protocol for that study, had consistently high rates of HIV testing.

In this report, the definition of risk relative to HIV has been adapted to reflect a more nuanced assessment of clinical data that explicitly excludes men accessing PrEP. The updated categories for risk are defined as follows:

- High risk: assigned to men not on PrEP who, on the basis of a hierachical decision tree, had a history of a rectal STI in the 24 months prior, or over the past 12 months evidence of inconsistent condom use, 20 or more partners, or evidence of injecting drug use
- Other risk: Any man not on PrEP not otherwise meeting the criteria of ‘high risk’

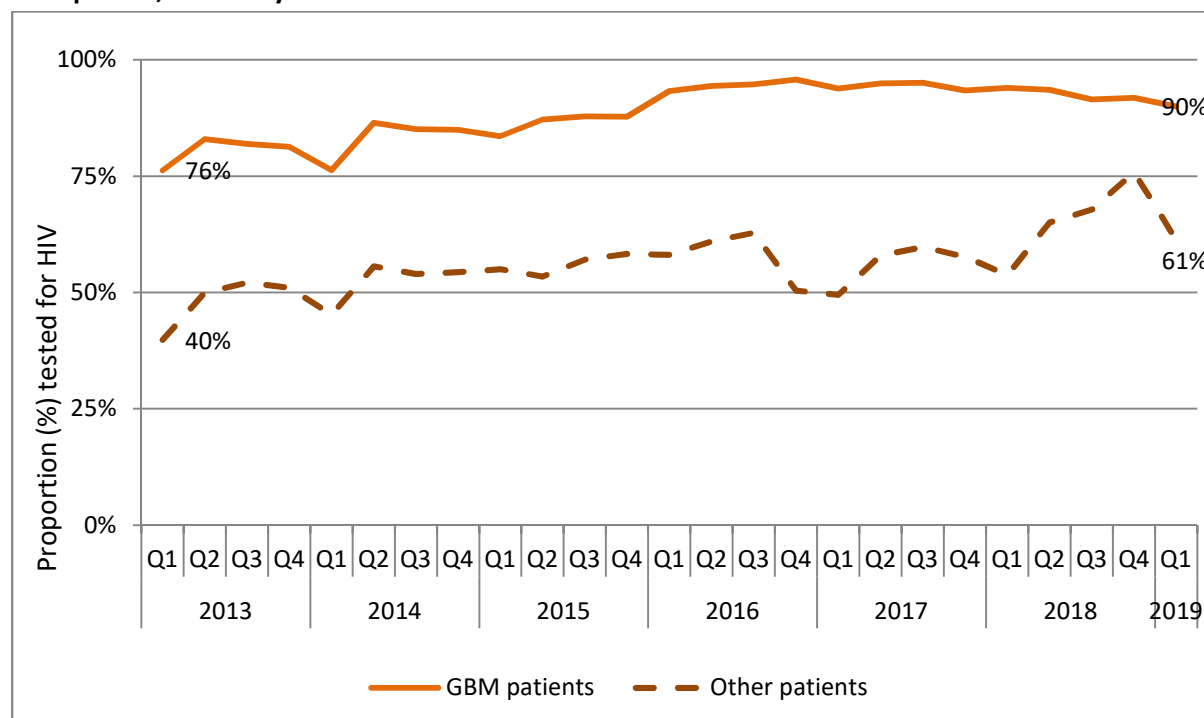
This change to the definition of ‘high risk’ means that the frequency of HIV testing among this group is lower than in previous reports because it excludes men accessing PrEP.

<sup>6</sup> Excludes patients known to be HIV positive

<sup>7</sup> GBM clinics defined as general practice clinics serving at least 50 GBM patients annually

<sup>8</sup> High risk defined by GBM patients who are not on PrEP and reported injecting drug use in the last year, more than 12 partners/year and inconsistent condom use or history of a rectal STI in the past two years. Hospital data were not included in analysis.

**Figure 22: Proportion of patients<sup>9</sup> attending PFSHCs and GBM GP clinics<sup>10</sup> combined who received an HIV test at any clinic in the ACCESS network in conjunction with an STI diagnosis<sup>11</sup>, by GBM status and quarter, 1 January 2013 to 31 March 2019**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Note: Figure 22 has been updated to include any HIV test conducted 30 days after a diagnosis was recorded in Q1 2019. Data for Q2 2019 will be updated in the next HIV Data report.

### Comment on Figure 22

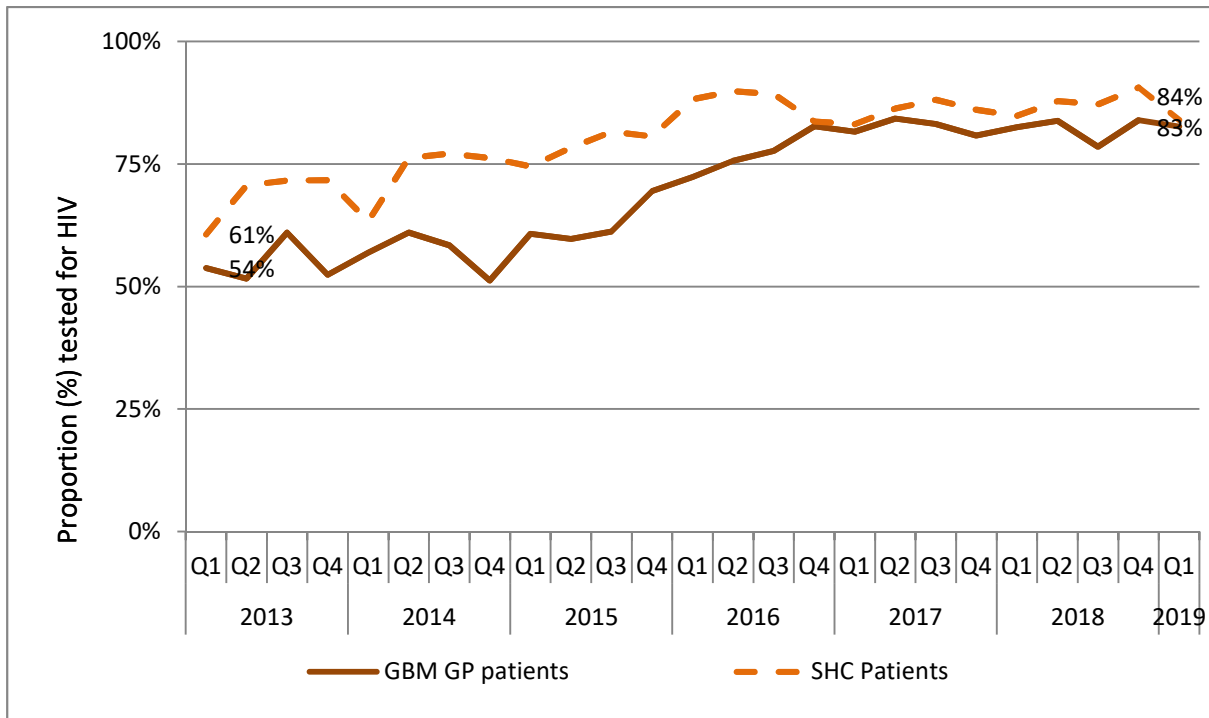
The proportion of GBM who received an HIV test in conjunction with an STI diagnosis increased over time from 76% in early 2013 to 90% in Q1 of 2019. Testing in conjunction with STI diagnoses was less common overall among other patients but also increased during this period (40% to 61%).

<sup>9</sup> Excludes patients known to be HIV positive

<sup>10</sup> GBM GP clinics defined as general practice clinics serving at least 50 GBM patients annually

<sup>11</sup> Diagnosis for chlamydia, gonorrhoea and/or infectious syphilis; any HIV test conducted at least 60 days before or at most 30 days after a diagnosis was recorded

**Figure 23: Proportion of patients<sup>12</sup> attending PFSHCs and GBM GP clinics<sup>13</sup> who received an HIV test at any clinic in the ACCESS network in conjunction with an STI diagnosis<sup>14</sup>, by service type and quarter, 1 January 2013 to 31 March 2019**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Note: Figure 23 has been updated to include any HIV test conducted 30 days after a diagnosis was recorded in Q1 2019. Data for Q2 2019 will be updated in the next HIV Data report.

**Comment on Figure 23**

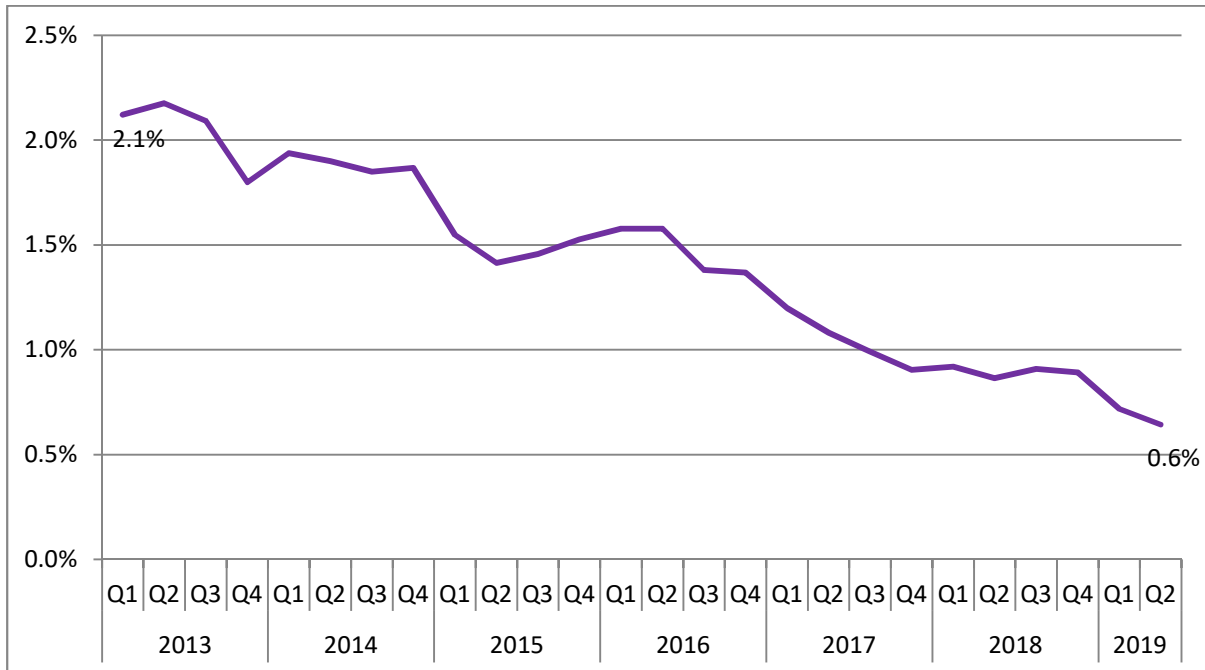
Testing in conjunction with STI diagnosis was highest in PFSHCs, increasing from 61% in Q1 2013 to 84% at the end of Q1 2019. GBM GP clinics also saw an increase in the proportion of patients tested from 54% in Q1 of 2013 to 83% at the end of Q1 2019.

