NSW HIV Strategy 2016 – 2020

Quarter 3 2020

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, 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

New HIV diagnoses decreased in NSW during 2020, likely driven by the COVID-19 pandemic
During January to September 2020, the number of NSW residents newly diagnosed with HIV (n=155) decreased by 31% compared to the average for the last five years. Only 35% (n=54) of these new diagnoses had evidence that their infection occurred in the 12 months preceding diagnosis (early stage HIV infection), a reduction of 36% relative to the same period over the last five years.

Though this is a large decline in new diagnoses, restricted movement, altered health seeking behaviour, lower levels of casual sex activity and reallocation of clinic resources due to the COVID-19 pandemic response are likely responsible for the larger than expected decrease. During April and May in NSW when restrictions were most severe, overall testing declined significantly. Hence, the declines seen throughout quarters 2 and 3 may be due to decreased testing or other impacts of COVID-19 and do not necessarily reflect such a large decrease in HIV transmission.

HIV testing and PrEP use decreased in NSW during 2020, likely due to reduced service capacity and reduced casual sex activity during COVID-19
During July to September 2020, the number of HIV tests conducted in publicly funded sexual health clinics (n=9,310) decreased by 37% compared to the same period in 2019. This reduction is likely due to the impact of reduced service capacity and reduced casual sex activity during COVID-19. Testing remained targeted with 63% of these HIV tests done by MSM.

Although testing in sexual health clinics has increased this quarter compared to April to June 2020 (n=6,684), it is a vital to increase HIV testing in priority populations in 2020.

Community based rapid HIV tests and HIV dried blood spot (DBS) self-sampling tests also fell during 2020, likely due to the impact of COVID-19 restrictions. During July to September the number of HIV DBS tests increased by 165% to 1,032 tests compared to April to June 2020; and this is 4% higher than the same period in 2019.

Since April 2018, the total number of unique NSW residents prescribed PrEP under the PBS for HIV prevention increased steadily over time to 15,881 people in June 2020. During April to June 2020, PrEP use declined by 21% to 7,135 people prescribed PrEP compared to the previous quarter. This was likely due to lower levels of casual sex activity. Sex with casual partners among gay and bisexual men, as reported by self-assessment in the Flux cohort study, decreased markedly in response to COVID-19.

The NSW Government and community partners rapidly re-oriented services and programs in response to COVID-19, to ensure the ongoing availability of HIV prevention, testing and treatment with a focus on innovative online services and telehealth.

However, it is vital that HIV testing and PrEP use in priority populations is increased in 2020. Communication messaging will promote HIV testing and recommencement of PrEP to priority populations.

The time from HIV diagnosis to treatment initiation continues to improve
Of 72 NSW residents diagnosed from January to March 2020 now followed up six months after diagnosis, the median time to treatment was 13 days. The proportion of those on treatment within six weeks of diagnosis was 88%, while the proportion of those on treatment within two weeks was 54%. Of the 68 on treatment within 6 months, 94% had an undetectable viral load at the time of six-month follow-up.

Key data

HIV INFECTIONS	Target group	Jul-Sep 2020	Compared with Jul-Sep 2015-2019 average
Number of NSW residents newly diagnosed	All new diagnoses	40	45% less (av. n = 73.2)
	MSM	32	45% less (av. n = 58.6)
	Australian-born MSM	12	55% less (av. n = 26.8)
	Overseas-born MSM	20	37% less (av. n = 31.8)
	Heterosexuals	7	45% less (av. n = 12.8)
Number of new diagnoses with evidence of early stage infection	All new diagnoses	15	47% less (av. n = 28.2)
	MSM	14	45% less (av. n = 25.4)
	Australian-born MSM	6	56% less (av. n = 13.6)
	Overseas-born MSM	8	32% less (av. n = 11.8)
	Heterosexuals	1	62% less (av. n = 2.6)
Number all new diagnoses with evidence of late diagnosis	All new diagnoses	14	39% less (av. n = 22.8)
	MSM	10	39% less (av. n = 16.4)
	Australian-born MSM	4	29% less (av. n = 5.6)
	Overseas-born MSM	6	44% less (av. n = 10.8)
	Heterosexuals	3	44% less (av. n = 5.4)
PREVENT	**Target group**	**Apr 2018 –Sep 2020**	
Number of unique people dispensed PrEP through PBS at least once	People in NSW at high risk of HIV infection	16,833	
TEST	**Target group**	**Jul-Sep 2020**	**Compared with Jul-Sep 2019**
Number of HIV serology tests performed in NSW	All	143,129	8% less (n=155,470)
Number of HIV tests performed in NSW public sexual health clinics.	All	9,130	37% less (n=14,511)
	Identifying as MSM	5,721	34% less (n=8,696)
Number of HIV DBS tests (Nov 2016 – Sep 2020)		6,905 (13 HIV positive)	
TREAT	**Target group**	**Apr-Jun 2020**	**Target**
Proportion of patients with diagnosed HIV infection in care, who were on treatment	Sexual Health and HIV Clinic attendees	99%	95%
	Select high caseload general practices	98%	95%
Proportion of NSW residents newly diagnosed with HIV who initiated ART within four and six weeks of diagnosis	Newly diagnosed Jan-Mar 2020 (n=72)	54% < 2 weeks 88% < 6 weeks	>90%
Proportion of NSW residents newly diagnosed who were reported to be virally supressed (VL < 200 copies/mL) at 6-month follow-up	Newly diagnosed Jan-Dec 2019 (n=72)	89%	100%

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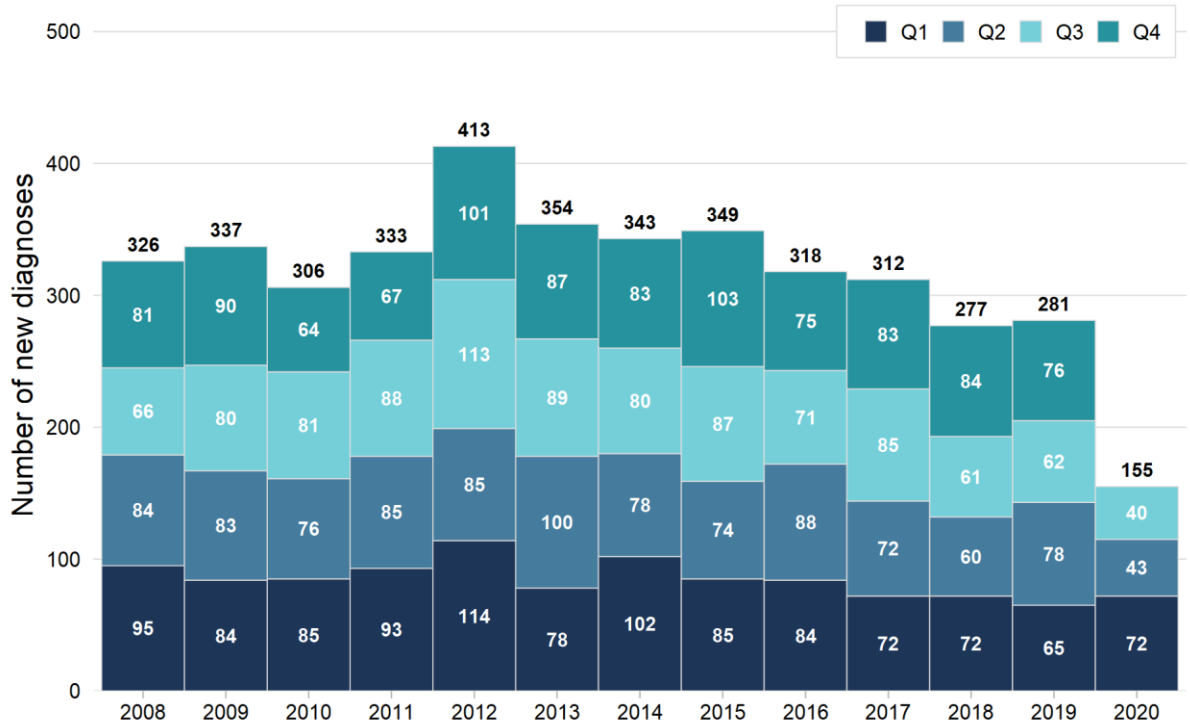
Glossary of Terms

ART	Antiretroviral therapy
CAIC	Condomless anal intercourse with casual partners
CTG	Closing the Gap
GBM	Gay and bisexual men
HIV	Human Immunodeficiency Virus
LHD	Local Health District
MSM	Men who have sex with men
HET	People with heterosexual risk exposure
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, January 2008 to September 2020



Source: Notifiable Conditions Information Management System, Health Protection NSW, 9 November 2020

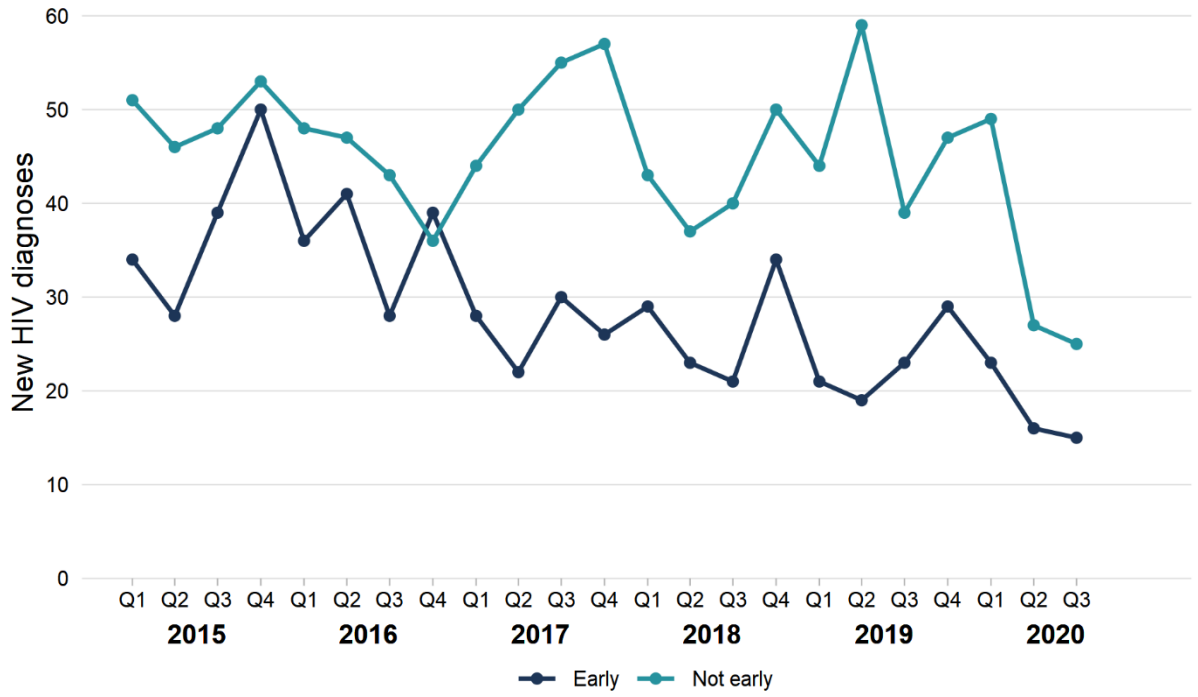
In July to September (Q3) 2020:

- Forty NSW residents were notified to NSW Health with a newly diagnosed HIV infection, 45% less than the Q3 2015-2019 average of 73.2 (Figure 1).
- Of 40, 15 (38%) had evidence their infection was acquired within one year of diagnosis (early stage infection), 47% less than the Q3 2015-2019 average of 28.2 (Figure 2).
- Of 40 people newly diagnosed in Q3 2020, 14 (35%) had evidence of late diagnosis, a decrease of 39% compared with the Q3 2015-2019 average count of 22.8 (Figure 3).

In January to September 2020:

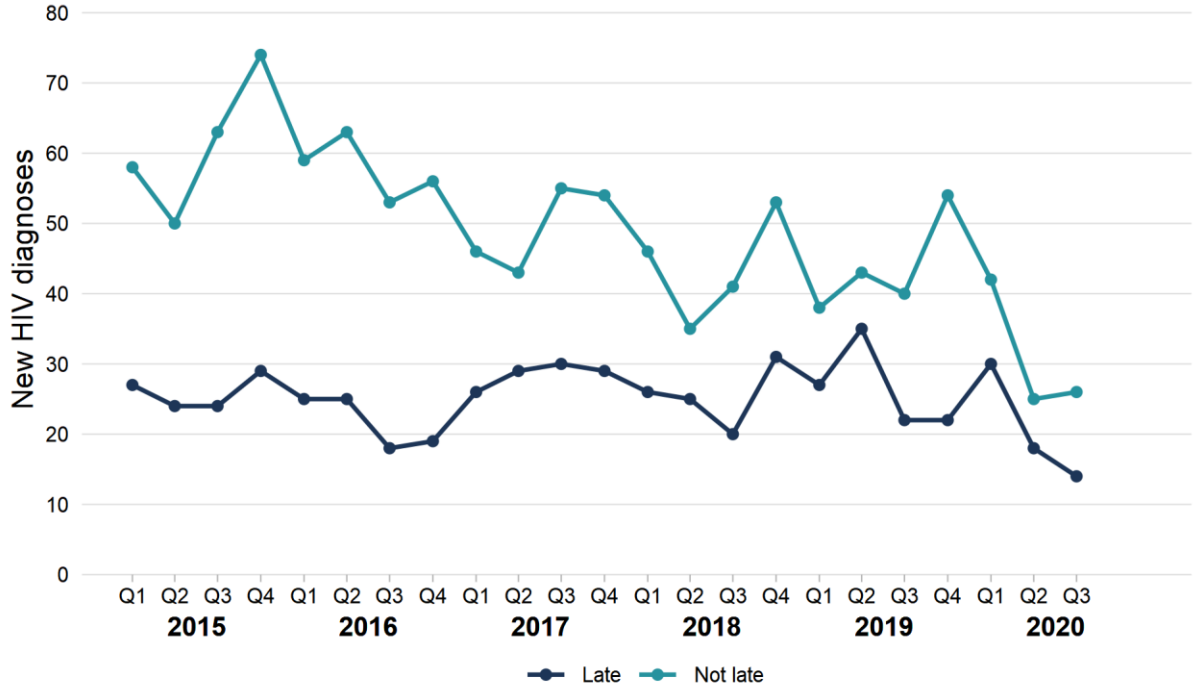
- One hundred and fifty-five NSW residents were notified to NSW Health with newly diagnosed HIV infection, 31% fewer than the January to September 2015-2019 average of 223.2 (Figure 1a).
- Of 155, 54 (35%) had evidence of early stage infection, 36% less than the January to September 2015-2019 average of 84.4 (Figure 2).
- Of 155 people newly diagnosed so far in 2020, 62 (40%) had evidence of late diagnosis, a decrease of 19% compared with the January to September 2015-2019 average count of 76.6 (Figure 3).

Figure 2: New HIV diagnoses by evidence of early stage infection, January 2015 to September 2020



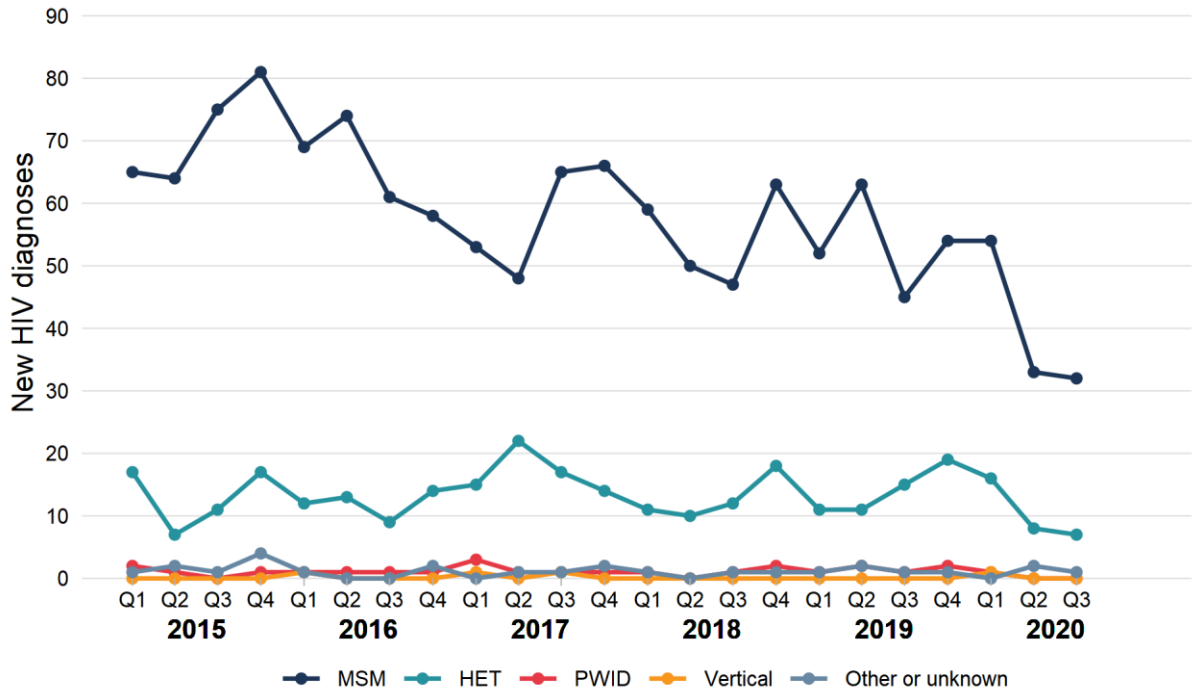
Early stage infection: a sero-conversion like illness or negative or indeterminate HIV test within 12 months of diagnosis, irrespective of CD4 or presentation with an AIDS defining illness at diagnosis

Figure 3: New HIV diagnoses by evidence of late diagnosis, January 2015 to September 2020



Late diagnosis: a CD4 count of less than 350 or an AIDS defining illness at the time or within three months of diagnosis, in the absence of 'early' criteria.