<sup>12</sup> Excludes patients known to be HIV positive

<sup>13</sup> GBM clinics defined as general practice clinics serving at least 50 GBM patients annually

<sup>14</sup> Diagnosis for chlamydia, gonorrhoea and/or infectious syphilis; any HIV test conducted at least 60 days before or at most 30 days after a diagnosis was recorded

**Figure 24: Proportion of individual GBM patients<sup>15</sup> tested for HIV with a positive result (*HIV positivity*<sup>16</sup>) at any clinic in the ACCESS network, by quarter, 1 January 2013 to 30 June 2019**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comment on Figure 24

- Over time, HIV positivity among GBM attending PFSHCs and GBM GP clinics has decreased from 2.1% of Q1 2013 to 0.6% in Q2 2019.

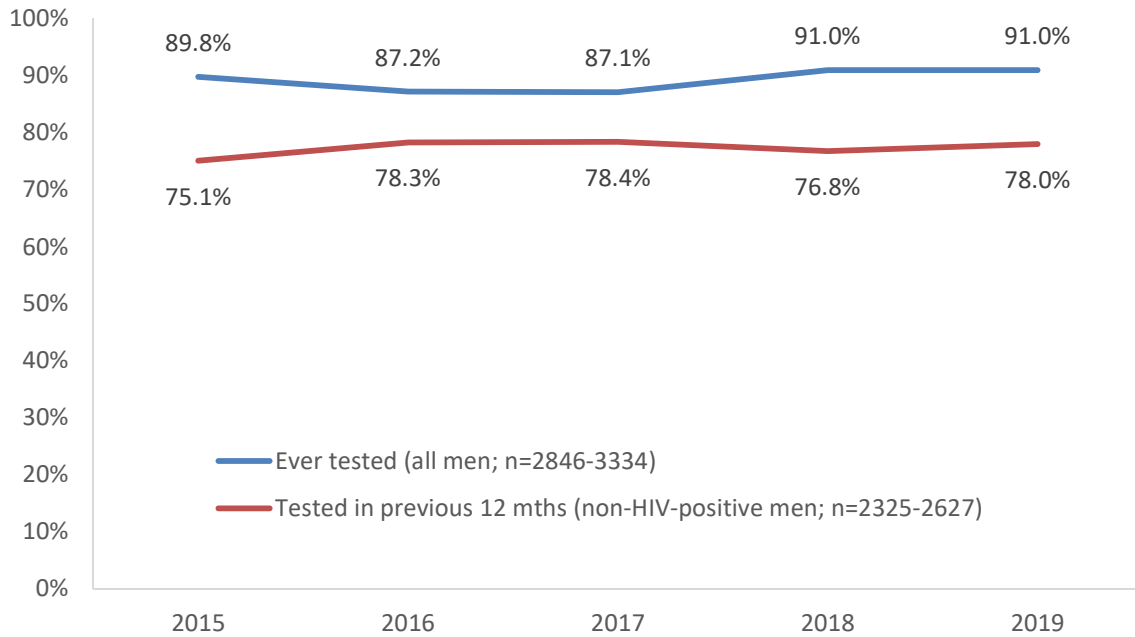
<sup>15</sup> Excludes patients known to be HIV positive

<sup>16</sup> HIV positivity is calculated as the proportion of individuals tested in a retrospective year period (discounting repeat tests among individuals) with an HIV diagnosis or confirmed pathology (positive p24 antigen or western blot test)

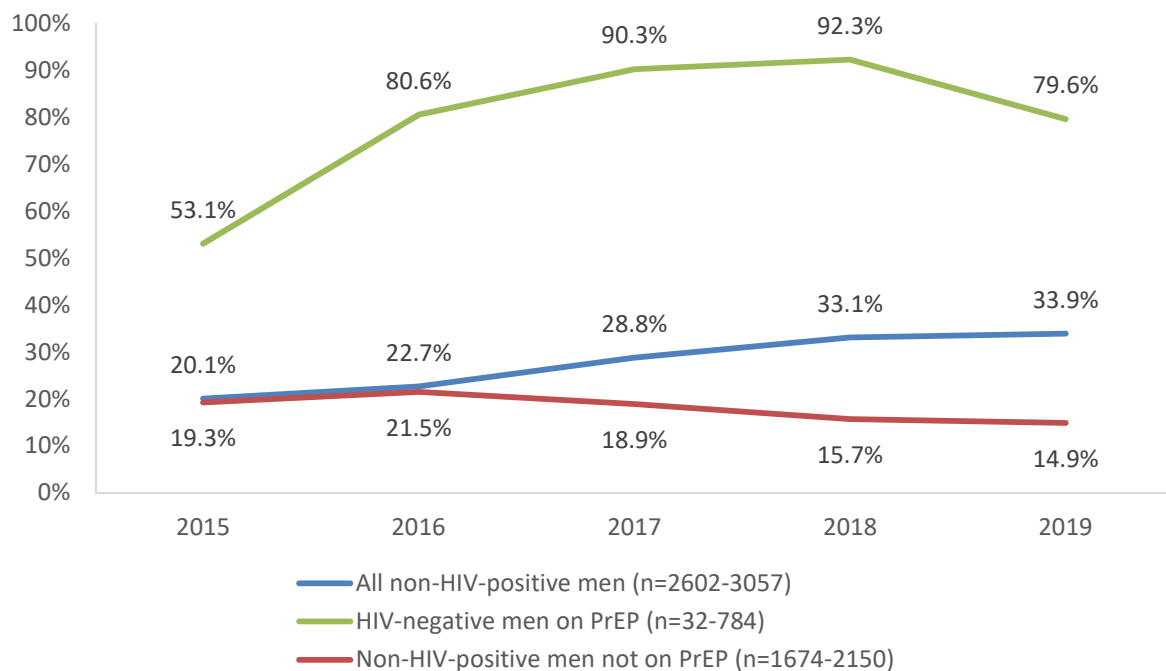
**Sydney Gay Community Periodic Survey - HIV testing**

HIV testing history is assessed in the annual Sydney Gay Community Periodic Survey (SGCPS), conducted each year during February/March. In recent years, frequency of testing has been added to the survey alongside lifetime testing and recent testing.

**Figure 25: Lifetime HIV testing and testing in the previous 12 months; Sydney Gay Community Periodic Survey, 2015 to 2019**



**Figure 26: Non-HIV-positive gay and bisexual men reporting three or more HIV tests in the previous 12 months, stratified by PrEP use; Sydney Gay Community Periodic Survey, 2015 to 2019**





Comment on Figure 25 and Figure 26

- The SGCPs data show that lifetime testing (ever having been tested for HIV) and testing in the previous year are relatively stable, reported by ~90% and ~78% of gay men, respectively, during 2015-19.
- Higher frequency testing (three or more HIV tests per year) has increased among all non-HIV-positive men, from 20.1% in 2015 to 33.9% in 2019.
- Stratifying higher frequency testing by PrEP use shows that it has only increased among HIV-negative men on PrEP (from 53.1% in 2015 to 79.6% in 2019) and has decreased among non-HIV-positive men not using PrEP (from 19.3% in 2015 to 14.9% in 2019).

### 3.3 How is testing being made more accessible?

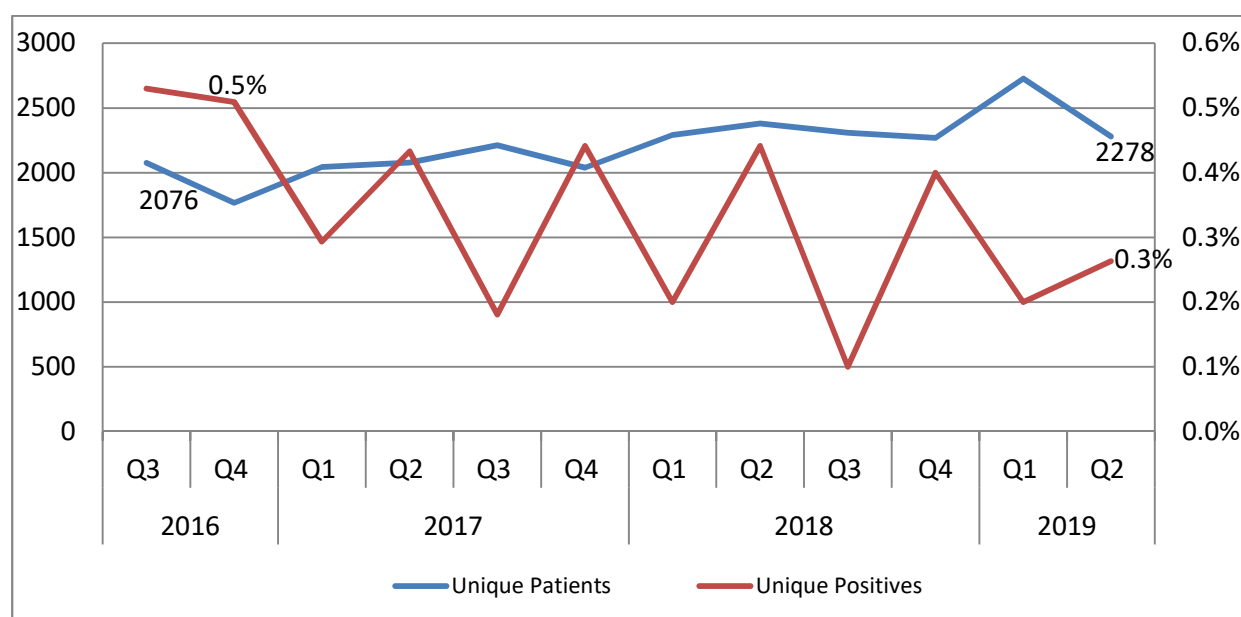
**Table 8: Number of rapid HIV tests in community based sites and proportion of clients with high risk behaviour and infrequent testing history in Apr-Jun 2019**

Non-traditional Settings	Number of RHT and (unique)	% Unique Positive	% never previously tested	% tested more than 12 months ago <sup>#</sup>	% with > 5 sexual partners in last 3 months*
<b>Community-based</b>					
<i>aTEST</i> Surry Hills	214	0.47%	16.82%	19.16%	23.46%
<i>aTEST</i> Oxford ST	1801	0.28%	6.55%	14.21%	28.70%
<i>aTEST</i> Kings Cross	62	0.00%	16.13%	27.42%	14.52%
<i>aTEST</i> Newtown	201	0.00%	46.77%	14.43%	15.66%

Data sources: NSW Health HIV Strategy Monitoring Database<sup>17</sup>

Note: <sup>#</sup>Does not include 'never tested'; \*Only patients who provided information on this characteristic have been included

**Figure 27: The number of unique patients who had a rapid HIV test at a community based site between July 2016 and June 2019 and the proportion of tests that were positive**



Data sources: NSW Health HIV Strategy Monitoring Database<sup>18</sup>

#### Comments on Figure 27

- NSW data suggests community-based testing sites are an effective testing model for engaging GBM.
- Rapid HIV testing has been effectively embedded into the mix of the testing options in NSW.

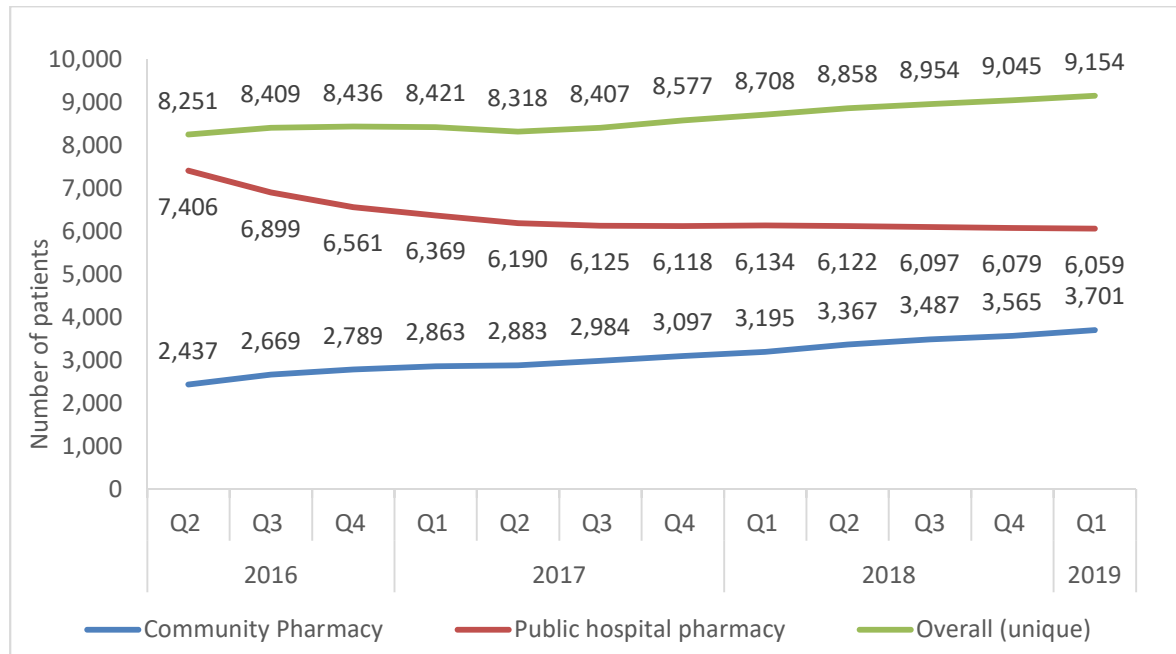
<sup>17</sup> Public sexual health and HIV services data provided by Local Health Districts for the purpose of monitoring the implementation of the NSW HIV Strategy.

<sup>18</sup> Public sexual health and HIV services data provided by Local Health Districts for the purpose of monitoring the implementation of the NSW HIV Strategy.

## 4. Increase HIV Treatment

### 4.1 How many people in NSW are on antiretroviral therapy?

**Figure 28: The number of NSW residents who have been dispensed ART for HIV, by pharmacy type and by quarter, in the previous 12 months from 1 April 2016 to 31 March 2019**

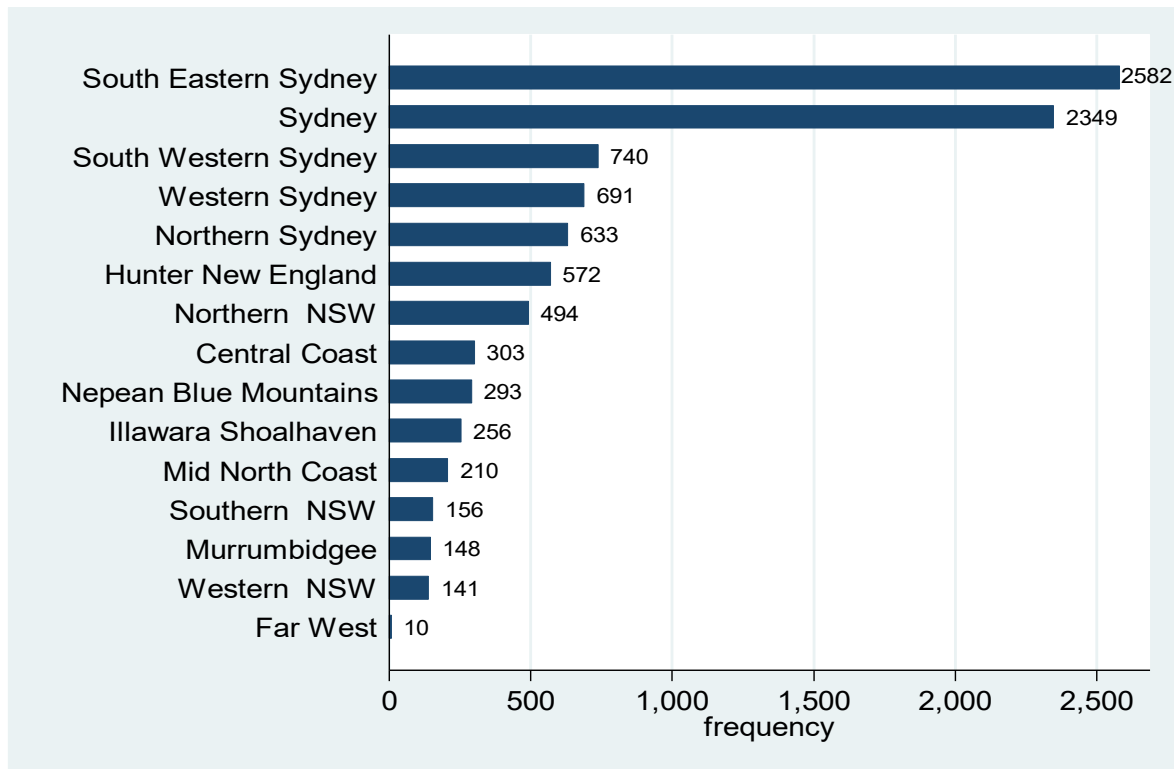


Data source: PBS Highly Specialised Drugs Programme data from 1 April 2016 to 31 March 2019 prepared for NSW Health. Note: The number of patients dispensed via community and public hospital pharmacies may add to a figure greater than the overall unique patients as some patients receive treatment from more than one pharmacy type within a year. Due to boundary changes or movements in and or out of NSW, the overall unique number of individuals presented in the above graph may differ slightly from previous reports.

#### Comments on Figure 28

- Between 1 April 2018 and 31 March 2019, a total of 9,154 (unique number) NSW residents were dispensed ART for HIV at least once within the previous 12 months.
- Of the 9,154 residents dispensed ART, 90% were male. The majority (56%) were 50 years or older, 25% were aged 40-49 years, and about 19% aged 39 years or younger.

**Figure 29: The number of NSW residents dispensed ART for HIV, by the LHD of patient residence, from 1 Apr 2018 to 31 Mar 2019<sup>19</sup>**



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data from 1 April 2018 to 31 March 2019

Comments on Figure 29

- More than three-quarters (79%) of the ART dispensed in the 12 months ending 31 March 2019 was to patients residing in the following six LHDs: South Eastern Sydney, Sydney, South Western Sydney, Western Sydney, Northern Sydney and Hunter New England LHDs.