Figure 4: New HIV diagnoses by reported risk exposure, January 2015 to September 2020



In July to September (Q3) 2020:

- Thirty-two (80%) were men who have sex with men (MSM) and seven (18%) were people with heterosexual exposure only (HET). This is 45% fewer MSM, and 45% fewer HET compared with the new diagnosis averages of Q3 2015-2019 (av. n MSM = 58.6; av. n HET = 12.8).

In January to September 2020:

- Of 155, 119 (77%) were MSM, 31 (20%) were HET, one (1%) likely acquired HIV via injecting drugs, one via vertical transmission and three (2%) via another exposure (Figure 4). This is 33% fewer MSM and 20% fewer HET compared with the new diagnosis averages for January to September 2015-2019 (av. n MSM = 178.0; av. n HET = 38.6) (Figure 4).
- A single case with risk of vertical transmission was reported in Q1 2020. This case was born overseas and after public health investigation it was determined that the most likely exposure was mother-to-child transmission, which occurred before the case moved to NSW.

Figure 5: New HIV diagnoses in MSM by place of birth, with overseas-born by years living in Australia, January 2015 to September 2020

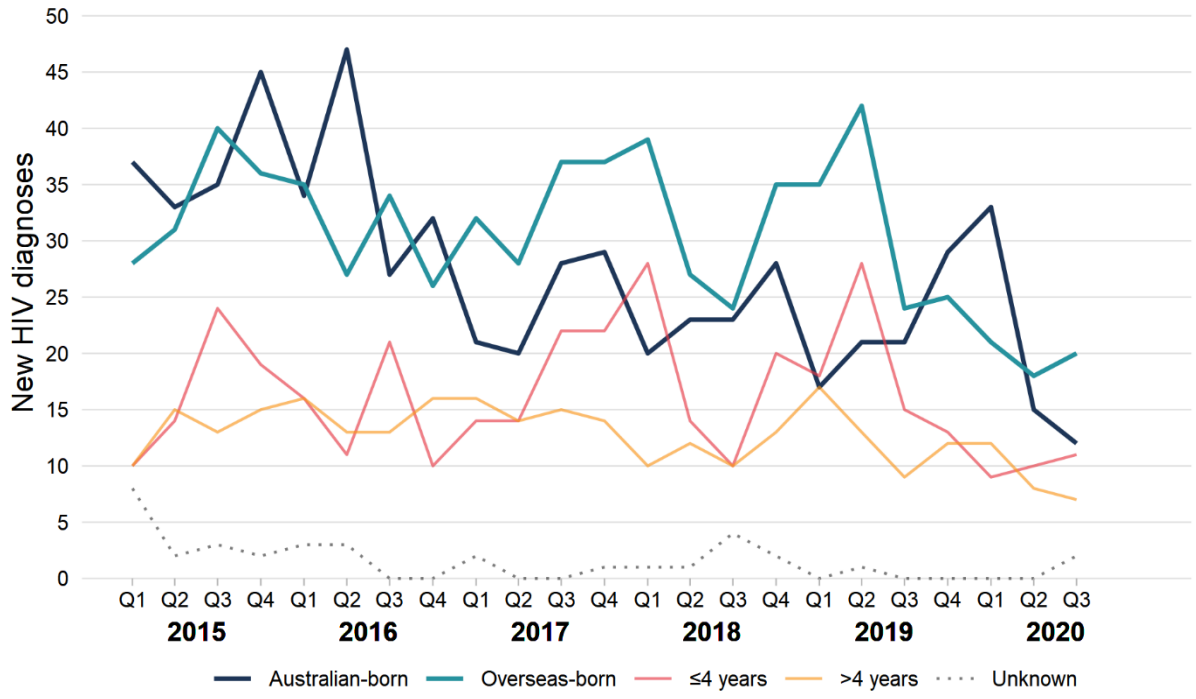
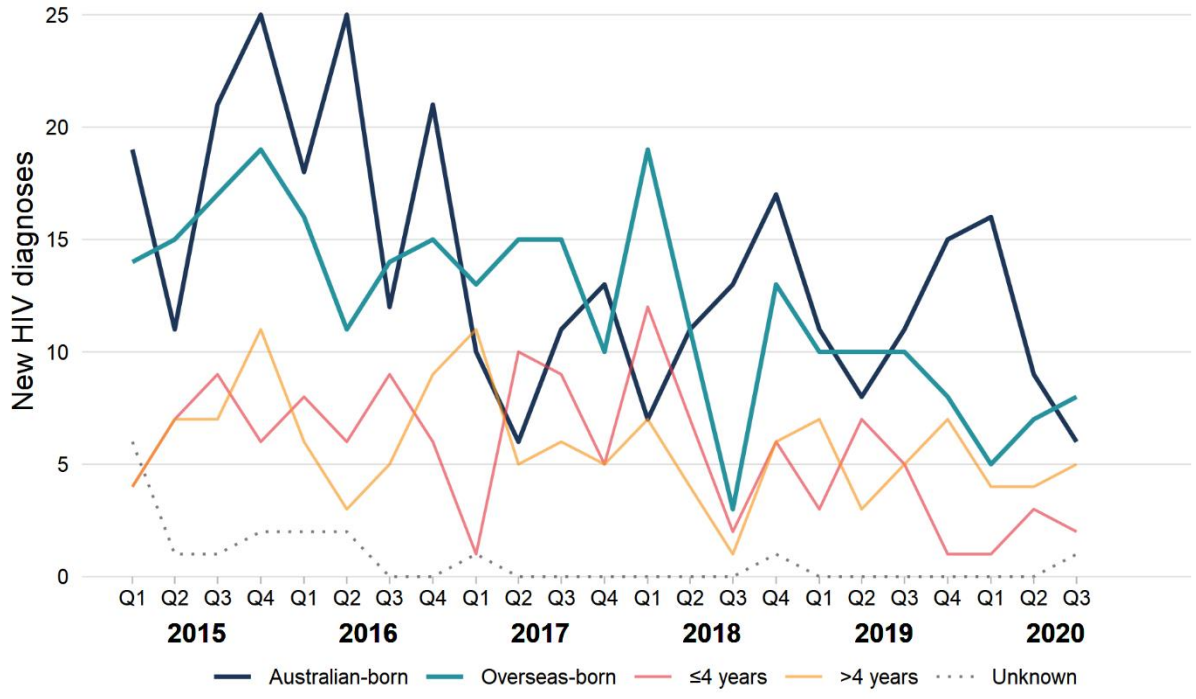


Figure 6: New HIV diagnoses with evidence of early stage infection in MSM by place of birth, with overseas-born by years living in Australia, January 2015 to September 2020



In July to September (Q3) 2020:

- Twelve of the 32 (37.5%) newly diagnosed MSM were Australian-born, 55% less than the average for Q3 2015-2019 (av. n=26.8). Six of 12 (50%) Australian-born newly diagnosed MSM had evidence their infection was acquired within one year of diagnosis (early stage infection), 56% less than the Q3 2015-2019 average of 13.6.

- Twenty of the 32 (62.5%) newly diagnosed MSM were overseas-born, 37% less than the average for Q3 2015-2019 (av. n=31.8). Eleven of these MSM had lived in Australia for four years or less at the time of HIV diagnosis, 40% less than the Q3 2015-2019 average of 18.4, seven had lived in Australia for more than four years, 42% less than the comparison period average of 12.0 and two for an unknown length of time. Eight of 20 (40%) overseas-born newly diagnosed MSM had evidence of early stage infection, 32% less than the Q3 2015-2019 average of 11.8.

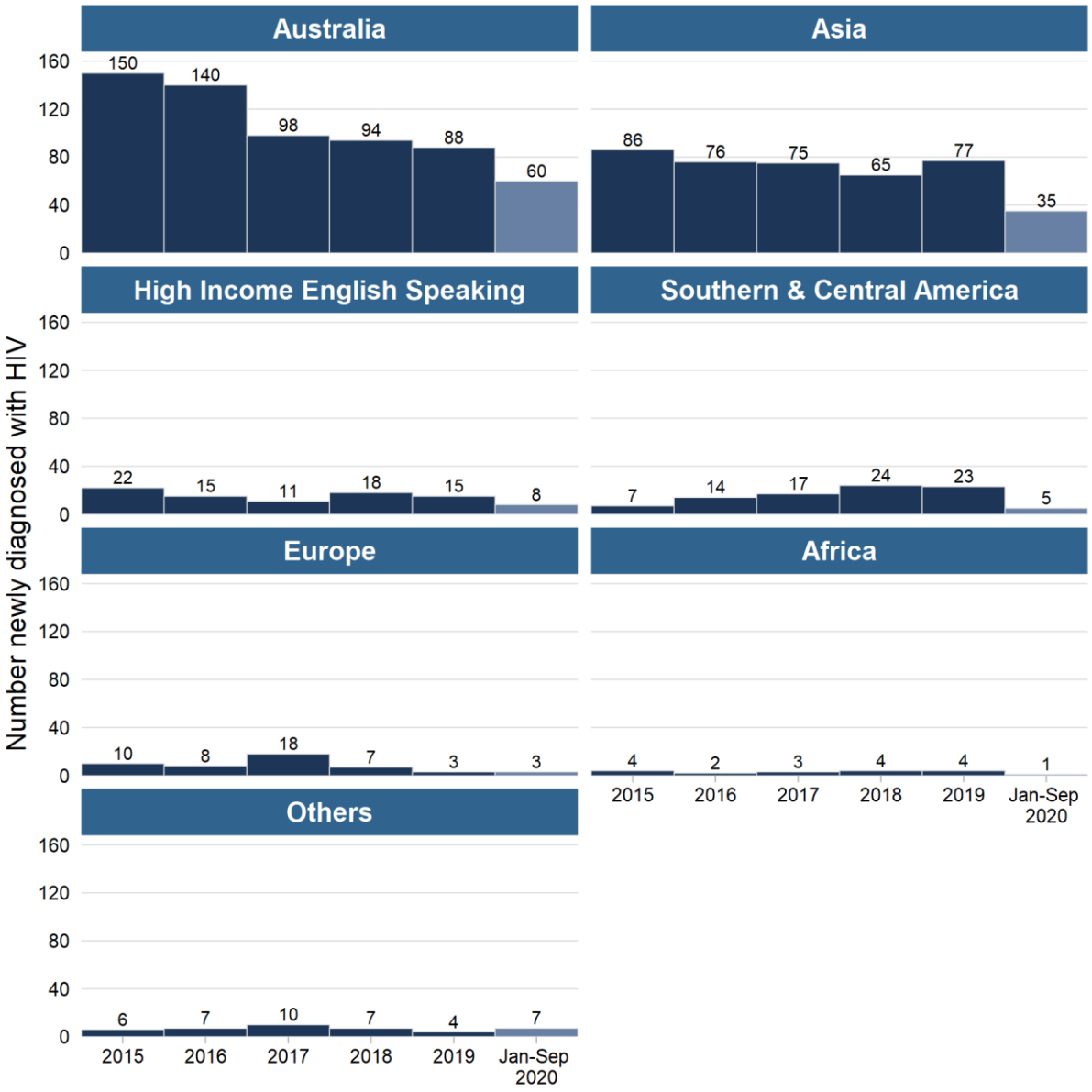
In January to September 2020:

- Sixty of 119 (50%) MSM newly diagnosed were Australian-born, 26% less than the average for January to September 2015-2019 (av. n=81.4) (Figure 5). These people ranged from 18-60 years old with a median age of 35.5. Thirty-one of 60 (52%) Australian-born newly diagnosed MSM had evidence of early stage infection, 20% less than the January to September 2015-2019 average (av. n=38.8) (Figure 6).

- Fifty-nine of 119 (50%) MSM newly diagnosed were overseas-born, 39% less than the January to September 2015-2019 average (av. n=96.6) (Figure 5). These people ranged from 19-63 years old with a median age of 30. Thirty of these MSM had lived in Australia for four years or less at the time of their HIV diagnosis, 42% less than the January to September 2015-2019 average of 51.8, 27 lived in Australia for more than four years, 31% less than the comparison period average of 39.2 and two for an unknown length of time. Twenty of 59 (34%) overseas-born newly diagnosed MSM had evidence of early stage infection, a 48% reduction compared to the January to September 2015-2019 average (av. n=38.6) (Figure 6). Of these 20 with early stage infection, six had been in NSW for four years or less, while 13 lived in Australia for more than four years and one was unknown.

- Two overseas-born trans women were included in the broader MSM exposure category due to current limitations in data collection and overall exposure classification. However, work is progressing to update how gender is collected and recorded for new HIV diagnoses. A national review of exposure classification for HIV surveillance is also ongoing.

Figure 7: New HIV diagnoses in MSM by world area of birth, January 2015 to September 2020



High-Income English-Speaking countries include Canada, USA, United Kingdom, Ireland and New Zealand

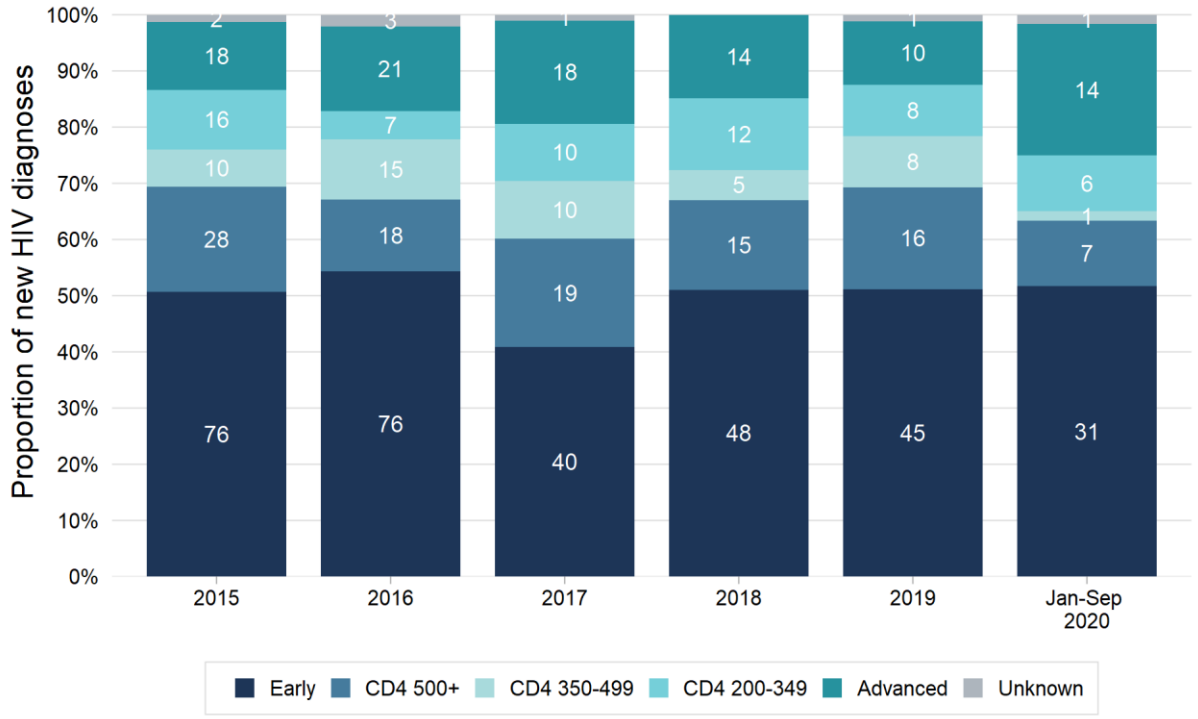
Comments on Figure 7

- Of 119 MSM newly diagnosed in NSW during January to September 2020, 50% were born in Australia, 24% in South-East Asia, 8% in Oceania and less than 5% in Southern & Central America, North-West Europe, Southern & Eastern Europe, Southern & Central Asia, North-East Asia 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 (10a), overseas-born MSM (10b), and among all groups other than MSM (10c). **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. **Advanced stage** is a CD4 count less than 200 or an AIDS defining illness in absence of 'Early' criteria. Categories of **CD4 500+, 350-499, 200-349** exclude early and advanced stage cases. Cases with a CD4 count less than 350 or are advanced stage are considered to have evidence of **late diagnosis**.

Figure 8a: Stage of infection in newly diagnosed Australian-born MSM, January 2015 to September 2020



Comment on Figures 8a-c

- Of 60 Australian-born MSM newly diagnosed in January to September 2020, 31 (52%) had evidence of early stage infection, 20% less than the January to September 2015-2019 average of 38.8. Twenty (33%) had evidence of late diagnosis, 5% less than the comparison period average (av. n=21.0) (Figure 8a).

- Of 59 overseas-born MSM newly diagnosed in January to September 2020, 20 (34%) had evidence of early stage infection, 48% less relative to the comparison period average of 38.6. Twenty-four (41%) had evidence of late diagnosis, 28% less than the comparison period average of 33.4 (Figure 8b).

- The number of new diagnoses in NSW residents who were not MSM was 20% lower in January to September 2020 (n=36) compared to the five-year average for the same period (n=45.2). There were 18 with evidence of late diagnosis, 19% less than the January to September 2015-2019 average of 22.2 (Figure 8c).