<sup>19</sup> The sum of the numbers displayed in the graph is higher than the total of 9,154 patients as some patients resided in more than one LHD.

## 4.2 Is the proportion of people on antiretroviral treatment coverage increasing in NSW?

Data on the treatment status of clients who received HIV care in NSW public sexual health and HIV services between July 2018 and June 2019 is summarised at Table 9<sup>20</sup>.

**Table 9: Clients who received HIV care in NSW public sexual health and HIV services from 1 July 2018 and 30 June 2019**

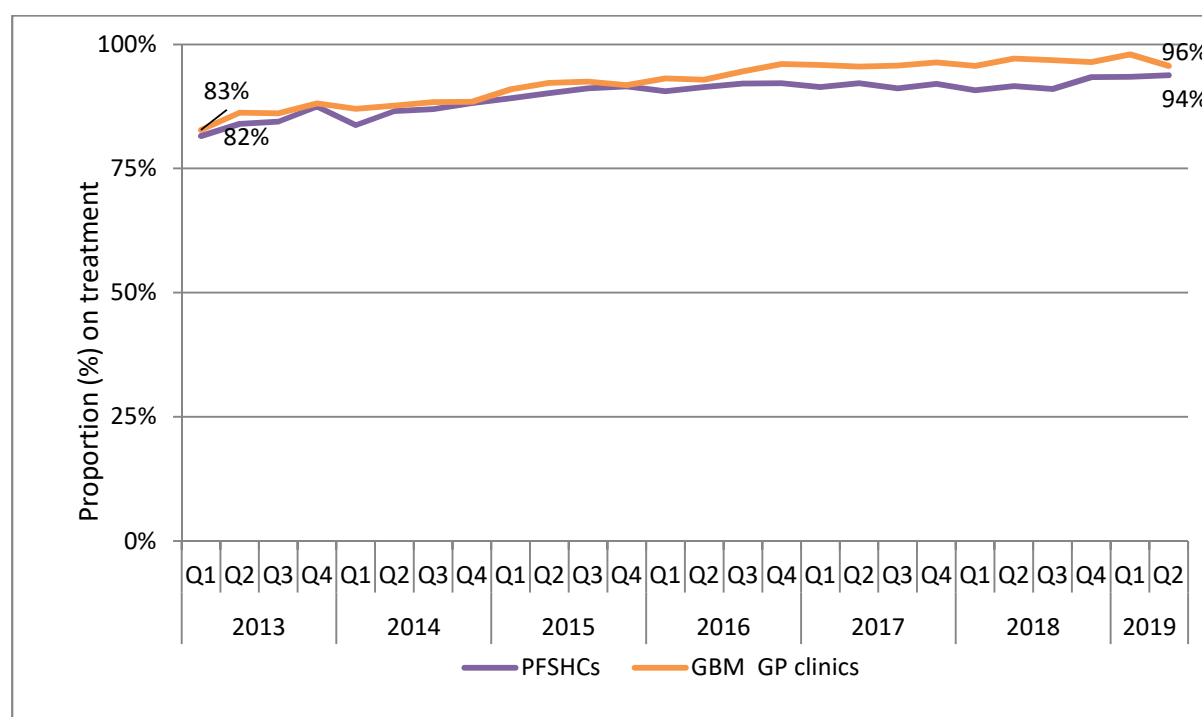
Number (%) of patients for whom treatment information was available	5,926
Number (%) on ART	5,780 (98%)

Data sources: NSW Health HIV Strategy Monitoring Database<sup>21</sup>

### Comment on Table 9

- During period from July 2018 to June 2019, treatment information was available for 5,926 clients with HIV who received care in public HIV and sexual health clinics in NSW. The available data indicates treatment coverage in NSW PFSHCs is high at 98%.

**Figure 30: Proportion of HIV positive patients<sup>22</sup> attending any clinic in the ACCESS network<sup>23</sup> who received treatment or were recorded as on treatment in the previous year at any clinic in the ACCESS network, by service type and quarter, 1 January 2013 to 30 June 2019**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute; Hospital data were not included in analysis for this report.

<sup>20</sup> Data is representative of all clients who has received HIV care in NSW public HIV and sexual health services in the last 12 months where treatment information is available.

<sup>21</sup> Public sexual health and HIV services data provided by Local Health Districts for the purpose of monitoring the implementation of the NSW HIV Strategy.

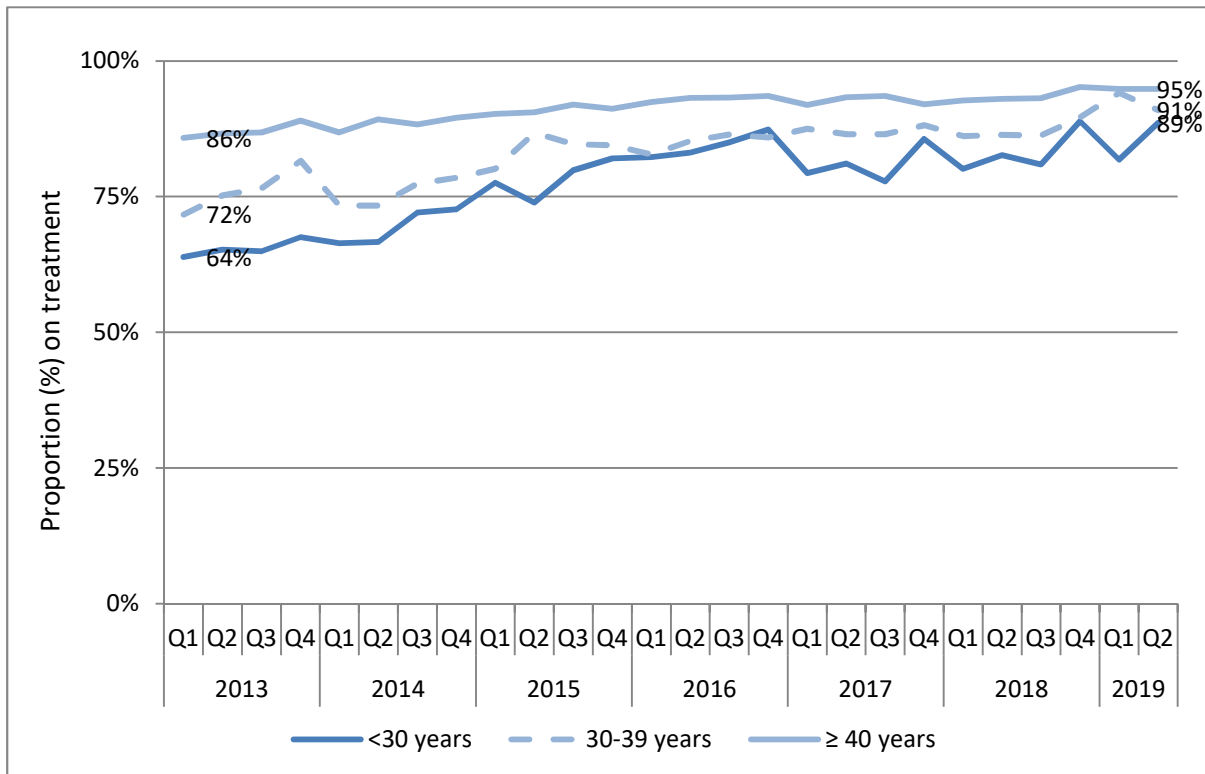
<sup>22</sup> Excludes patients for whom HIV care was recorded as managed elsewhere

<sup>23</sup> GBM clinics defined as general practice clinics serving at least 50 GBM patients annually; hospital data were not included in analysis.

Comment on Figure 30

- Over time, treatment uptake for people living with HIV increased across service types. Treatment uptake increased by 16% and 15% from Q1 2013 to Q2 2019 in PFSHCs and GBM GP clinics respectively.

**Figure 31: Proportion of HIV positive patients attending any clinic in the ACCESS network<sup>24</sup> who received treatment or were recorded as on treatment in the previous year at any clinic in the ACCESS network, by age group and quarter, 1 January 2013 to 30 June 2019**



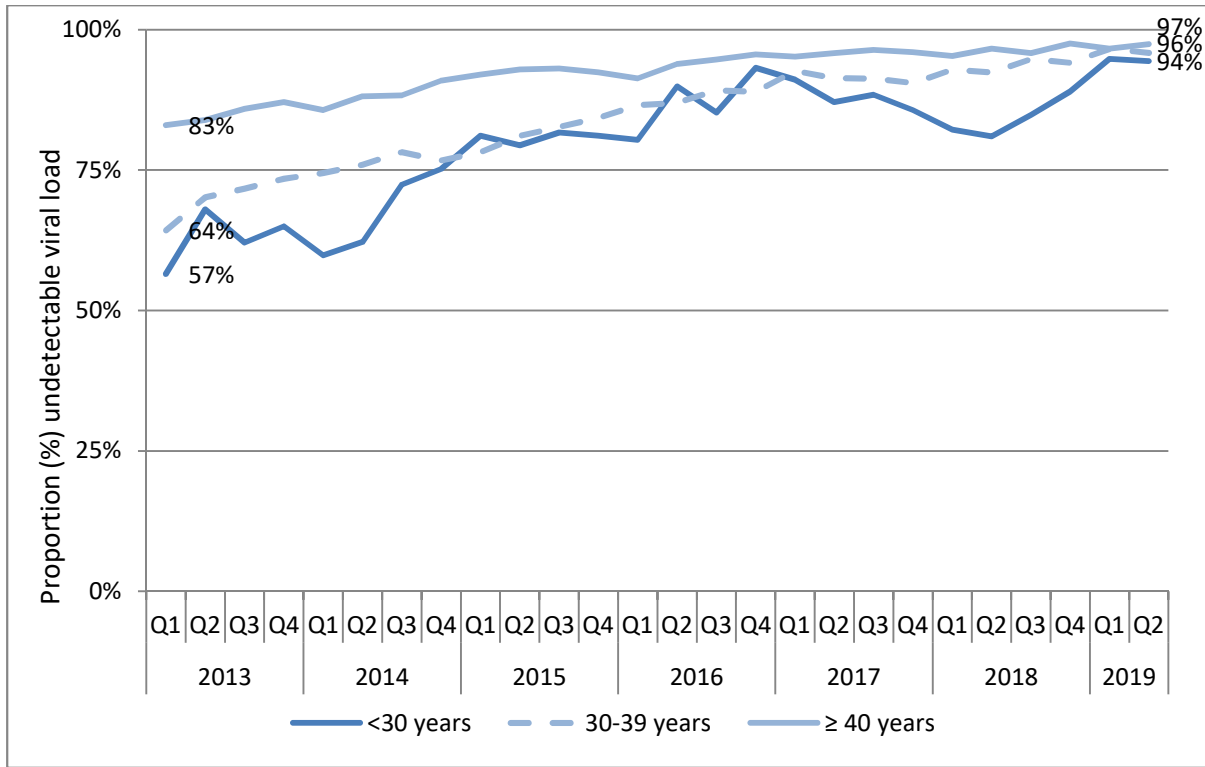
Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comment on Figure 31