Figure 8b: Stage of infection in newly diagnosed overseas-born MSM, January 2015 to September 2020

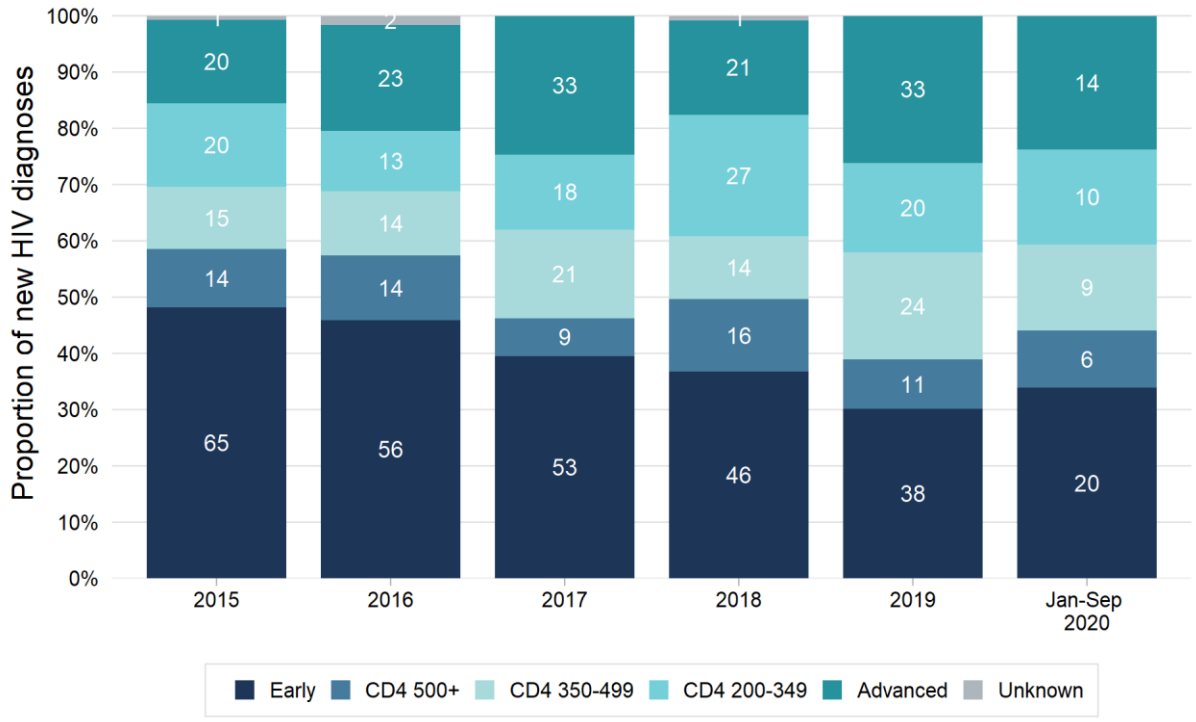


Figure 8c: Stage of infection in new HIV diagnoses with a risk other than MSM, January 2015 to September 2020

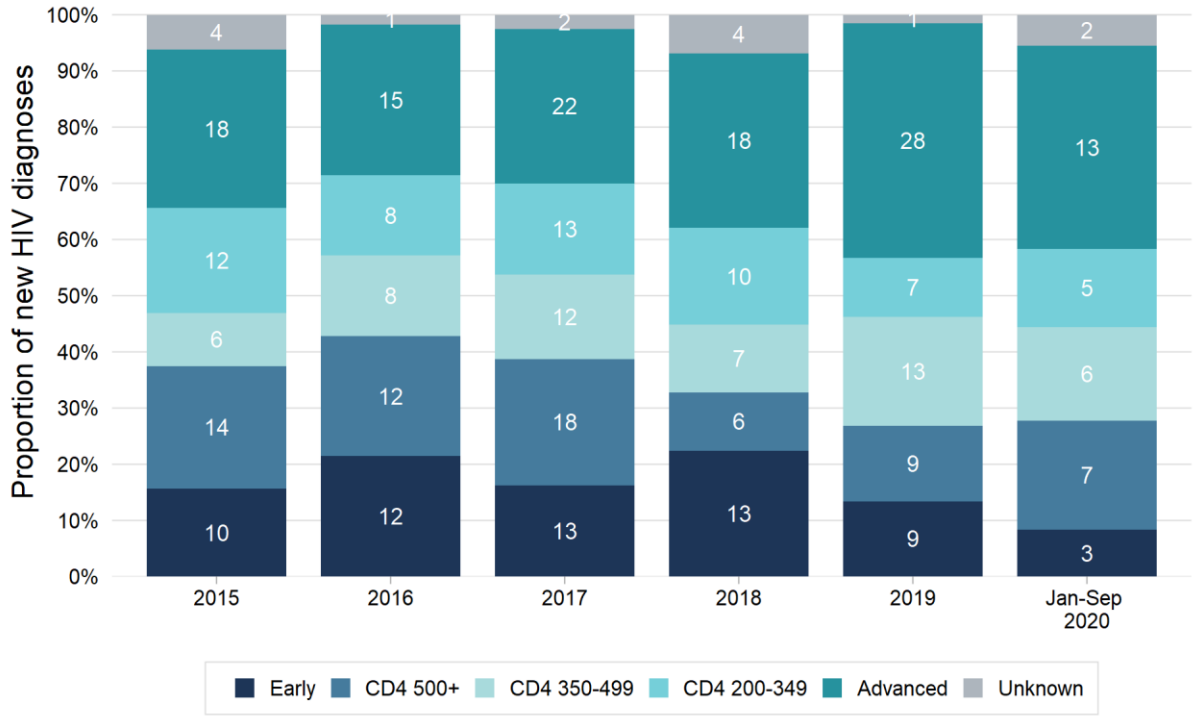
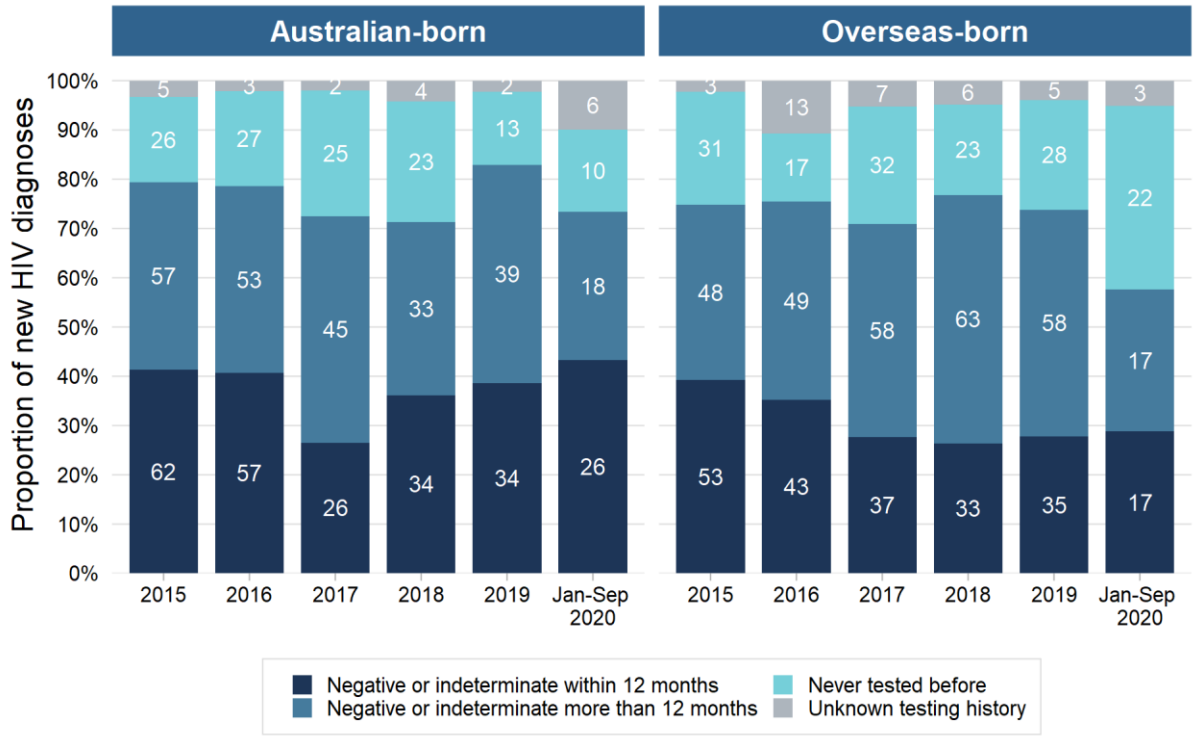


Figure 9: HIV testing history in newly diagnosed MSM, January 2015 to September 2020



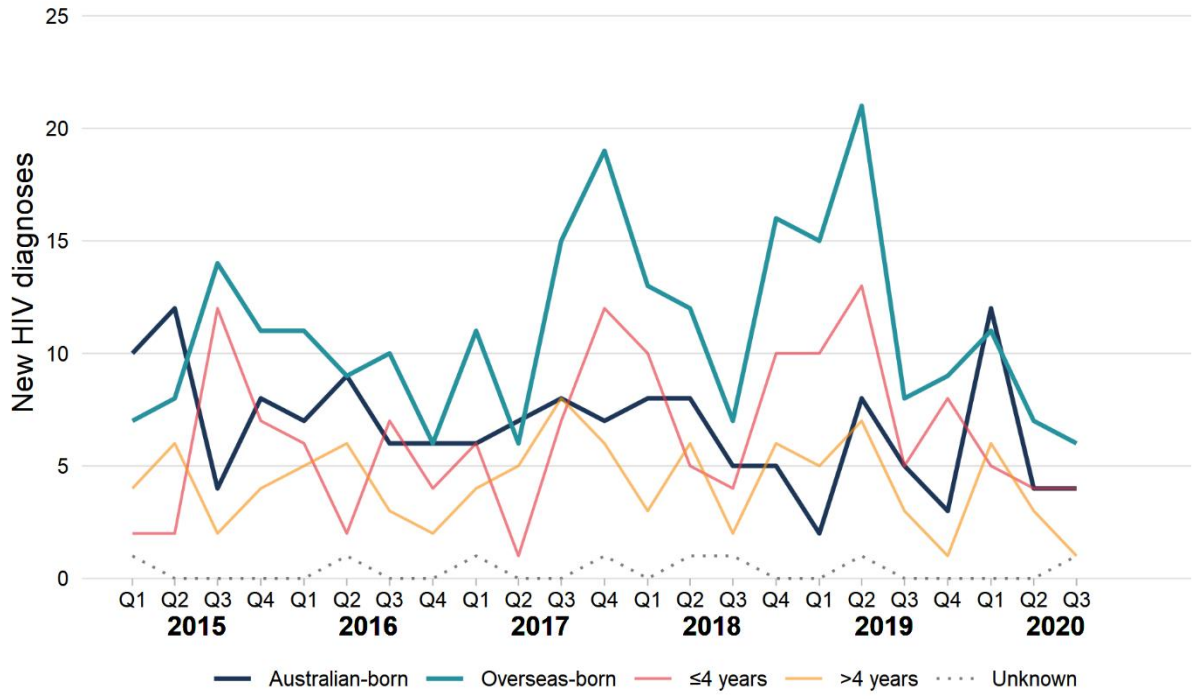
Of 60 Australian-born MSM newly diagnosed during January to September 2020:

- Twenty-six (43%) were reported (by a laboratory, a doctor, or the patient) to have had a negative or indeterminate HIV test within 12 months of diagnosis.
- Eighteen (30%) were reported to have had a negative or indeterminate HIV test sometime in the past, but not within 12 months of diagnosis.
- Ten (17%) reported not ever having had an HIV test prior to diagnosis.
- Over half had not been testing according to guidelines.
- Twenty (33%) had evidence of late diagnosis.

Of 59 overseas-born MSM newly diagnosed during January to September 2020:

- Seventeen (29%) were reported (by a laboratory, a doctor, or the patient) to have had a negative or indeterminate HIV test within 12 months of diagnosis.
- Seventeen (29%) were reported to have had a negative or indeterminate HIV test sometime in the past, but not within 12 months of diagnosis.
- Twenty-two (37%) reported not ever having had an HIV test prior to diagnosis.
- Around two thirds had not been testing according to guidelines.
- Twenty-four (41%) had evidence of late diagnosis.

Figure 10: New HIV diagnoses with evidence of late diagnosis in MSM by place of birth, with overseas-born by years living in Australia, January 2015 to September 2020



In January to September 2020:

- Of 62 NSW residents with evidence of late HIV diagnosis, 44 (71%) were MSM, 19% less than the January to September 2015-2019 average count of 54.4.
- Twenty (45%) of the 44 MSM with evidence of late diagnosis were Australian-born, 5% less than the January to September 2015-2019 average count of 21.0 (Figure 10).
- Twenty-four (55%) of the 44 MSM with evidence of late diagnosis were overseas-born, a 28% decrease relative to the January to September 2015-2019 average count of 33.4 (Figure 10). Thirteen of these 24 MSM had lived in Australia for four years or less at the time of their HIV diagnosis, 29% less than the January to September 2015-2019 average of 18.4, while ten had lived in Australia for more than four years, 28% less than the comparison period average of 13.8 and one was unknown.

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 September 2020 vs the 2015-2019 average count, and the count difference

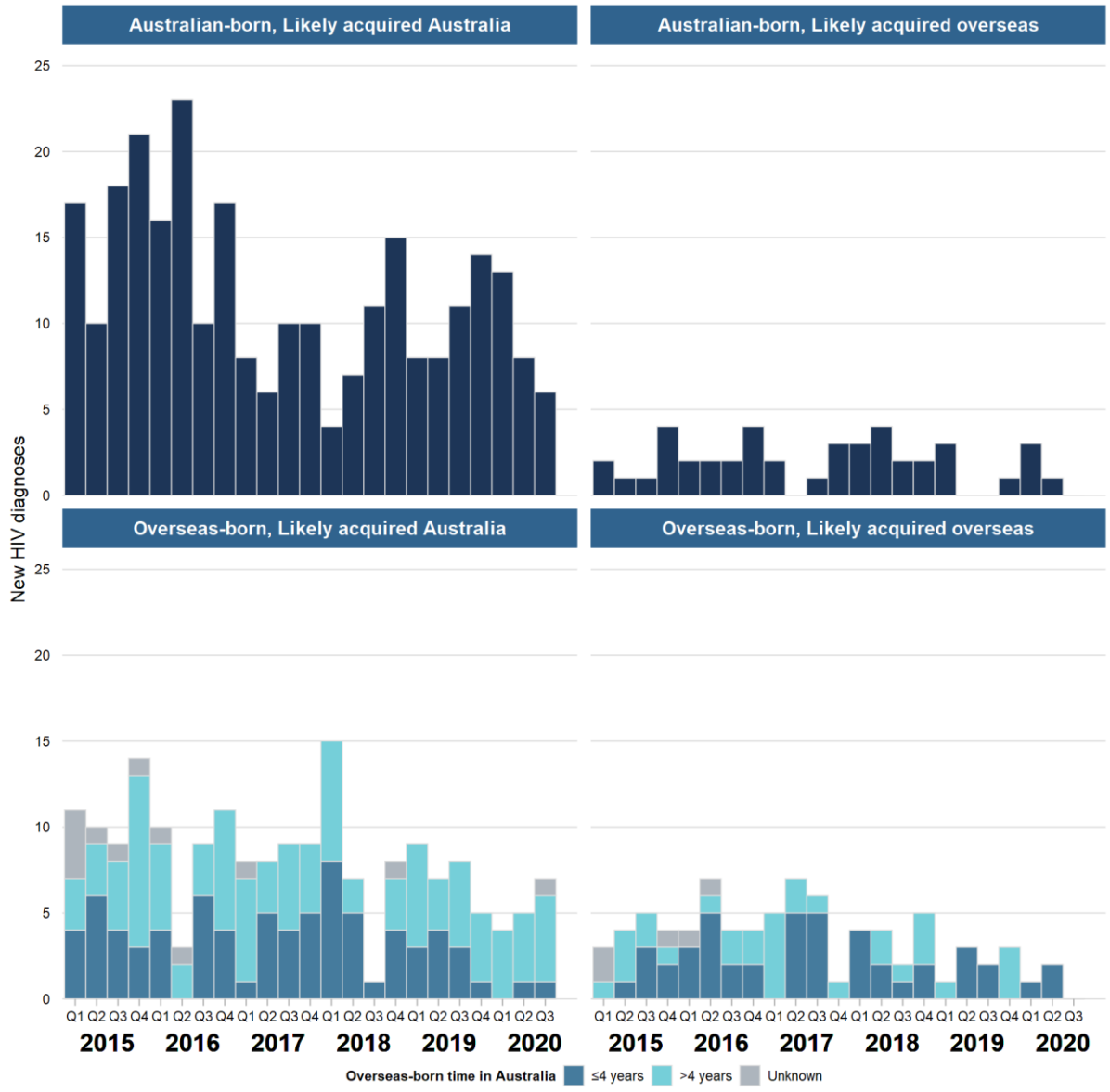
Case characteristics	Australian-born MSM			Overseas-born MSM		
	Jan-Sep 2015-2019 average	Jan-Sep 2020	Count (%) diff.	Jan-Sep 2015-2019 average	Jan-Sep 2020	Count (%) diff.
Number	**81.4**	**60**	**-21.4 (-26%)**	**96.6**	**59**	**-37.6 (-39%)**
Gender						
Male	80.8	60	-20.8 (-26%)	94.2	57	-37.2 (-39%)
Transgender[1]	0.6	0	-0.6 (-100%)	2.4	2	-0.4 (-17%)
Age at diagnosis						
0 to 19	1.4	1	-0.4 (-29%)	1.6	1	-0.6 (-38%)
20 to 29	23.6	10	-13.6 (-58%)	36.6	27	-9.6 (-26%)
30 to 39	20.2	24	+3.8 (+19%)	37.8	17	-20.8 (-55%)
40 to 49	18.8	11	-7.8 (-41%)	12	10	-2 (-17%)
50 and over	17.4	14	-3.4 (-20%)	8.6	4	-4.6 (-53%)
Evidence of early stage infection[2]						
Yes	38.8	31	-7.8 (-20%)	38.6	20	-18.6 (-48%)
No	42.6	29	-13.6 (-32%)	58	39	-19 (-33%)
Evidence of late diagnosis[3]						
Yes	21	20	-1 (-5%)	33.4	24	-9.4 (-28%)
No	59.2	39	-20.2 (-34%)	62.8	35	-27.8 (-44%)
Unknown	1.2	1	-0.2 (-17%)	0.4	0	-0.4 (-100%)
Place most likely acquired HIV						
Australia	69	52	-17 (-25%)	52.8	26	-26.8 (-51%)
Overseas	9.6	7	-2.6 (-27%)	39	25	-14 (-36%)
Unknown	2.8	1	-1.8 (-64%)	4.8	8	+3.2 (+67%)
Reported HIV risks						
MSM	70.2	47	-23.2 (-33%)	92	54	-38 (-41%)
MSM and IDU	11.2	13	+1.8 (+16%)	4.6	5	+0.4 (+9%)

[1]All cases in 2020 are trans-women whose most likely risk exposure was sex with cisgender men. This was confirmed by case review, as further detail is not yet routinely collected.