- Uptake of treatment for HIV was highest among patients aged 40 years and older and lowest among those 30 years and younger. Uptake increased amongst all age groups from 2013-Q2 2019.

<sup>24</sup> GBM clinics defined as general practice clinics serving at least 50 GBM patients annually; Hospital data were not included in analysis.

**Figure 32: Proportion of HIV positive patients on treatment at any clinic in the ACCESS network<sup>25</sup> with an 'undetectable'<sup>26</sup> viral load at their most recent test in the previous 12-month period at any clinic in the ACCESS network<sup>27</sup>, by age group and quarter, 1 January 2013 to 30 June 2019**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comment on Figure 32

- The proportion of HIV positive patients with an undetectable viral load was consistently highest among older patients: 97% of patients 40 years and older had undetectable viral loads in Q2 of 2019.
- The greatest change over time, however, was among patients (less than 30 years old), increasing from 57% to 94% from Q1 2013- Q2 2019.

<sup>25</sup> GBM clinics defined as general practice clinics serving at least 50 GBM patients annually

<sup>26</sup> 'Undetectable' defined as <200 RNA copies/mm<sup>3</sup> of blood

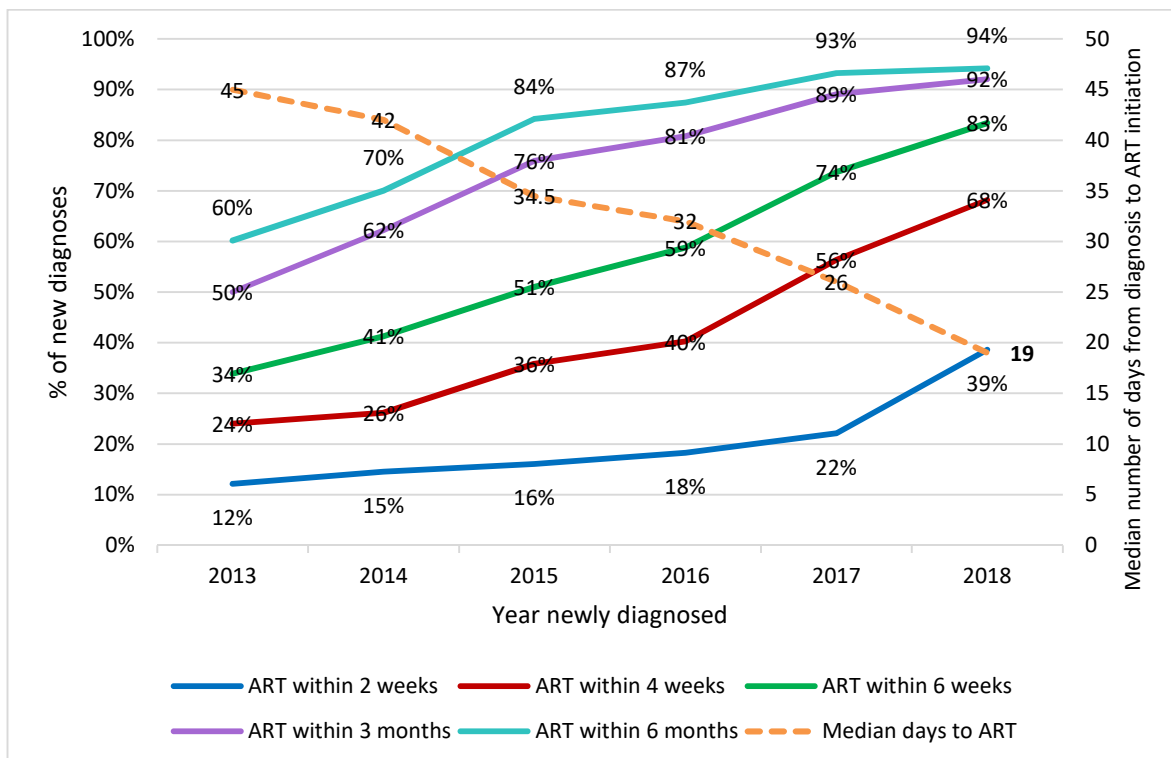
<sup>27</sup> Excludes patients for whom viral load test information was not available; Hospital data were not included in analysis.

### 4.3 How quickly are people newly diagnosed with HIV commencing antiretroviral therapy and achieving undetectable viral load in NSW?

Under the 2016-2020 HIV Strategy the aim is to ensure that at least 90% of people newly diagnosed with HIV are on ART within 6 weeks of diagnosis and to further reduce the time from diagnosis to ART over the life of the Strategy. In 2013 HIV surveillance in NSW was enhanced to collect at six months post diagnosis, via doctors, information on retention in care, ART commencement, pre-ART and latest HIV viral load and CD4 count.

At the time of preparing this Q2 2019 report, six months post diagnosis follow up had been done on NSW residents newly diagnosed from 1 January 2013 to 31 December 2018 (n=1954). Data on initiation of ART was drawn from six months post diagnosis follow up form (FUF) data and HIV notification form data and combined for analysis. All new diagnoses were included irrespective of whether eligible for follow up and of care outcome.

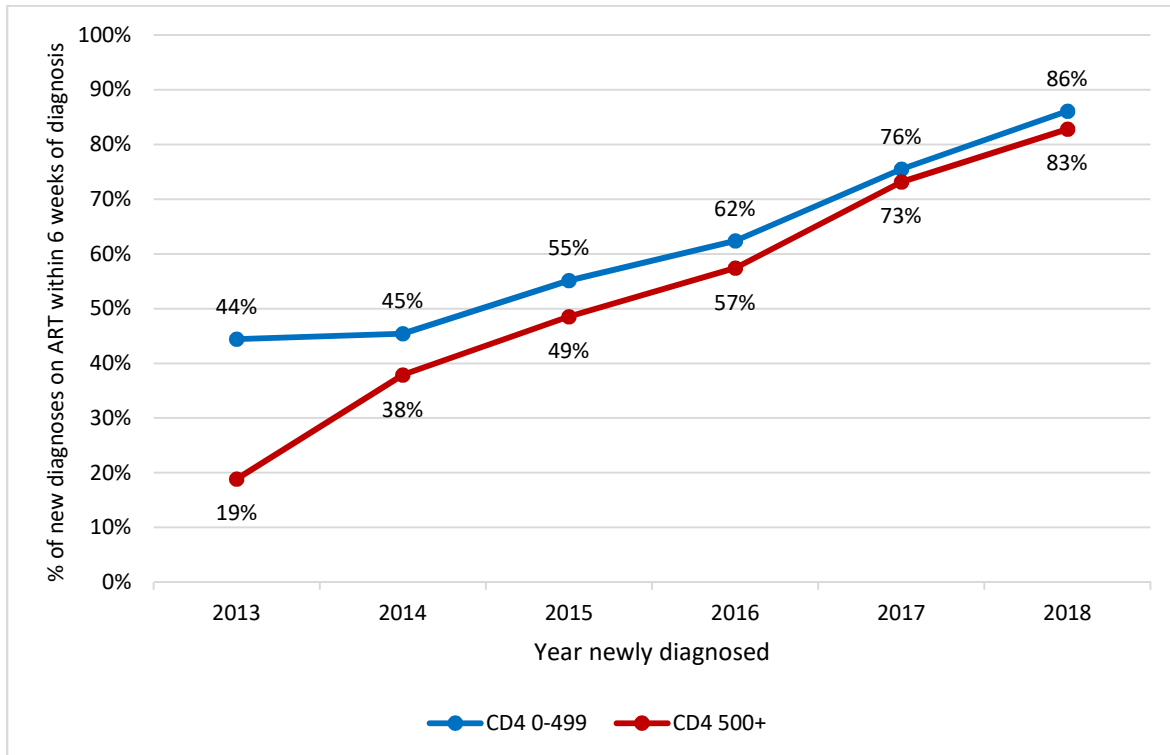
**Figure 33: Time to ART for NSW residents newly diagnosed in January 2013 to December 2018**



- Of the 277 people newly diagnosed in 2018 now followed up six months post diagnosis, 39% initiated ART within two weeks, 68% within four weeks, 83% within six weeks, 92% within three months and 94% within six months of diagnosis. The median time to ART initiation was 19 days. Of the 261 on ART within six months of diagnosis, 233 (89%) were already virally suppressed at six months follow up.