[2]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.

[3]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 sero-conversion illness and/or a negative or indeterminate HIV test in the 12 months prior to diagnosis.

Figure 11a: New HIV diagnoses with evidence of early stage infection in MSM by place of birth and place of likely HIV acquisition, with overseas-born by years living in Australia, January 2015 to September 2020



Of 60 Australian-born MSM newly diagnosed in January to September 2020:

- Fifty-two (87%) of these Australian-born MSM likely acquired HIV in Australia, 25% less than the January to September 2015-2019 average of 69.0, and seven (12%) likely acquired HIV overseas, 27% less than in the comparison period (av. n=9.6). One was unknown.
- Of the 52 who acquired HIV in Australia, 27 (52%) had evidence of early stage infection, 19% less than the January to September 2015-2019 average of 33.4 (Figure 11a). Seventeen (33%) had evidence of late diagnosis, 7% less than the January to September 2015-2019 average of 18.2 (Figure 11b).
- Of seven who likely acquired HIV overseas four (57%) had evidence of early stage infection (Figure 11a), 20% less than in the comparison period (av.n=5.0). Two (28%) had evidence of late diagnosis, 11% more than the January to September 2015-2019 average of 1.8 (Figure 11b).

Of 59 overseas-born MSM newly diagnosed in January to September 2020:

- Twenty-six (44%) of these overseas-born MSM likely acquired HIV in Australia, 51% less than the average for January to September 2015-2019 (av. n=52.8), and 25 (43%) likely acquired HIV overseas, 36% less than the comparison period (av. n=39.0). Eight were unknown
- Of the 26 who acquired HIV in Australia, 16 (62%) had evidence of early stage infection, 35% less than the January to September 2015-2019 average of 24.8 (Figure 11a). Five (19%) had evidence of late diagnosis 65% less than the January to September 2015-2019 average of 14.4 (Figure 11b).
- Of 25 who acquired HIV overseas three (12%) had evidence of early stage infection (Figure 11a), 75% less than in the comparison period (av.n=12.2). Fifteen (60%) had evidence of late diagnosis, 15% less than the January to September 2015-2019 average of 17.6 (Figure 11b).
- For those diagnosed late, the majority who likely acquired HIV in Australia had lived here for more than four years, while most of those who likely acquired HIV overseas had lived here for four years or less (Figure 11b).

Figure 11b: New HIV diagnoses with late diagnosis in MSM by place of birth and place of likely HIV acquisition, with overseas-born by years living in Australia, January 2015 to September 2020

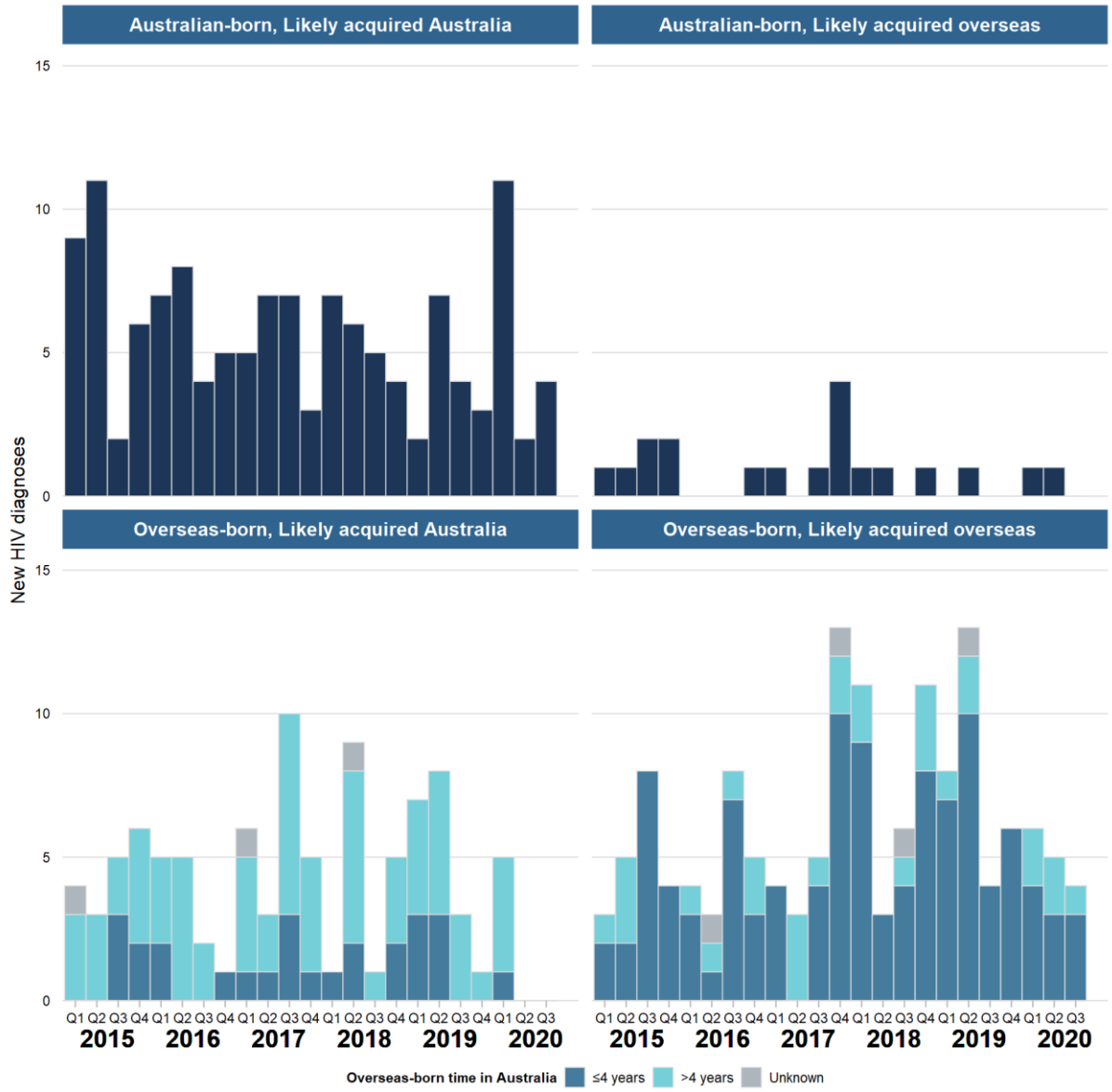
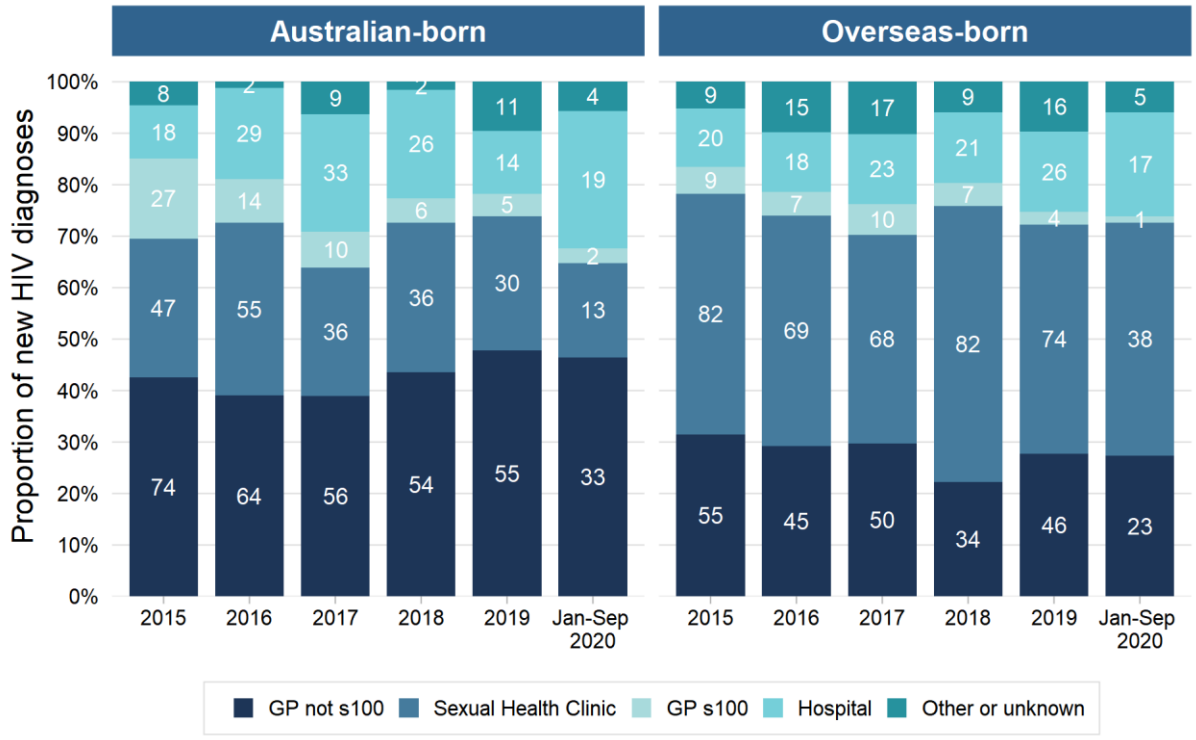


Figure 12: Type of diagnosing doctor for Australian-born new HIV diagnoses, January 2015 to September 2020



Of 71 Australian-born NSW residents with newly diagnosed HIV infection in January to September 2020 (Figure 12):

- Thirty-three (46%) were diagnosed by general practitioners (GPs) not accredited to prescribe antiretroviral therapy (GP not-s100), 25% less than the comparison period (av. n=44.0);
- Thirteen (18%) were diagnosed by sexual health centres including community testing sites, 54% less than the January to September 2015-2019 average (av. n=28.4);
- Nineteen (27%) were diagnosed by hospital doctors, 12% more than the comparison period (av. n=17.0);
- Two (3%) were diagnosed by GP s100 doctors (HIV specialised and accredited to prescribe ART), 77% less than 8.8, the average for January to September 2015-2019, and;
- Four (6%) were diagnosed by other doctor types, 20% less than the average for January to September 2015-2019 (av. n=5.0).

Of 84 overseas-born NSW residents with newly diagnosed HIV infection in January to September 2020 (Figure 12):

- Twenty-three (27%) were diagnosed by non s100 GPs, 27% less than the comparison period (av. n=31.4);
- Thirty-eight (45%) were diagnosed by sexual health centres including community testing sites, 34% less than the January to September 2015-2019 average (av. n=57.6);
- Seventeen (20%) were diagnosed by hospital doctors, 8% more than the comparison period (av. n=15.8);
- One (1%) was diagnosed by a GP s100 doctor, 83% less than 6.0, the average for January to September 2015-2019;
- Five (6%) were diagnosed by other doctor types, 46% less than the average for January to September 2015-2019 (av. n=9.2).

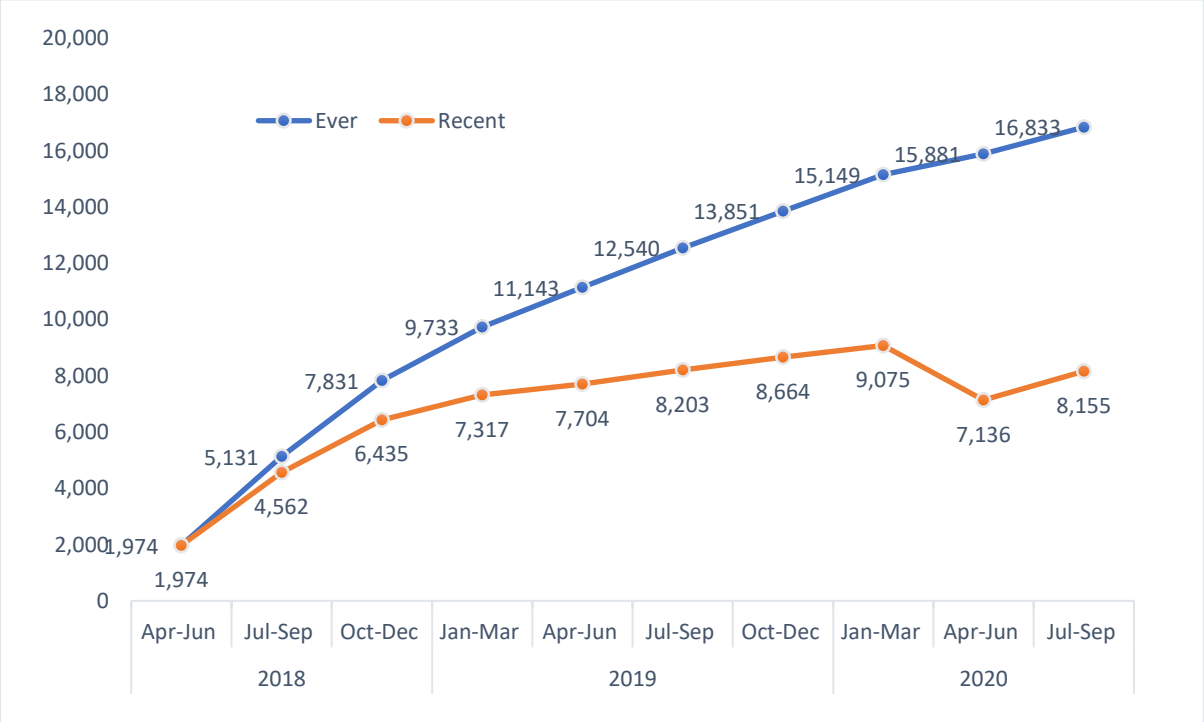
2. Expand HIV Prevention

2.1 How many people were prescribed PrEP on the Pharmaceutical Benefits Scheme (PBS)?

Between 1 April 2018 and 30 September 2020:

- A total of 16,833 (unique number) NSW residents were dispensed PrEP at least once under the PBS for HIV prevention.
- Of the 15,833 residents on PrEP, 98.2% were male.
- Among those who initiated PrEP, 74.3% were prescribed by GP; 98.6% were dispensed by a community pharmacy.
- A total of 196 (1.16%) NSW residents were eligible and prescribed under the Closing the Gap (CTG) program.
- The number of new people dispensed PrEP under the PBS has declined gradually over time. The number of people initiating PrEP increased by 30% to 950 between July and September compared to 732 people in April to June (**Figure 15**).

Figure 13: Total number of unique clients dispensed PrEP between April 2018 (blue line) to September 2020 compared to the quarterly number of unique clients dispensed PrEP (orange line)



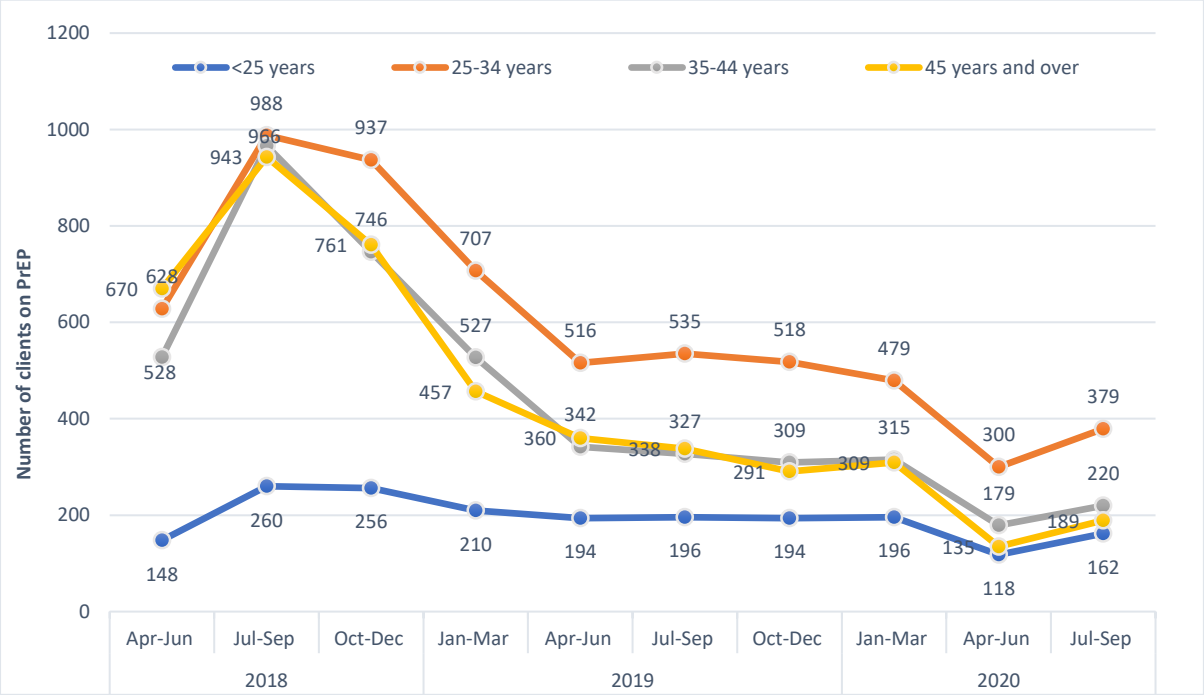
Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme (PBS) data from April 2018 to September 2020.
Note: Based on the quantity and date dispensed, it is estimated that 8,155 unique residents were taking PrEP between July and September 2020. The quarterly number of unique residents (orange line) is lower than the total number of unique clients (blue line). The reasons for this could include: people discontinuing PrEP; moving interstate or internationally; accessing PrEP from other sources including self-importation; or changes to dosing regimens such as on-demand use.

Comment on Figure 13

- Between April 2018 and September 2020, the total number of unique NSW residents prescribed PrEP under the PBS for HIV prevention increased steadily overtime to 16,833 people (blue line).

- Between July and September 2020, the quarterly number of unique NSW residents prescribed PrEP under the PBS for HIV prevention increased by 14% from 7,136 in Q2 2020 to 8,155 people in Q3 2020.

Figure 14: Number of people in each age group dispensed PrEP for the first time between April 2018 to September 2020

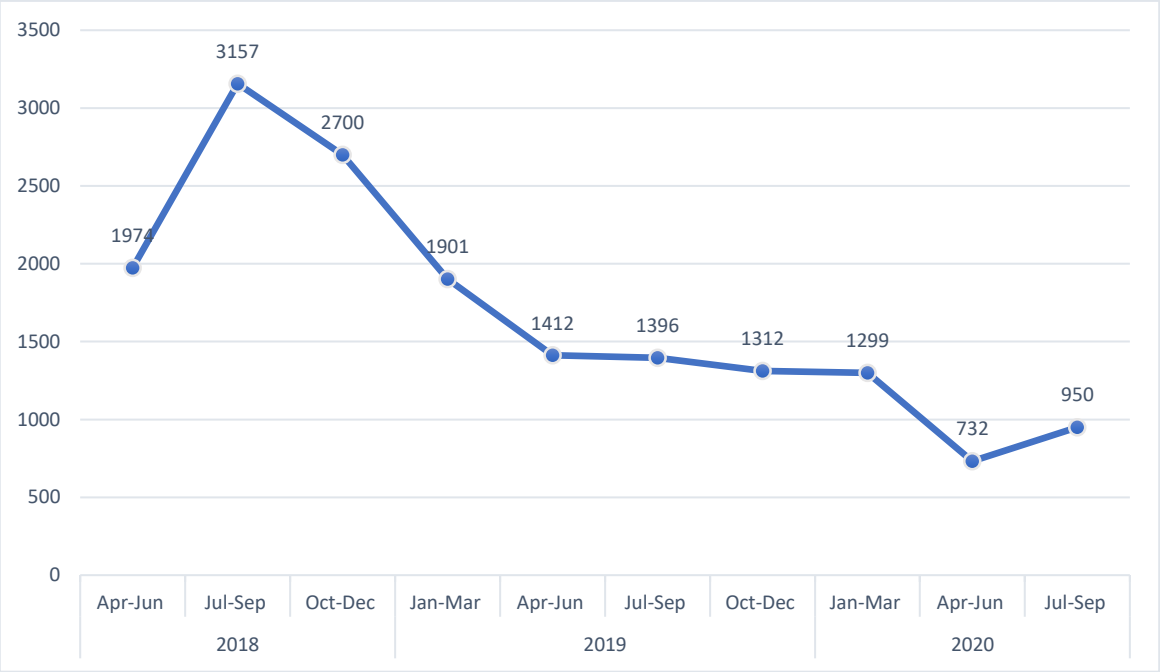


Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme (PBS) data from April 2018 to September 2020.

Comments on Figure 14

- Since April 2018, 1,934 (11.5%) unique clients dispensed PrEP were aged under 25 years, 5,987 (35.6%) were between the ages of 25 and 34 years, 4,459 (26.5%) were between 35 and 44 years and 4,453 (26.4%) aged 45 years and older.
- PrEP initiation was lowest among those aged under 25 years.
- PrEP initiation had increased in all age groups in the quarter from April to September 2020, which is likely due to COVID-19 restrictions.

Figure 15: Number of people dispensed PrEP under the PBS for the first time by quarter between April 2018 to September 2020

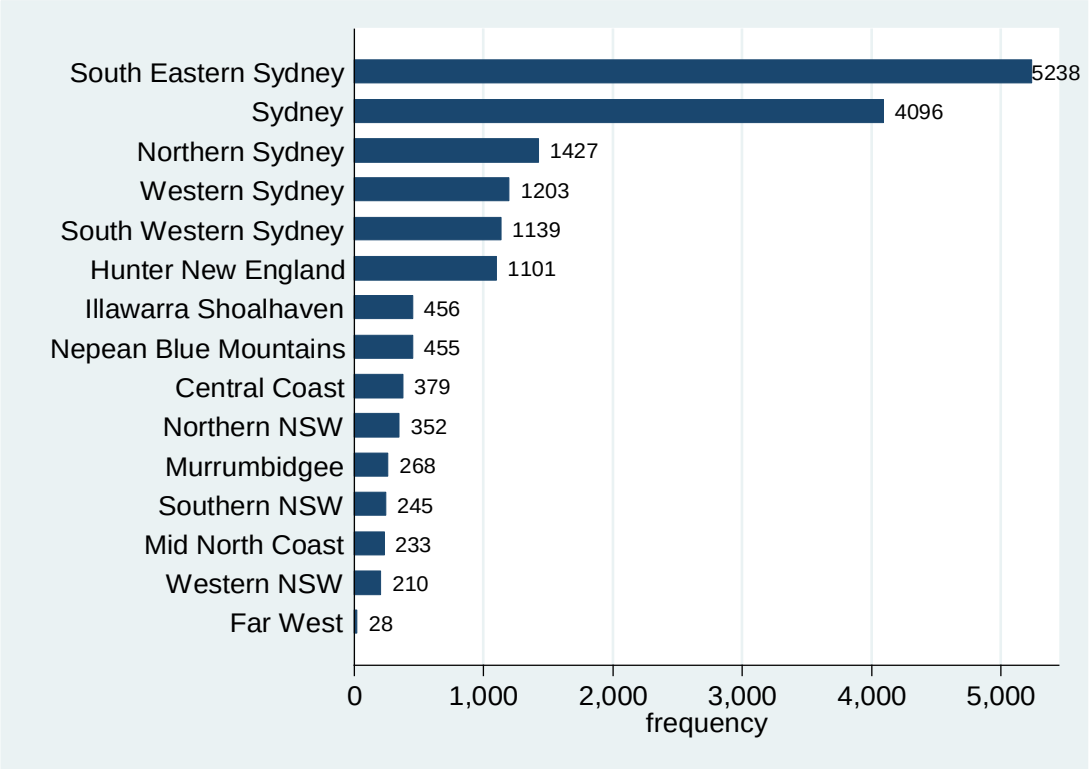


Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme (PBS) data from April 2018 to September 2020.

Comments on Figure 15

- The number of people dispensed PrEP under the PBS for the first time increased significantly between July-September 2018. This was partly due to people transitioning from the EPIC-NSW study to the PBS.
- The number of new people dispensed PrEP under the PBS has declined gradually over time. Between July to September 2020, the number of people initiating PrEP increased by 30% to 950 people compared to 732 in April to June 2020

Figure 16: Number of NSW residents dispensed PrEP by LHDs of patient residence from April 2018 to September 2020[1]



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme (PBS) data from April 2018 to September 2020.
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

Between April 2018 to September 2020:

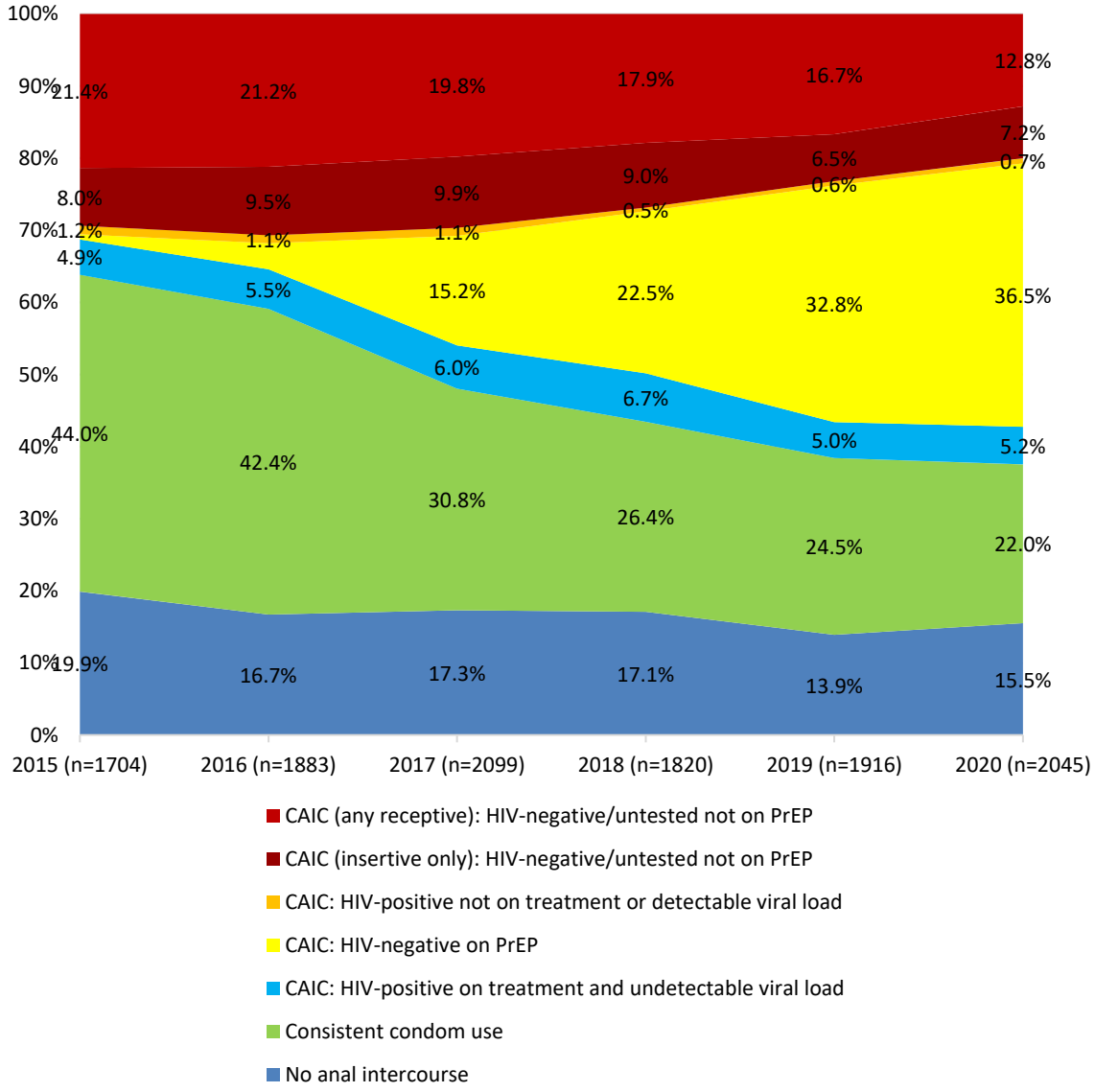
- Almost 84% of people dispensed PrEP under the PBS in NSW were residents of South Eastern Sydney (33.6%) and Sydney LHDs (25.2%), followed by Northern Sydney (8.0%), Western Sydney (6.4%), South Western Sydney (5.8%), and Hunter New England (5.8%).

[1] PrEP was available under the PBS from April 2018.

2.2 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 NSW HIV Strategy, we have modified reporting of condomless anal intercourse with casual partners (CAIC) to distinguish between 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, 2015 to 2020



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. PrEP has become the most commonly used HIV prevention strategy by gay and bisexual men with casual partners. The proportion of gay men with casual male partners who reported PrEP use and condomless anal intercourse reached 36.5% in 2020, compared to 15.2% in 2017.

- As PrEP use has increased, consistent condom use has fallen. In 2020, 22.0% of gay men with casual partners reported consistent condom use, compared to 44.0% in 2015.

- The proportion of gay men with casual partners who reported being HIV-positive, having an undetectable viral load and condomless anal intercourse has remained stable between 2015 and 2020 at around 5-7%.

- The proportion of gay men with casual partners who reported being HIV-positive, not on treatment or having a detectable viral load and who reported CAIC has fallen over time to 0.7% of men with casual partners in 2020, compared to 1.2% in 2015.

- In 2020, 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 20.0%, compared to 29.4% in 2015. This suggests the proportion of gay men who are susceptible to HIV infection has decreased in Sydney as PrEP use has increased.

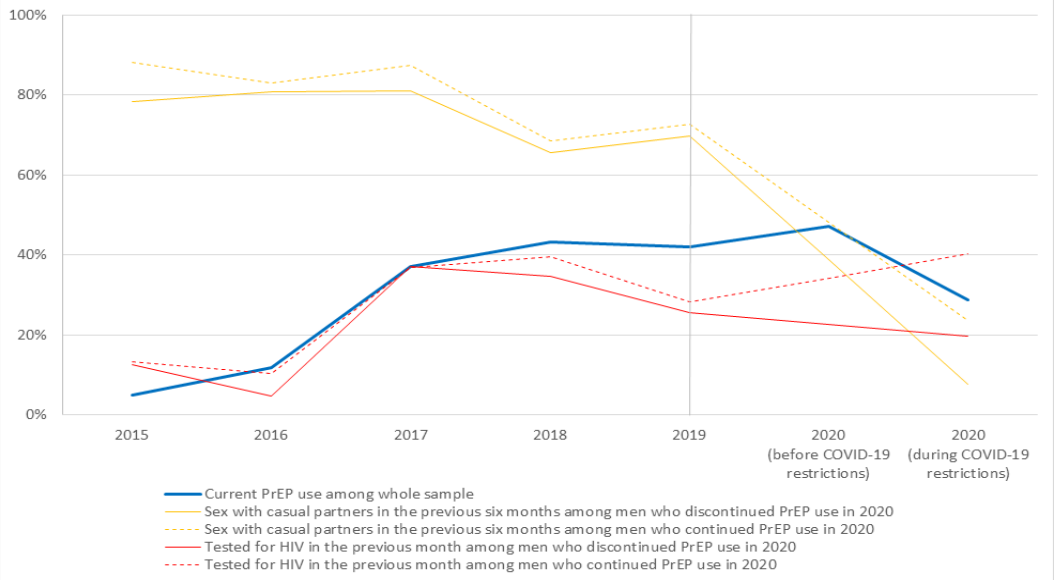
- 'Net prevention coverage', i.e. the proportion of gay men with casual partners who report any form of safe sex, such as avoiding anal intercourse, condom use, PrEP use or undetectable viral load, has increased from 70.0% in 2015 to 79.2% in 2020.

- SGCPS data were collected in February 2020, before any social distancing came into place under the COVID-19 pandemic.

2.3 Effect of COVID-19 on ongoing trends in sexual behaviour, PrEP use, and HIV/STI testing among gay and bisexual men?

The Following Lives Undergoing Change (Flux) cohort study of gay and bisexual men has collected data on sexual behaviour, PrEP use, and HIV testing every six months each year since 2015. In each year, about 1,000 men responded. In April 2020, a special survey asking about these same behaviours prior to and since becoming aware of COVID-19 (up to March 2020 and during March-April 2020 respectively) was completed by 847 HIV negative participants. Prevalent data describing responses from 2015 among these 847 respondents are reported in Figure 17a.