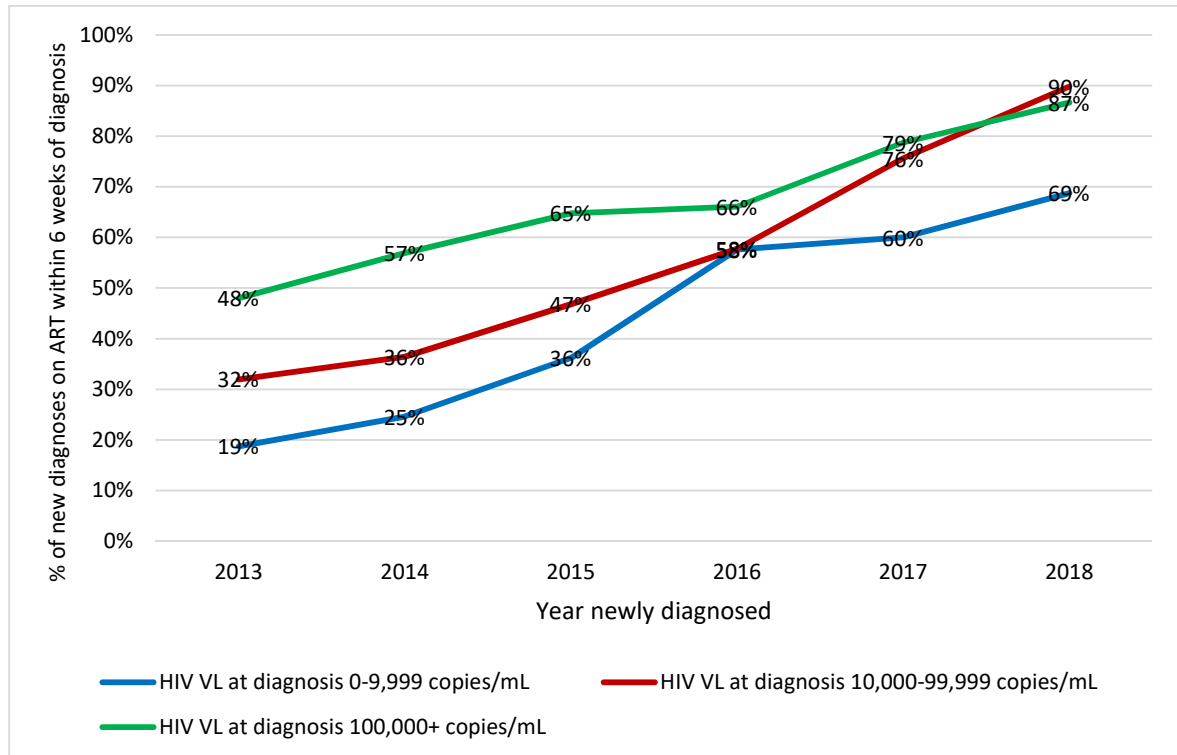
**Figure 34: CD4 count at diagnosis of NSW residents notified with newly diagnosed HIV infection from January 2013 to December 2018 and % on ART within six weeks of diagnosis**



Note: excludes 53 new diagnoses with missing CD4 at diagnosis, some of whom had commenced ART within 6 months.

- The proportion of people newly diagnosed with a CD4 count of 0-499 cells/ $\mu$ L who commenced ART within six weeks of diagnosis was 44% of the 2013, 45% of the 2014, 55% of the 2015, 62% of the 2016, 76% of the 2017 new diagnoses and 86% of the 2018 new diagnoses.
- The proportion of people newly diagnosed with a CD4 count of 500 or over who commenced ART within six weeks of diagnosis was 19% of the 2013, 38% of the 2014, 49% of the 2015, 57% of the 2016, 73% of the 2017 new diagnoses and 83% of the 2018 new diagnoses.

**Figure 35: HIV viral load at diagnosis of NSW residents notified with newly diagnosed HIV infection from January 2013 to December 2018 and % on ART within six weeks of diagnosis**



Note: excludes 68 new diagnoses with missing HIV VL at diagnosis, some of whom had commenced ART within 6 months.

- Of people with a HIV VL of 0-9,999 copies/mL, 19% of the 2013, 25% of the 2014, 36% of the 2015, 58% of the 2016, 60% of the 2017 and 69% of the 2018 new diagnoses had commenced ART within six weeks of diagnosis.
- Of people with a HIV VL of 10,000-99,999 copies/mL, 32% of the 2013, 36% of the 2014, 47% of the 2015, 58% of the 2016, 76% of the 2017 and 90% of the 2018 new diagnoses had commenced ART within six weeks of diagnosis.
- Of people with a HIV VL of 100,000 or over, 48% of the 2013, 57% of the 2014, 65% of the 2015, 66% of the 2016, 79% of the 2017 and 87% of the 2018 new diagnoses had commenced ART within six weeks of diagnosis.

#### 4.4 How is transmitted drug resistance and HIV transmission monitored in NSW?

As part of the NSW HIV Prevention Revolution Partnership HIV sequences from routinely performed genotypic antiretroviral resistance testing are linked in a de-identified manner to new HIV diagnoses. This enables the level of drug resistance in HIV from newly diagnosed people to be estimated and monitored over time, giving an estimate of the level of drug resistance that is being transmitted in the population. It is particularly important to monitor the level of transmitted resistance to each of the two antiretroviral drugs that are in PrEP (tenofovir (TDF) and emtricitabine (FTC)), as a virus with mutations to these drugs may result in PrEP failure.

Analysis of NSW HIV sequence data from 2004 to 2015 shows that transmitted drug resistance for all antiretroviral drugs has decreased during this time period from a peak of 21% in 2006 to 9% in 2015. No sequences were identified with high level resistance to TDF but 0.7% (n=11) of sequences from newly diagnosed people contained mutations conferring high level resistance to FTC.

Molecular epidemiological analysis of de-identified HIV sequences from newly diagnosed people is also undertaken to provide valuable information about HIV transmission in NSW to inform the public health response. When interpreting such analyses, it should be noted that detection of related infections is dependent on sequencing of virus soon after infection, as HIV is a virus that changes rapidly. Earlier diagnosis of HIV over time may increase the number of viruses found to be closely related. Data from 2012 to 2015 shows that almost two thirds of viruses from newly diagnosed people were not part of a cluster. Where related viruses have been identified, the majority were sequence pairs or triplets with no evidence of additional onwards transmission. Clusters of more than three sequences were few.

## 5. Appendix A: Data Sources

### Notifications Data Sources

Name	Custodian	Availability	Details
Notifiable Conditions Information Management System (NCIMS)	Health Protection NSW, NSW Health	Quarterly	State wide coverage of HIV notifications received by NSW Health and their follow-up six months post diagnosis. Quarterly report restricted to notifications on NSW residents who are newly diagnosed with HIV. NCIMS contains de-identified epidemiological information including on: basic demographic data, diagnosis date, reasons for testing, CD4 count, HIV viral load (HIV VL), past testing history, risk exposure, retention in care and ART status six months post diagnosis. HIV surveillance forms available at: <a href="http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx">http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx</a>

### Prevention Data Sources

Name	Custodian	Availability	Details
EPIC-NSW Enrolment and Behavioural survey databases	The Kirby Institute, UNSW Australia	Quarterly	Demographic data on all EPIC-NSW participants. Data fields include: site, age, sex, sexuality, residence, country of birth.
ACCESS study database and EPIC-NSW Temporary Data Collection	The Kirby Institute, UNSW Australia, and Burnet Institute	Quarterly	Deidentified clinical data patients attending sexual health clinics, high caseload general practice clinics and hospital outpatients clinics, which includes details on patient consultations, demographics, behaviour, testing, diagnoses and treatment/prescriptions. ACCESS is a live and real-time database, which means that data are not always available from every service and it is possible for services to be introduced and discontinued over time. These changes may introduce slight variations from one reporting period to the next.
Sydney Gay Community Periodic Survey	Centre for Social Research in Health	Annually	Repeat cross-sectional survey of gay and homosexually active men recruited at a range of gay community sites in Sydney. Data fields include sexual, drug use and testing practices related to the transmission of HIV and other STIs among gay men in Sydney. Data is self-reported. Data is collected in February-March annually and published in the following quarter.
ACON Ending HIV online survey database	ACON	Ad-hoc	Survey respondents are self-selected gay identifying men, recruited mainly through advertisements undertaken by ACON on Facebook. Contains data knowledge and attitudes of respondents towards testing, prevention and treatment.

NSW Health NSP Minimum Data Set	Centre for Population Health, NSW Health	Quarterly	Units of injecting equipment distributed in NSW by pharmacies participating in the Pharmacy NSP Fitpack® scheme and by the Public NSP
NSW NSP Data Collection	Centre for Population Health, NSW Health	6-monthly	Number of public NSP outlets by type in NSW by LHD
NSW Needle and Syringe Program Enhanced Data Collection	The Kirby Institute, UNSW Australia	Annual	Annual Survey of NSP attendees. Provides NSP client demographic, behavioural and drug use data to strengthen the state-wide prevention approach, and inform LHDs in planning for NSP service delivery at the local level. Data is self-reported. Data is collected over a two week period in late Feb/early March. The reports are circulated to CEs and key stakeholders in August. (The report may be published for the first time in 2017 TBC)

### Testing Data Sources

Name	Custodian	Availability	Coverage
NSW Health denominator data project	Health Protection NSW, NSW Health	Quarterly	Number of tests in NSW
NSW Health HIV Strategy Monitoring Database	NSW Ministry of Health, NSW Health	Quarterly	Public sexual health and HIV services data provided by Local Health Districts for the purpose of monitoring the implementation of the NSW HIV Strategy, includes aggregate testing data by priority population for relevant tests conducted within the LHD and community sites.
ACCESS Database	The Kirby Institute, UNSW Australia, and Burnet Institute	Quarterly	Deidentified clinical data patients attending sexual health clinics, high caseload general practice clinics and hospital outpatients clinics, which includes details on patient consultations, demographics, behaviour, testing, diagnoses and treatment/prescriptions. ACCESS is a live and real-time database, which means that data are not always available from every service and it is possible for services to be introduced and discontinued over time. These changes may introduce slight variations from one reporting period to the next.
Sydney Gay Community Periodic Survey	Centre for Social Research in Health	Annually Note: collected February-March	Repeat cross-sectional survey of gay and homosexually active men recruited at a range of gay community sites in Sydney. Data fields include sexual, drug use and testing practices related to the transmission of HIV and other STIs among gay men in Sydney. Data is self-reported. Data is collected in February-March annually and published in the following quarter.