Figure 17a: Sex with casual partners, PrEP use and HIV testing (2015-2020)



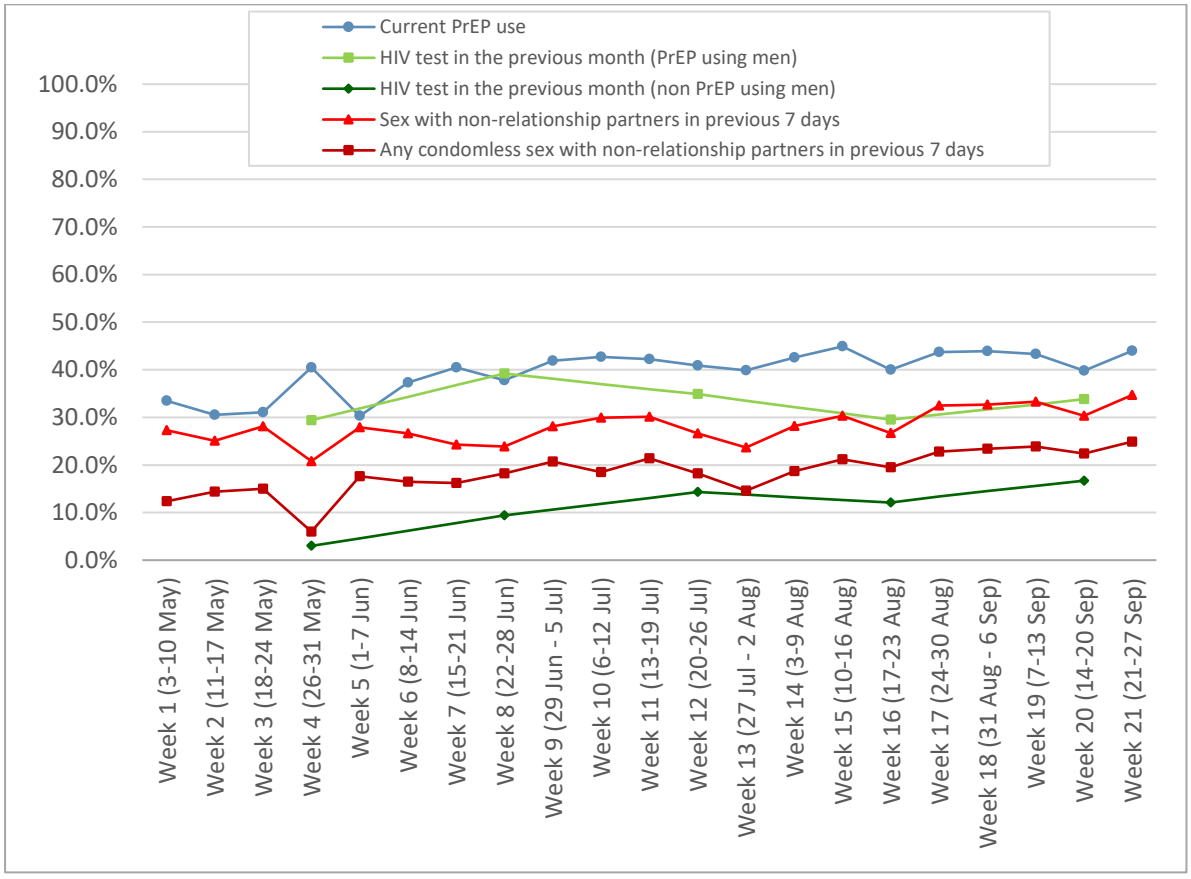
Data source: Following Lives Undergoing Change Study, Kirby Institute, UNSW Sydney. Note: Sex with casual male partners refers to any sexual contacts with casual partners reported for previous six months during 2015-2019; in 2020, the reporting periods are for the period prior to becoming aware of COVID-19 ('Before COVID-19' and the period after becoming aware of COVID-19 ('Since COVID-19'). PrEP use was for current use at the time of survey and is recorded for all participants who did not report being HIV-positive. Testing in previous month is reported for non HIV-positive men according to their current use of PrEP at the time of survey.

Comment on Figure 17a

- Among men who continued using PrEP during COVID-19 restrictions, most reported sex with casual partners between 2015 (88.2%) and 2019 (72.7%). This fell to 24% during COVID-19 restrictions. Prevalence of HIV testing rose from 13% in 2015 to 37% in 2017 and remained stable until the early months of the COVID-19 pandemic (40%).
- Among men who discontinued using PrEP during COVID-19 restrictions, most reported sex with casual partners between 2015 (78%) and 2019 (70%). This fell to 8% during COVID-19 restrictions. Prevalence of HIV testing rose from 13% in 2015 to 37% in 2017, then fell to 26% in 2019, and further declined to 20% during COVID-19 restrictions

Commencing in early May 2020, the Flux study was extended and expanded, to respond to the impact of COVID-19. Whereas previously Flux collected data on sexual behaviour, PrEP use, and HIV testing every six months, the study now collects these data, in an abbreviated form, every week. Beginning in late June 2020, new participants have commenced being enrolled into the study each week to supplement the continuing cohort. Figure 17b shows the weekly results for sexual behaviour, PrEP use, and HIV testing between early May and early July 2020 among NSW respondents.

Figure 17b: Sex with non-relationship partners, PrEP use and HIV testing by week (3rd May 2020 – 27th September 2020)



Data source: Following Lives Undergoing Change Study, Kirby Institute, UNSW Sydney. Note: Data are reported for non HIV-positive respondents in NSW. Sex with non-relationship male partners refers to any sexual contacts with casual partners or other partners with whom respondents were not in a relationship, as reported for the previous seven days, i.e. during the specified reporting week. PrEP use was for current use at the time of survey and is recorded for all participants who did not report being HIV-positive. Testing in previous four weeks is reported for non HIV-positive men according to their current use of PrEP at the time of survey in each of Weeks 4, 8, 12, 16, and 20.

In each week, about 400 continuing participants from the Flux cohort have responded, including about 200 NSW respondents. Additionally, there were just under 100 new participants over time, including about 50 NSW respondents.

Comment on Figure 17b

- Between early May and late September 2020, about one in four men reported sex with non-relationship partners in the previous week. The proportion of men reporting non-relationship sex remained stable over time until Week 16 (17-23 August), since when there has been a suggestion of a slight increase. There was little difference between continuing and new participants.
- Since early May, rates of condomless sex with non-relationship partners in the previous week has gradually risen over time, from just over 10% to about one quarter in late September.
- After an initial slight decline, current PrEP use has gradually risen from about one third to over 40% and has remained fairly stable since mid-August.

- HIV and STI testing in the previous 4 weeks was reported every fourth week. About a third of non-HIV-positive men who were currently using PrEP reported having been tested in the previous 4 weeks at each time point, with little change over time. Initially, less than 10% of men not currently using PrEP reported having been tested in the previous 4 weeks, but this proportion has gradually increased over time, reaching nearly one in five by mid-September.

2.4 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.

2.5 How accessible is the Needle and Syringe Program in NSW?

From October 2019 to September 2020,

- 15,501,037 units of injecting equipment 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.

2.6 What proportion of people re-use other people's needles and syringes (receptive syringe sharing) in NSW?

- In 2020, 16% of respondents reported receptive syringe sharing in the previous month (NSW Needle and Syringe Program Enhanced Data Collection, 2020)[2].

[2] Geddes, L, Iversen J, and Maher L. NSW Needle and Syringe Program Enhanced Data Collection Report 2020, The Kirby Institute, UNSW Australia, Sydney 2020.

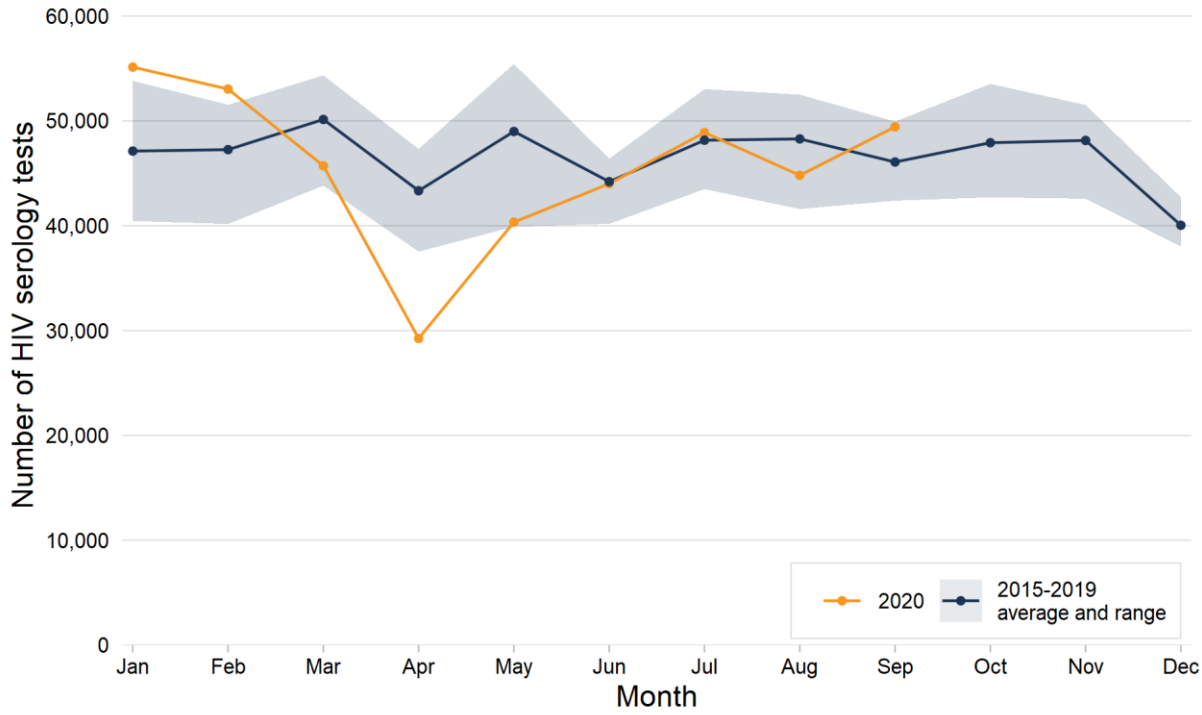
3. Increase HIV testing frequency

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 2015 to Sep 2020



Data source: NSW Health denominator data project, out 18 November 2020.

Comments on Figure 18

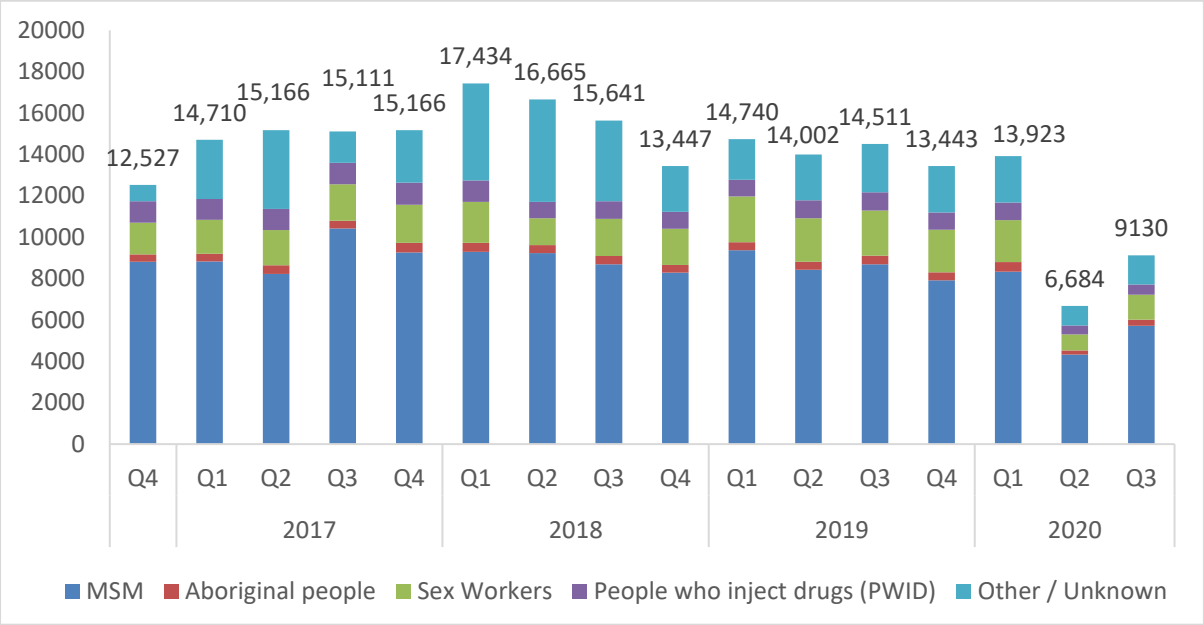
In July to September (Q3) 2020:

- 143,129 HIV serology tests were performed in 15 laboratories in NSW, which was 8% less than Q3 2019 (n=155,470), 3% less than Q3 2018 (n=146,750), 2% more than Q3 2017 (n=140,503), 6% more than Q3 2016 (n=135,289), and 6% more than Q3 2015 (n=134,596). This decrease in testing is most likely a result of the COVID-19 pandemic response. The response saw a redistribution of resources leading to reduced testing capacity, as well as severe restrictions on movement for the general population, which likely affected general healthcare seeking behaviour. However, as restrictions have eased throughout May and June, testing numbers have increased to be more in line with the average expected range.

In January to September 2020:

- 410,618 HIV serology tests were performed in 15 laboratories in NSW, which was 12% less than in January to September 2019 (n=464,244), 8% less than January to September 2018 (n=447,858), 3% less than January to September 2017 (n=422,162), 1% more than January to September 2016 (n=406,956), and 9% more than January to September 2015 (n=376,671).

Figure 19: Number of HIV tests performed in public sexual health clinics in NSW between October 2016 and September 2020, 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. Data presented here does not include Central Coast LHD.

Comments on Figure 19

In July to September 2020:

- The number of HIV tests in PFSHCs (n=9,310) decreased by 37% compared to the number of tests conducted in Q3, 2019. This reduction is likely due to the impact of reduced service capacity and reduced casual sex activity during COVID-19.
- Testing remained targeted with 5,721 of 9,310 (63%) of HIV tests in PFSHCs done by MSM.
- Although testing in PFSHCs has increased by 37% in Q3 compared to Q2 2020, it is vital to increase HIV testing in priority populations in NSW.

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.

In September 2019, the pilot was updated to expand access to at-risk populations. As part of the update, participants can be tested for hepatitis C without an HIV test. People eligible for a hepatitis C test can still opt-in for an HIV test.

Table 2: Recruitment data for the NSW DBS Self-Sampling HIV and HCV Testing Pilot, November 2016 to June 2020

Recruitment indicators	Q3 2020 (Jul - Sep)	Total (Nov 2016 – Sep 2020)
Number of registrations for DBS test (including Hepatitis C)	1,322	9,101
Number of registrations for DBS requesting HIV testing	1,247/1,322 (94%)	8,557/9,101 (94%)
Number (%) of people who registered for a HIV DBS kit who had never tested before or had tested over 2 years ago**	536/1,247 (43%)	3,915/8,557 (46%)
Proportion of returned HIV DBS kits	1,090/1,247 (87%)	7,037/8,557 (82%)
Number of HIV DBS tests performed	1,032	6,900
Number (%) of reactive HIV tests*	3	13

Data Source: NSW Dried Blood Spot Research database.

* Reactive HIV tests were confirmed positive by venous testing and linked into care. Participants with known HIV positive status when accessing DBS testing removed from total.

** Based on registrations for DBS requesting HIV testing (excludes registrations for hepatitis C DBS test only)

Comments on Table 2

In July to September 2020:

- 536 of the 1,247 people who registered for a HIV DBS test had never previously tested for HIV or had been tested more than 2 years ago (43%).
    - Of these, 400 (75%) were Australian born and 136 (25%) were overseas born.
- 1,090 registrations for DBS requesting HIV testing between July to September 2020 were returned for testing (87%)
- There were 3 positive HIV tests.

In November 2016 to July 2020:

- 3,915 of the 8,557 (46%) people who registered for a DBS test had never previously tested for HIV or had tested more than 2 years ago.
    - Of these 2,850 (73%) were Australian-born and 1,065 (27%) were overseas-born.
- 7,037 of the 8,557 registrations for DBS requesting HIV testing were returned (82% return rate).
- The positivity rate of returned HIV test kits is 0.19 per cent (removing known positives)

Table 3: Number of HIV tests done per eligibility criteria* for the NSW DBS Self-Sampling HIV and HCV Testing Pilot, November 2016 to July 2020

Target population	Q3 2020 (Jul - Sep) Total number of HIV tests n = 1,032	(Nov 2016 – Sep 2020) Total number of HIV tests n = 6,900
MSM ****	123 (12%)	1,768 (26%)
From high prevalence country***	104 (10%)	804 (12%)
Partners from Asia/Africa	118 (11%)	1,299 (19%)
Aboriginal people**	267 (26%)	1,799 (26%)
Ever injected drugs**	612 (59%)	3,343 (48%)

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.

***High prevalence countries include countries within Africa or Asia and the following specific countries: Belize, Haiti, Bahamas, Jamaica, Guyana, Barbados, Suriname, Djibouti, Russian Federation, Trinidad and Tobago and Panama.

**** MSM include trans-men who have sex with (cis- or trans-)men and cis-men who have sex with trans-men

Comment on Table 3

In July to September 2020:

- Of 1,032 HIV DBS tests, 123 (12%) were done by MSM.
    - Of these, 88 (72%) were Australian-born, and 35 (28%) were overseas-born MSM.
- 10% of HIV DBS tests were done by people from high prevalence countries.
- 11% of HIV DBS tests were done by people who had partners from Asia/Africa.
- 26% of HIV DBS tests were done by Aboriginal people.
- 59% of tests were done by people who had ever injected drugs.

In November 2016 to Sept 2020:

- Of 6,900 HIV DBS tests, 1,768 (26%) were done by MSM.
    - Of these, 1,255 (71%) were Australian-born MSM and 513 (29%) were overseas-born MSM.
- 12% of DBS tests were done by people from high prevalence countries.
- 19% of DBS tests were done by people who had partners from Asia/Africa.
- 26% of HIV DBS tests were done by Aboriginal people.
- 48% of tests were done by people who had ever injected drugs.

Table 4: HIV Registrations for the NSW DBS Self-Sampling HIV and HCV Testing Pilot per LHD of participant from November 2016 to September 2020, and number of HIV tests done (kits returned) in Q3 2020

LHD	Total number of DBS registrations (Nov 2016 – Sep 2020)	Number of DBS registrations in Q3 2020 (Jul - Sep)	Number of HIV DBS tests done in Q3 2020 (Jul -Sep)
Central Coast	111	4	2
Far West	58	2	3
Hunter New England	475	26	14
Illawarra Shoalhaven	367	128	119
Justice Health	2966	581	475
Mid North Coast	156	32	29
Murrumbidgee	148	5	2
Nepean Blue Mountains	203	28	23
Northern NSW	107	13	12
Northern Sydney	451	52	41
South Eastern Sydney*	1397	173	150
South Western Sydney	603	95	79
Southern NSW	81	8	6
Sydney	832	51	32
Western NSW	197	16	14
Western Sydney	386	33	31
Non-NSW	16	0	0

Data Source: NSW Dried Blood Spot Research database based on client postcode
*South Eastern Sydney LHD reporting no longer includes Justice Health data. Some registrations and tests are received after the data collection period.

Comment on Table 4:

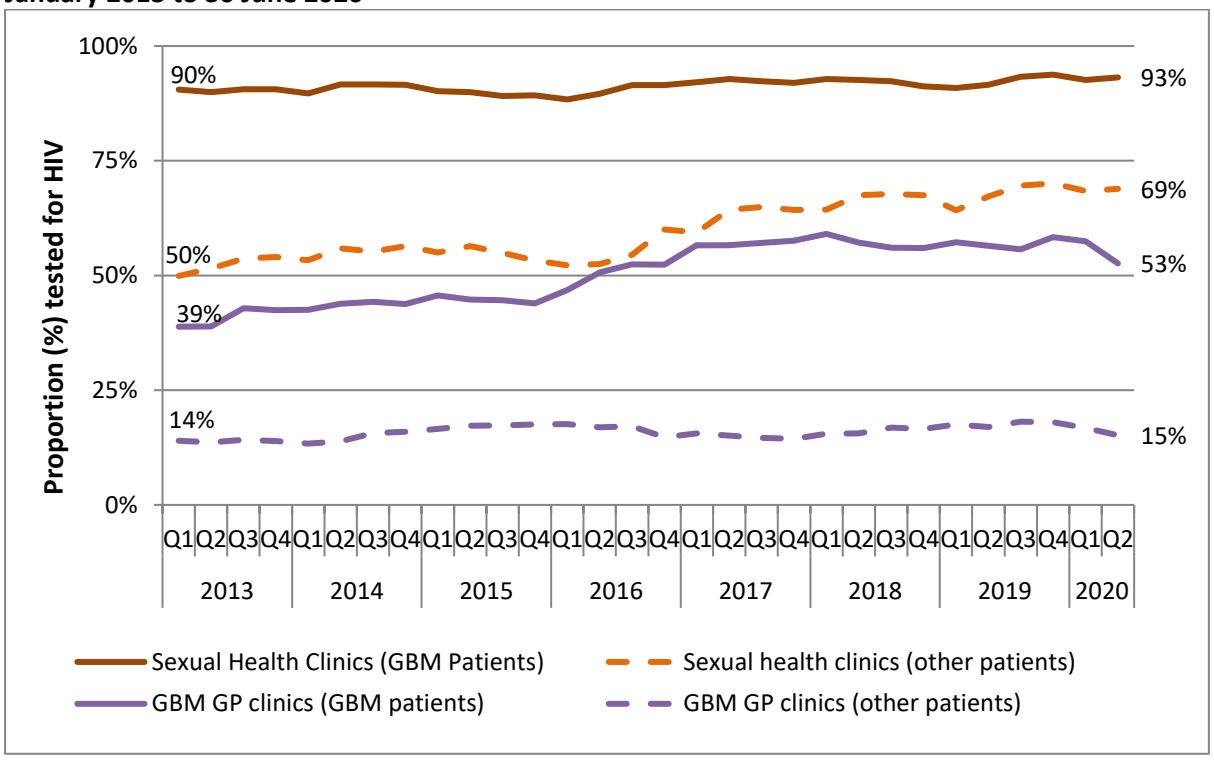
In July and September 2020:

- The highest number of HIV DBS tests were done by NSW residents in Justice Health, South East Sydney and Illawarra Shoalhaven; followed by South Western Sydney, Northern Sydney, Sydney and Western Sydney.

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[3] attending PFSHCs and GBM GP clinics[4] 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 2020[5]



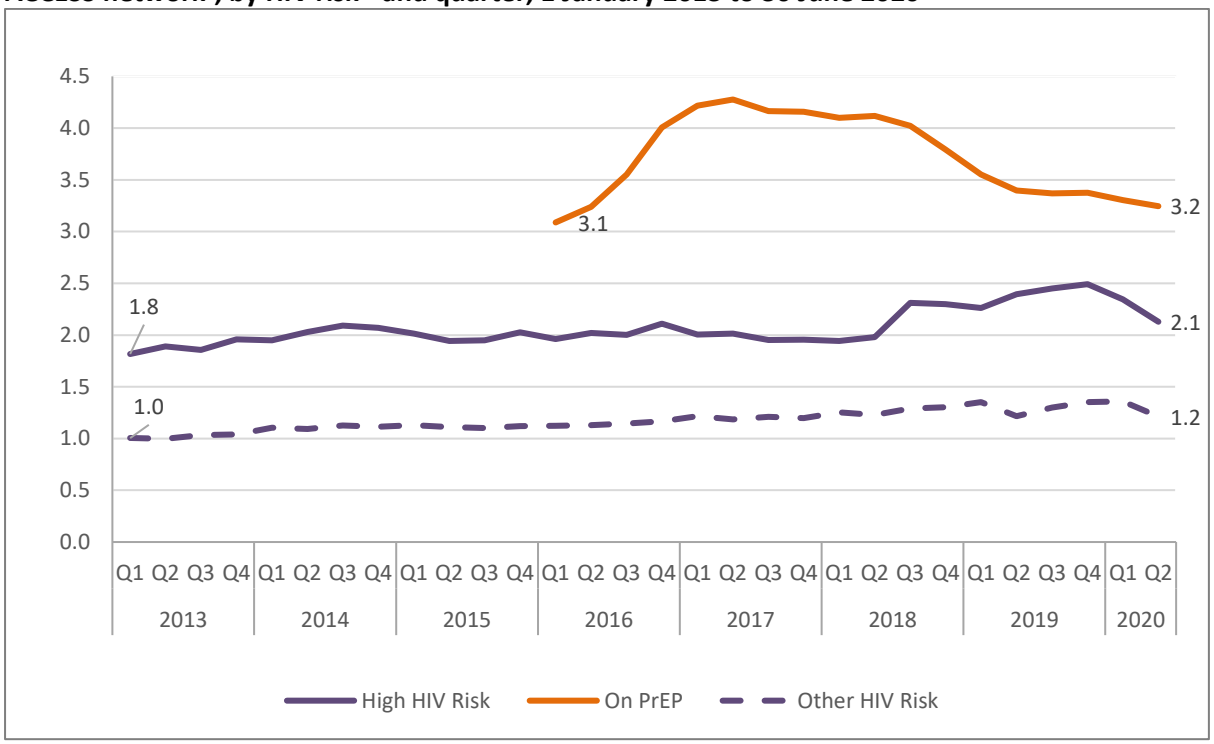
Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comments on Figure 20

- HIV testing uptake among GBM attending PFSHCs remained consistently high in the second quarter of 2020 (93%).
- Testing uptake increased over time among other patients attending PFSHCs, rising from 50% in Q1 of 2013 to 69% in Q2 of 2020.
- Testing uptake also increased among GBM attending GBM GP clinics (from 39% in Q1 of 2013 to 53% in Q2 of 2020).
- Testing amongst other patients attending GBM GP clinics stayed relatively consistent from 2013 to Q2 2020.

[3] Excludes patients known to be HIV positive
[4] GBM clinics defined as general practice clinics serving at least 50 GBM patients annually;
[5] 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[6] attending any clinic in the ACCESS network[7], by HIV risk[8] and quarter, 1 January 2013 to 30 June 2020



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

Comment on Figure 21

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, evidence of inconsistent condom use, 20 or more partners, or evidence of injecting drug use over the past 12 months
- Other risk: Any man not on PrEP not otherwise meeting the criteria of 'high risk'

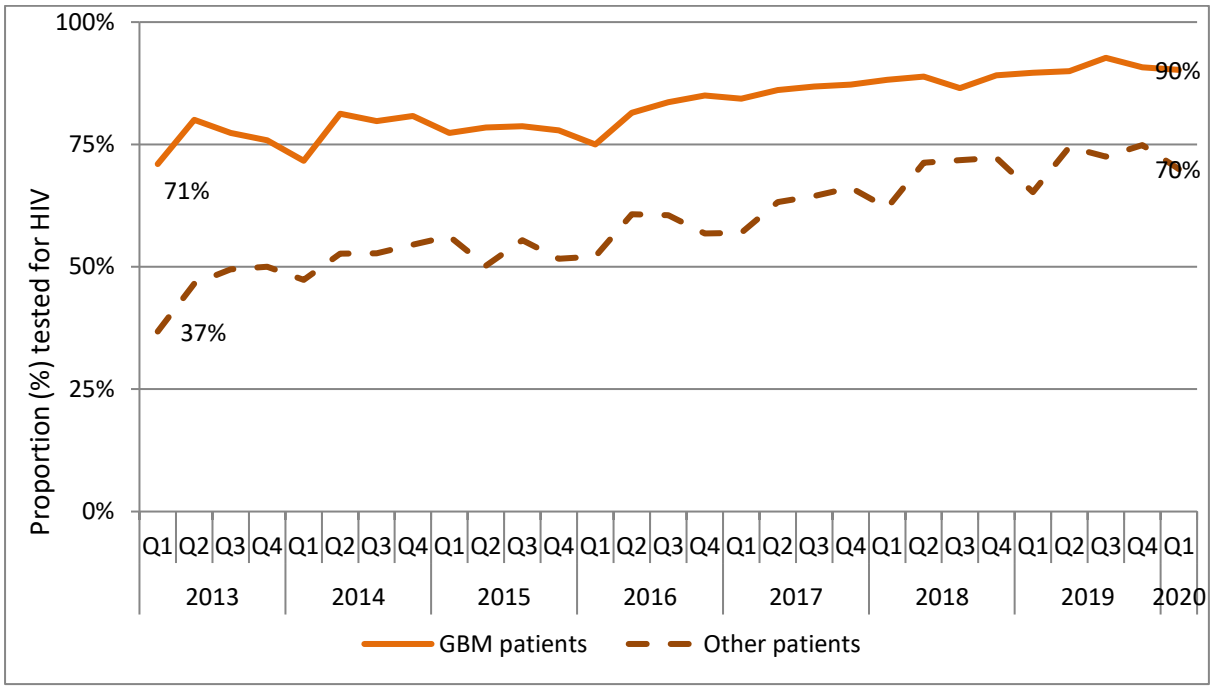
This change to the definition of 'high risk' means that the frequency of HIV testing among this group is lower than in previous reports because it excludes men accessing PrEP.

The average number of HIV tests among high risk GBM stayed fairly consistent from 2013-Q2 2018, followed by an increase to 2.5 tests on average at the end of Q4 2019. In this group, testing frequency decreased to 2.1 at the end of Q2 2020. Testing increased from 1.0 to 1.2 among men of other risk profiles from Q1 2013 to Q2 2020.

Men identified within ACCESS as having a reason for visit as "PrEP" and/or had evidence of a PrEP script were considered at 'other risk' for HIV.

[6]Excludes patients known to be HIV positive
[7] GBM clinics defined as general practice clinics serving at least 50 GBM patients annually
[8] 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[9] attending PFSHCs and GBM GP clinics[10] combined who received an HIV test at any clinic in the ACCESS network in conjunction with an STI diagnosis[11], by GBM status and quarter, 1 January 2013 to 31 March 2020



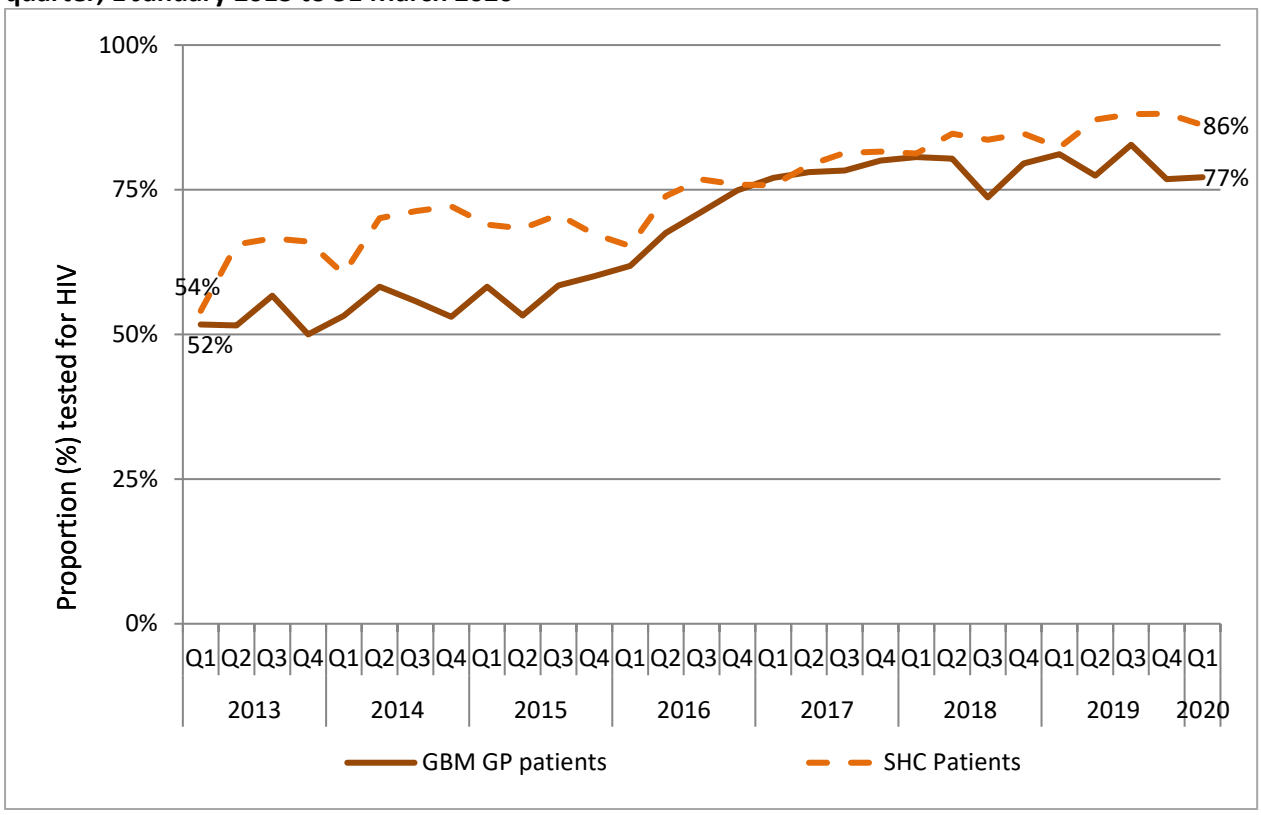
Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comment on Figure 22

- The proportion of GBM who received an HIV test in conjunction with an STI diagnosis increased over time from 71% in early 2013 to 90% in Q1 of 2020.
- Testing in conjunction with STI diagnoses was less common overall among other patients but also increased during this period (37% to 70%).

[9] Excludes patients known to be HIV positive
[10] GBM GP clinics defined as general practice clinics serving at least 50 GBM patients annually
[11] 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[12] attending PFSHCs and GBM GP clinics[13] who received an HIV test at any clinic in the ACCESS network in conjunction with an STI diagnosis[14], by service type and quarter, 1 January 2013 to 31 March 2020



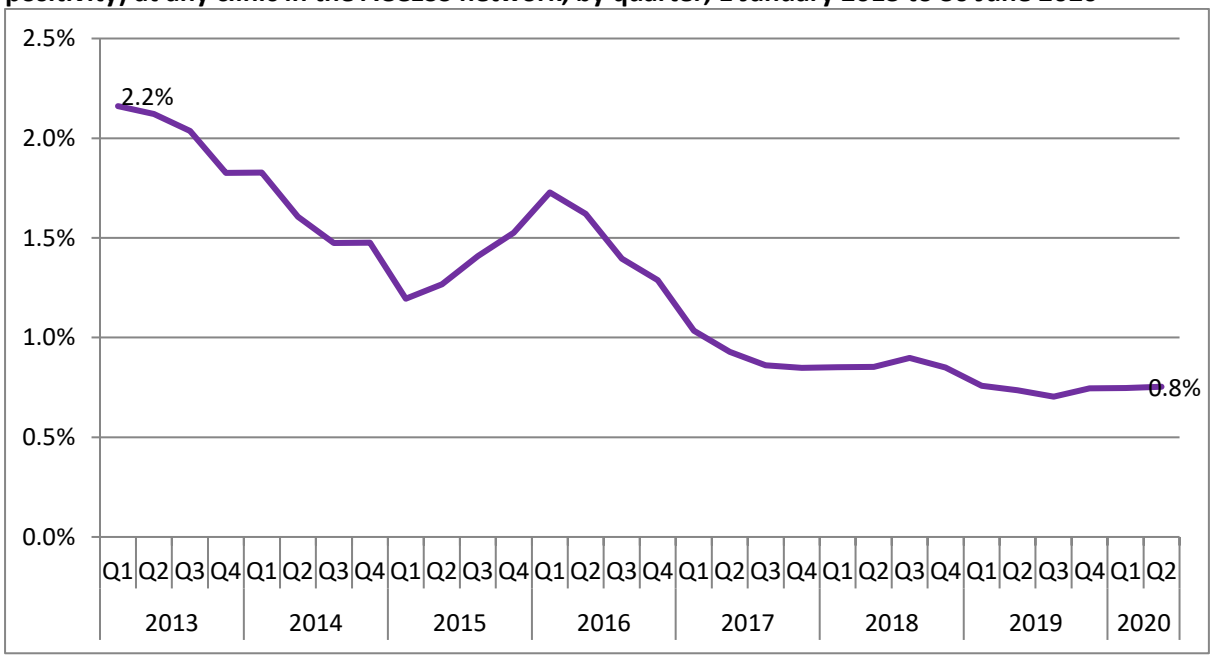
Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comment on Figure 23

- Testing in conjunction with STI diagnosis was highest in PFSHCs, increasing from 54% in Q1 2013 to 86% at the end of Q2 2020.
- GBM GP clinics also saw an increase in the proportion of patients tested from 52% in Q1 of 2013 to 77% at the end of Q2 2020.