## Treatment Data Sources

Name	Custodian	Availability	Coverage
Pharmaceutical Benefits Schedule (PBS) Highly Specialised Drugs Programme data	Centre for Population Health, NSW Health	Quarterly Note: 4-6 month lag in data being provided to NSW Health.	PBS dispensing data for HIV treatments for all NSW residents from July 2014. This data is prepared by the Commonwealth Government for NSW Health and captures all HIV treatment dispensing in NSW through the PBS from a public hospital, private hospital or community pharmacies.
NSW Health HIV Strategy Monitoring Database	NSW Ministry of Health, NSW Health	Quarterly	Public sexual health and HIV services data provided by Local Health Districts for the purpose of monitoring the implementation of the NSW HIV Strategy, includes summarised data on treatment coverage among patients diagnosed with HIV who are 'in care'.
ACCESS Database	The Kirby Institute, UNSW Australia, and Burnet Institute	Quarterly	Deidentified clinical data patients attending sexual health clinics, high caseload general practice clinics and hospital outpatients clinics, which includes details on patient consultations, demographics, behaviour, testing, diagnoses and treatment/prescriptions. ACCESS is a live and real-time database, which means that data are not always available from every service and it is possible for services to be introduced and discontinued over time. These changes may introduce slight variations from one reporting period to the next.
Notifiable Conditions Information Management System (NCIMS)	Health Protection NSW, NSW Health	Quarterly	State wide coverage/representation of HIV notifications received by NSW Health under public health legislation and of their follow up six months post diagnosis. Quarterly report restricted to notifications on people who are NSW residents and who are newly diagnosed with HIV. NCIMS contains de-identified epidemiological information on people notified with HIV infection including on: basic demographic data, diagnosis date, reasons for testing, CD4 count, HIV viral load (HIV VL), past testing history, risk exposure, retention in care and ART status six months post diagnosis. HIV surveillance forms available at: <a href="http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx">http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx</a>

## 6. Appendix B: Characteristics of NSW residents notified with newly diagnosed HIV infection 1981 to 30 June 2019 (continues over page); data extracted from NCIMS, HPNSW, 6 August 2019.

Case characteristics	2010 N (%)	2011 N (%)	2012 N (%)	2013 N (%)	2014 N (%)	2015 N (%)	2016 N (%)	2017 N (%)	2018 N (%)	Jan-Jun 2019 N (%)	1981-Jun 2019 N (%)
<b>Total (ALL)</b>	<b>306</b>	<b>332</b>	<b>412</b>	<b>354</b>	<b>344</b>	<b>349</b>	<b>318</b>	<b>312</b>	<b>277</b>	<b>142</b>	<b>18687</b>
<b>Gender</b>											
<i>Male</i>	280 (91.5%)	311 (93.7%)	375 (91%)	324 (91.5%)	318 (92.4%)	320 (91.7%)	292 (91.8%)	282 (90.4%)	254 (91.7%)	129 (90.8%)	17178 (91.9%)
<i>Female</i>	24 (7.8%)	21 (6.3%)	36 (8.7%)	27 (7.6%)	25 (7.3%)	28 (8%)	22 (6.9%)	24 (7.7%)	20 (7.2%)	8 (5.6%)	1204 (6.4%)
<i>Transgender</i>	2 (0.7%)	0 (0%)	1 (0.2%)	3 (0.8%)	1 (0.3%)	1 (0.3%)	4 (1.3%)	6 (1.9%)	3 (1.1%)	5 (3.5%)	57 (0.3%)
<i>Unknown</i>	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	248 (1.3%)
<b>Aboriginal or Torres Strait Islander person status</b>											
<i>Aboriginal person</i>	7 (2.3%)	5 (1.5%)	13 (3.2%)	8 (2.3%)	7 (2%)	7 (2%)	9 (2.8%)	8 (2.6%)	11 (4%)	2 (1.4%)	210 (1.1%)
<i>Torres Strait Islander</i>	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)	0 (0%)	1 (0.7%)	2 (0%)
<i>Non-Aboriginal person</i>	294 (96.1%)	324 (97.6%)	393 (95.4%)	344 (97.2%)	330 (95.9%)	339 (97.1%)	307 (96.5%)	304 (97.4%)	266 (96%)	139 (97.9%)	11581 (62%)
<i>Not stated</i>	5 (1.6%)	3 (0.9%)	6 (1.5%)	2 (0.6%)	7 (2%)	3 (0.9%)	1 (0.3%)	0 (0%)	0 (0%)	0 (0%)	6894 (36.9%)
<b>Age in years at diagnosis</b>											
<i>0-4</i>	2 (0.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	40 (0.2%)
<i>5-9</i>	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)	0 (0%)	1 (0.3%)	1 (0.3%)	0 (0%)	0 (0%)	25 (0.1%)
<i>10-14</i>	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	36 (0.2%)
<i>15-19</i>	5 (1.6%)	6 (1.8%)	9 (2.2%)	8 (2.3%)	2 (0.6%)	6 (1.7%)	3 (0.9%)	5 (1.6%)	4 (1.4%)	1 (0.7%)	321 (1.7%)
<i>20-24</i>	29 (9.5%)	34 (10.2%)	44 (10.7%)	37 (10.5%)	41 (11.9%)	45 (12.9%)	39 (12.3%)	29 (9.3%)	36 (13%)	12 (8.5%)	2261 (12.1%)
<i>25-29</i>	56 (18.3%)	55 (16.6%)	77 (18.7%)	65 (18.4%)	51 (14.8%)	63 (18.1%)	61 (19.2%)	58 (18.6%)	60 (21.7%)	24 (16.9%)	3679 (19.7%)
<i>30-34</i>	49 (16%)	65 (19.6%)	71 (17.2%)	48 (13.6%)	64 (18.6%)	62 (17.8%)	63 (19.8%)	57 (18.3%)	50 (18.1%)	34 (23.9%)	3717 (19.9%)
<i>35-39</i>	43 (14.1%)	59 (17.8%)	64 (15.5%)	42 (11.9%)	45 (13.1%)	45 (12.9%)	48 (15.1%)	36 (11.5%)	29 (10.5%)	19 (13.4%)	3062 (16.4%)
<i>40-44</i>	51 (16.7%)	46 (13.9%)	47 (11.4%)	45 (12.7%)	46 (13.4%)	32 (9.2%)	30 (9.4%)	38 (12.2%)	27 (9.7%)	15 (10.6%)	2260 (12.1%)
<i>45-49</i>	30 (9.8%)	26 (7.8%)	38 (9.2%)	45 (12.7%)	30 (8.7%)	27 (7.7%)	32 (10.1%)	21 (6.7%)	23 (8.3%)	13 (9.2%)	1356 (7.3%)
<i>50-54</i>	7 (2.3%)	25 (7.5%)	28 (6.8%)	24 (6.8%)	25 (7.3%)	28 (8%)	18 (5.7%)	19 (6.1%)	18 (6.5%)	12 (8.5%)	842 (4.5%)
<i>55-59</i>	22 (7.2%)	10 (3%)	14 (3.4%)	22 (6.2%)	15 (4.4%)	13 (3.7%)	13 (4.1%)	16 (5.1%)	15 (5.4%)	5 (3.5%)	487 (2.6%)
<i>60-64</i>	5 (1.6%)	2 (0.6%)	13 (3.2%)	6 (1.7%)	14 (4.1%)	15 (4.3%)	6 (1.9%)	17 (5.4%)	7 (2.5%)	3 (2.1%)	271 (1.5%)
<i>65-69</i>	6 (2%)	2 (0.6%)	4 (1%)	9 (2.5%)	7 (2%)	7 (2%)	4 (1.3%)	5 (1.6%)	4 (1.4%)	2 (1.4%)	146 (0.8%)
<i>70 or over</i>	1 (0.3%)	2 (0.6%)	3 (0.7%)	2 (0.6%)	3 (0.9%)	6 (1.7%)	0 (0%)	10 (3.2%)	4 (1.4%)	2 (1.4%)	96 (0.5%)
<i>Unknown</i>	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	88 (0.5%)

Case characteristics	2010 N (%)	2011 N (%)	2012 N (%)	2013 N (%)	2014 N (%)	2015 N (%)	2016 N (%)	2017 N (%)	2018 N (%)	Jan-Jun 2019 N (%)	1981-Jun 2019 N (%)
<b>Total (ALL)</b>	<b>306</b>	<b>332</b>	<b>412</b>	<b>354</b>	<b>344</b>	<b>349</b>	<b>318</b>	<b>312</b>	<b>277</b>	<b>142</b>	<b>18687</b>
<b>Reported HIV risk exposure</b>											
<i>MSM</i>	226 (73.9%)	269 (81%)	321 (77.9%)	265 (74.9%)	255 (74.1%)	264 (75.6%)	236 (74.2%)	215 (68.9%)	194 (70%)	102 (71.8%)	11854 (63.4%)
<i>MSM who injects drugs</i>	8 (2.6%)	11 (3.3%)	15 (3.6%)	16 (4.5%)	20 (5.8%)	21 (6%)	25 (7.9%)	17 (5.4%)	25 (9%)	12 (8.5%)	607 (3.2%)
<i>Hetero-sex only</i>	51 (16.7%)	41 (12.3%)	58 (14.1%)	61 (17.2%)	50 (14.5%)	52 (14.9%)	48 (15.1%)	67 (21.5%)	51 (18.4%)	20 (14.1%)	1789 (9.6%)
<i>PWID</i>	9 (2.9%)	8 (2.4%)	9 (2.2%)	7 (2%)	8 (2.3%)	4 (1.1%)	4 (1.3%)	6 (1.9%)	4 (1.4%)	3 (2.1%)	578 (3.1%)
<i>Blood disorder, blood or tissue recipient</i>	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	277 (1.5%)
<i>Vertical transmission</i>	2 (0.7%)	0 (0%)	0 (0%)	1 (0.3%)	1 (0.3%)	0 (0%)	1 (0.3%)	2 (0.6%)	0 (0%)	0 (0%)	54 (0.3%)
<i>Other</i>	1 (0.3%)	1 (0.3%)	2 (0.5%)	1 (0.3%)	4 (1.2%)	3 (0.9%)	1 (0.3%)	1 (0.3%)	1 (0.4%)	2 (1.4%)	53 (0.3%)
<i>Unknown</i>	9 (2.9%)	2 (0.6%)	7 (1.7%)	3 (0.8%)	6 (1.7%)	4 (1.1%)	3 (0.9%)	4 (1.3%)	2 (0.7%)	3 (2.1%)	3475 (18.6%)
<b>LHD of residence</b>											
<i>South Eastern Sydney</i>	109 (35.6%)	124 (37.3%)	150 (36.4%)	126 (35.6%)	112 (32.6%)	129 (37%)	84 (26.4%)	92 (29.5%)	85 (30.7%)	44 (31%)	5819 (31.1%)
<i>Sydney</i>	78 (25.5%)	88 (26.5%)	113 (27.4%)	91 (25.7%)	84 (24.4%)	86 (24.6%)	95 (29.9%)	71 (22.8%)	63 (22.7%)	33 (23.2%)	3234 (17.3%)
<i>Northern Sydney</i>	19 (6.2%)	24 (7.2%)	23 (5.6%)	25 (7.1%)	17 (4.9%)	24 (6.9%)	20 (6.3%)	29 (9.3%)	23 (8.3%)	10 (7%)	1061 (5.7%)
<i>Western Sydney</i>	20 (6.5%)	31 (9.3%)	25 (6.1%)	27 (7.6%)	27 (7.8%)	20 (5.7%)	24 (7.5%)	29 (9.3%)	24 (8.7%)	12 (8.5%)	814 (4.4%)
<i>South Western Sydney</i>	23 (7.5%)	18 (5.4%)	30 (7.3%)	29 (8.2%)	30 (8.7%)	31 (8.9%)	31 (9.7%)	25 (8%)	21 (7.6%)	13 (9.2%)	746 (4%)
<i>Hunter New England</i>	16 (5.2%)	11 (3.3%)	14 (3.4%)	17 (4.8%)	27 (7.8%)	17 (4.9%)	15 (4.7%)	7 (2.2%)	17 (6.1%)	7 (4.9%)	530 (2.8%)
<i>Nepean Blue Mountains</i>	3 (1%)	4 (1.2%)	5 (1.2%)	3 (0.8%)	6 (1.7%)	6 (1.7%)	2 (0.6%)	6 (1.9%)	5 (1.8%)	0 (0%)	273 (1.5%)
<i>Illawarra Shoalhaven</i>	8 (2.6%)	5 (1.5%)	9 (2.2%)	7 (2%)	6 (1.7%)	7 (2%)	8 (2.5%)	10 (3.2%)	7 (2.5%)	4 (2.8%)	252 (1.3%)
<i>Northern NSW</i>	8 (2.6%)	11 (3.3%)	5 (1.2%)	5 (1.4%)	7 (2%)	8 (2.3%)	5 (1.6%)	10 (3.2%)	9 (3.2%)	6 (4.2%)	231 (1.2%)
<i>Central Coast</i>	5 (1.6%)	4 (1.2%)	10 (2.4%)	5 (1.4%)	8 (2.3%)	5 (1.4%)	11 (3.5%)	12 (3.8%)	5 (1.8%)	2 (1.4%)	226 (1.2%)
<i>Mid North Coast</i>	3 (1%)	4 (1.2%)	3 (0.7%)	6 (1.7%)	7 (2%)	6 (1.7%)	2 (0.6%)	4 (1.3%)	3 (1.1%)	1 (0.7%)	156 (0.8%)
<i>Western NSW</i>	4 (1.3%)	3 (0.9%)	7 (1.7%)	5 (1.4%)	2 (0.6%)	2 (0.6%)	5 (1.6%)	5 (1.6%)	3 (1.1%)	2 (1.4%)	136 (0.7%)
<i>Murrumbidgee-Albury</i>	8 (2.6%)	2 (0.6%)	5 (1.2%)	3 (0.8%)	3 (0.9%)	4 (1.1%)	9 (2.8%)	6 (1.9%)	4 (1.4%)	1 (0.7%)	110 (0.6%)
<i>Southern NSW</i>	1 (0.3%)	2 (0.6%)	8 (1.9%)	4 (1.1%)	4 (1.2%)	2 (0.6%)	6 (1.9%)	3 (1%)	3 (1.1%)	2 (1.4%)	74 (0.4%)
<i>Far West</i>	0 (0%)	0 (0%)	2 (0.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.4%)	2 (1.4%)	11 (0.1%)
<i>Unknown or other</i>	1 (0.3%)	1 (0.3%)	3 (0.7%)	1 (0.3%)	4 (1.2%)	2 (0.6%)	1 (0.3%)	3 (1%)	4 (1.4%)	3 (2.1%)	5014 (26.8%)



## 7. Appendix C: Demographic profile of participants who participated in EPIC study

Category	Description
Gender	Gender was obtained from the risk assessment, behavioural survey, and ACCESS databases, where available. Risk assessment data were available for 6,554 (70.2%) participants, behavioural survey data for 6,334 (67.8%) participants and ACCESS data for 8,029 (85.9%) participants. Data were not available for 307 (3.3%) participants.
Sexual identity	Sexual identity was obtained from the risk assessment and behavioural survey databases, where available. Risk assessment data were available for 6,554 (70.1%) participants, and behavioural survey data for 6,334 (67.8%) participants. Data were missing for 397 (4.2%) participants.
Age	Age was obtained from the enrolment and ACCESS databases, where available. In the enrolment database, date of birth (used to calculate age) was recorded for participants who consented to data linkage; 7,407 (79.3%) provided consent and data are available for 7,393 participants. Age was available in the ACCESS database for 8,035 participants (86.0%). Data on age were not available from either the enrolment or ACCESS databases for 331 (3.5%) of total participants.
Aboriginal and/or Torres Strait Islander status	Aboriginal and/or Torres Strait Islander status was obtained from the behavioural survey and ACCESS databases, where available. 8116 (87%) participants consented to participate in the behavioural survey and 6344 (67.8% of the total sample) completed it. Of the 1,208 (12.9%) participants whose Indigenous status was not stated, 11 participants' country/region of birth was available and not Australia, so these people were counted as Non-Indigenous, as it was assumed that there would be very few indigenous Australian or Torres Strait Islander people born outside Australia. Overall, after this assumption, data for Indigenous status was missing for 1,197 (12.8%) participants.
Country/region	Country/region of birth was obtained from the behavioural survey and ACCESS databases, where available (see above). Data for country/region of birth was missing for 1,697 (18.2%) participants.
Area of residence	Area of residence (based on participant postcode) was obtained from the enrolment, behavioural survey and ACCESS databases, where available. Data were missing for 222 (2.4%) participants.

## 8. Appendix D: Ending HIV Seven Statements Evaluation, ACON 2013-2019

Answer Options	FEB 2013	MAY 2013	NOV 2013	APRIL 2014	DEC 2014	APR 2015	MAR 2016	SEP 2016	APR 2017	MAR 2018	APR 2019
Everything has changed, we can now dramatically reduce HIV transmission	48%	59%	59%	67%	61%	71%	77%	86%	77%	87%	85%
Now more than ever, gay men need to know their HIV status	81%	85%	86%	90%	89%	91%	92%	92%	91%	92%	92%
Sexually active gay men should take an HIV test at least twice a year	88%	87%	92%	93%	89%	92%	93%	96%	94%	95%	94%
HIV treatments now offer increased health benefits and fewer side effects	65%	66%	67%	73%	69%	75%	77%	78%	71%	77%	74%
HIV treatments significantly reduce the risk of passing on HIV	33%	42%	50%	64%	59%	69%	73%	83%	78%	84%	83%
Early HIV treatment is better for your health and can help protect your sex partners	74%	80%	89%	91%	92%	93%	93%	95%	93%	95%	93%
Condoms continue to be the most effective way of preventing HIV transmission	95%	92%	92%	91%	91%	85%	94%	94%	94%	94%	90%

\* In March 2016 this statement was changed to reflect advances in bio-medical prevention. On all prior surveys the statement was 'condoms continue to be the most effective way of preventing HIV transmission'.

### Survey methodology:

Each of the five online evaluation surveys was developed and analysed by an independent consultant using the Survey Monkey online tool. Each survey was run over a one to three week period. In addition to 30 to 40 mainly multiple choice questions, with a few opportunities for respondents to provide

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comments, respondents were provided with a set of seven statements and asked to indicate whether they agree or disagree with the statements (using a five point scale)

**Recruitment methodology:**

Respondents were mainly recruited through the placement of survey advertisements on Facebook undertaken by ACON.

**Survey objectives:**

The online evaluation survey focussed on measuring a) advertisement awareness, b) engagement with campaign components, and c) self-reported impact and getting answers to seven statements.