[12] Excludes patients known to be HIV positive
[13] GBM clinics defined as general practice clinics serving at least 50 GBM patients annually
[14] 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 patients15 tested for HIV with a positive result (HIV positivity) at any clinic in the ACCESS network, by quarter, 1 January 2013 to 30 June 2020



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 2.2% of Q1 2013 to 0.8% in Q2 2020.

[15] Excludes patients known to be HIV positive

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, 2016 to 2020

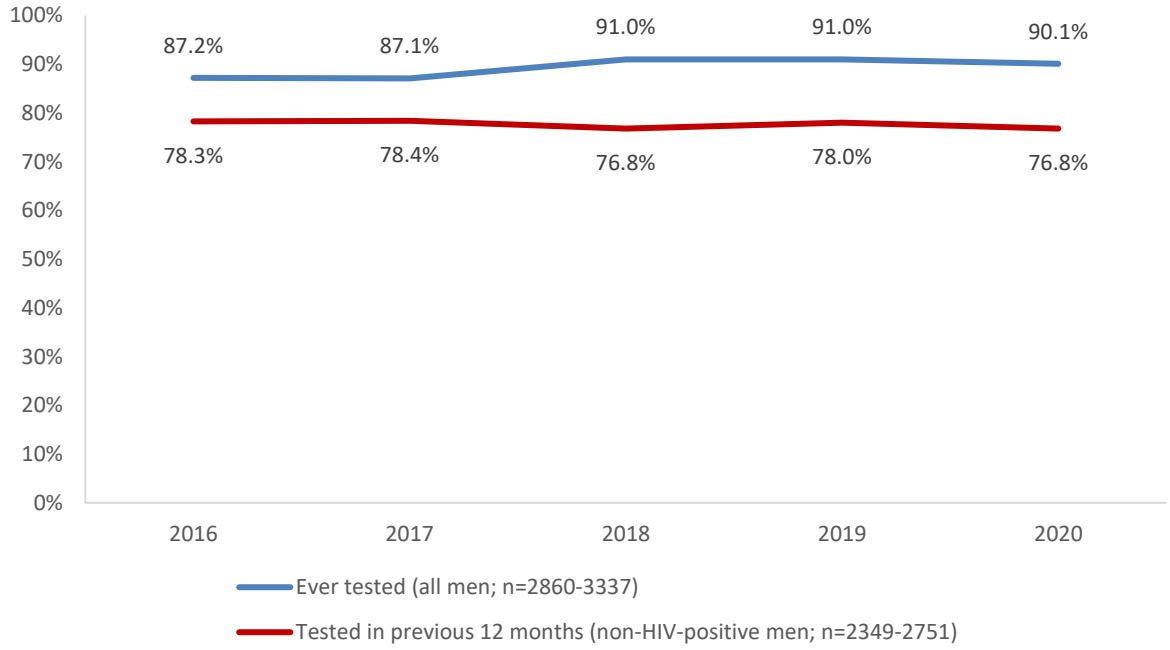
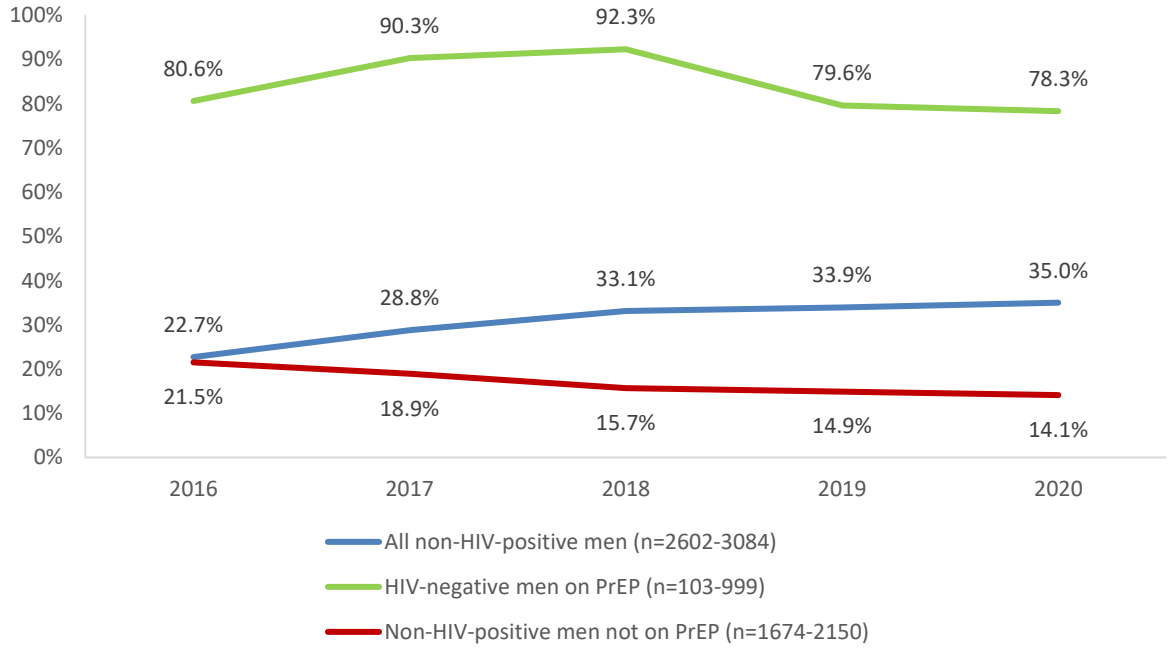


Figure 26: Non-HIV-positive gay and bisexual men reporting three or more HIV tests in the previous 12 months, stratified by PrEP use; Sydney Gay Community Periodic Survey, 2016 to 2020



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 ~77% of gay men, respectively, during 2016-20.

- Higher frequency testing (three or more HIV tests per year) has increased among all non-HIV-positive men, from 22.7% in 2016 to 35.0% in 2020.

- Stratifying higher frequency testing by PrEP use shows that it is far more common among HIV-negative men on PrEP, and has decreased recently from 80.6% in 2016 to 78.3% in 2020. Higher frequency testing has become less common among non-HIV-positive men not on PrEP (from 21.5% in 2016 to 14.1% in 2020).

- SGCPS data were collected in February 2020, before any social distancing came into place under the COVID-19 pandemic.

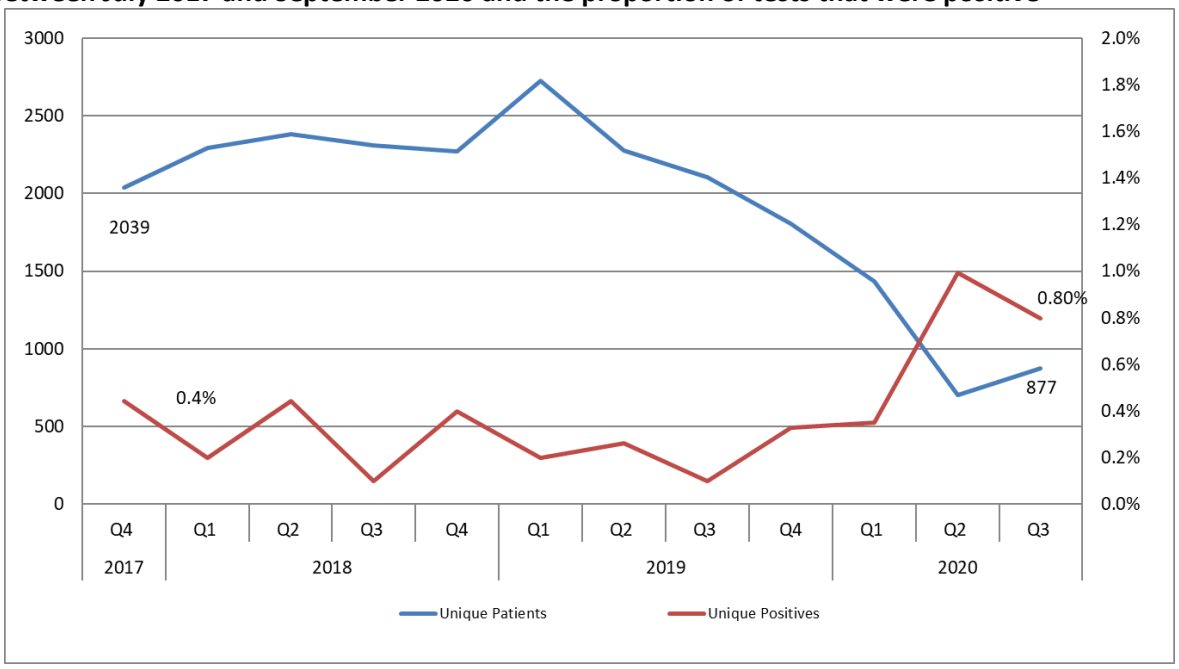
3.3 How is testing being made more accessible?

Table 5: Number of rapid HIV tests in community based sites and proportion of clients with high risk behaviour and infrequent testing history in Jul-Sep 2020

Non-traditional Settings	Number of RHT	Number of HIV antibody tests	% Unique Positive	% never previously tested	% tested more than 12 months ago#	*% with > 5 sexual partners in last 3 months**
Community-based						
aTEST Surry Hills	Not operating due to COVID-19					
aTEST Oxford ST	867	1345	0.52%	8.30%	17.19%	16.86%
aTEST Kings Cross	10	0	0.00%	0.00%	0.00%	50.00%
aTEST Newtown	Not operating due to COVID-19					

Data sources: NSW Health HIV Strategy Monitoring Database[17]
Note: In Jul-Sep 2020, aTest Surry Hills was not operating due to COVID-19. The total number of unique patients at aTest Oxford St is 1,409. Some patients at this site have an HIV antibody test without a rapid test, which accounts for the additional HIV antibody tests above.
Note: Unique positive is for HIV antibody tests, and incorporates positive results for HIV tests done without a rapid test at Oxford St aTest sites.
Note: Clients' risk behaviour and infrequent testing history is calculated by: total occasions of service at Oxford St (n=1,489); and patients having a rapid test attending Kings Cross and Newtown.
#Does not include 'never tested'; *Only patients who provide information on this characteristic is included.

Figure 27: The number of unique patients who had a rapid HIV test at a community based site between July 2017 and September 2020 and the proportion of tests that were positive



Data sources: NSW Health HIV Strategy Monitoring Database[16]
Note: Positivity is based on the result of the confirmatory HIV antibody test for rapid tests; and incorporates positive results for HIV tests done without a rapid test at Oxford St aTest site.
Note: aTest data was not reported by Surry Hills and Newtown sites in Q3 because they were not operating due to COVID-19

Comments on Table 6 and Figure 27

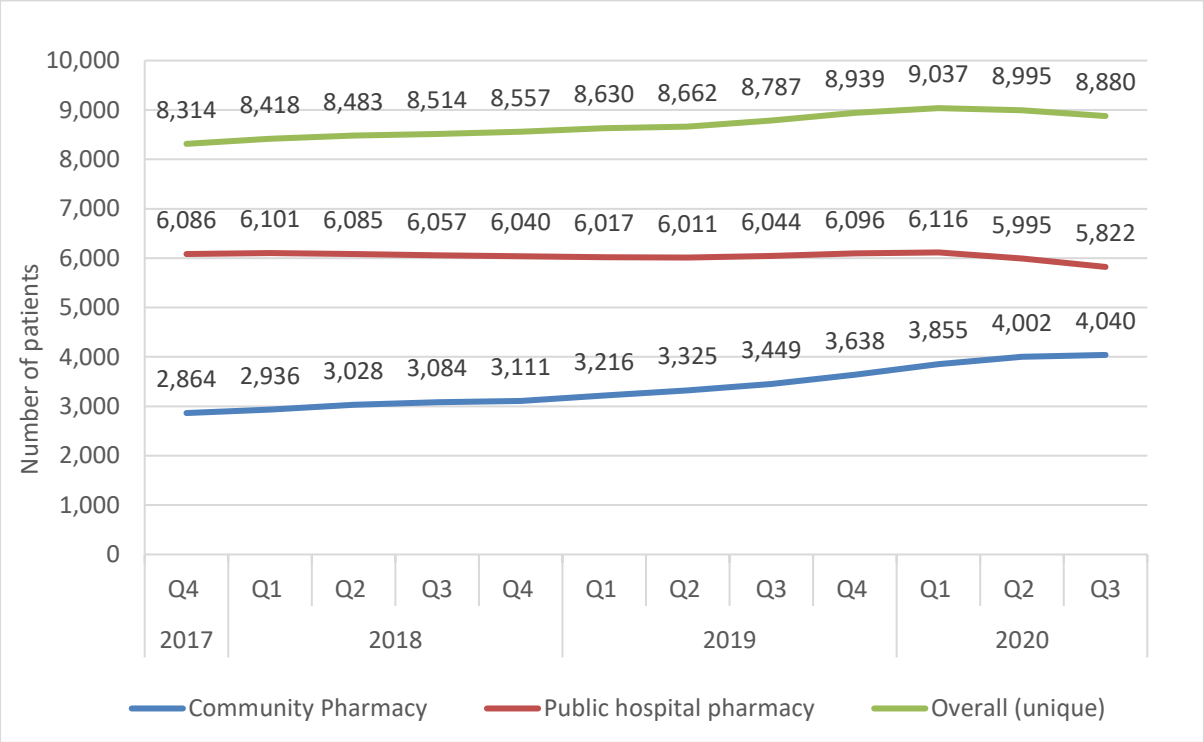
- NSW data suggests community-based testing sites are an effective testing model for engaging GBM with high risk behaviour and infrequent testing history. Rapid HIV testing has been effectively embedded into the mix of the testing options in NSW.

[16] 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 October 2017 to 30 September 2020

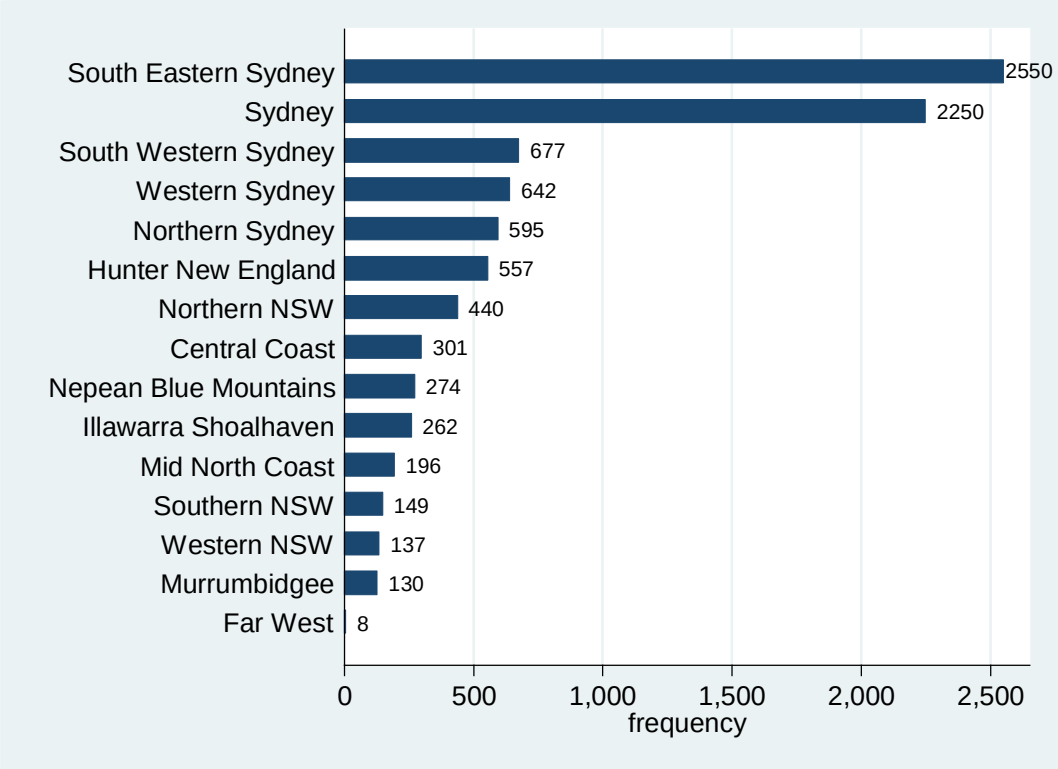


Data source: PBS Highly Specialised Drugs Programme data from 1 October 2017 to 30 September 2020 prepared for NSW Health. Note: The number of patients dispensed via community and public hospital pharmacies may add to a figure greater than the overall unique patients as some patients receive treatment 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 October 2017 and 30 September 2020, a total of 8,880 (unique number) NSW residents were dispensed ART for HIV at least once within the previous 12 months. About half (50.0%) of ART treatment for HIV were dispensed by GP.
- Of the 8,880 residents dispensed ART, 91% were male. The majority (55%) were 50 years or older, 25% were aged 40-49 years, and about 20% aged 39 years or younger.

Figure 29: The number of NSW residents dispensed ART for HIV, by the LHD of patient residence, from 1 October 2019 to 30 September 2020[17]



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data from 1 October 2019 to 30 September 2020

Comments on Figure 29

- More than three-quarters (79%) of the ART dispensed in the 12 months ending 30 September 2020 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.

[17] The sum of the numbers displayed in the graph is higher than the total of 8,880 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 October 2019 and September 2020 is summarised at Table 6[18].

Table 6: Clients who received HIV care in NSW public sexual health and HIV services from 1 October and 30 September 2020

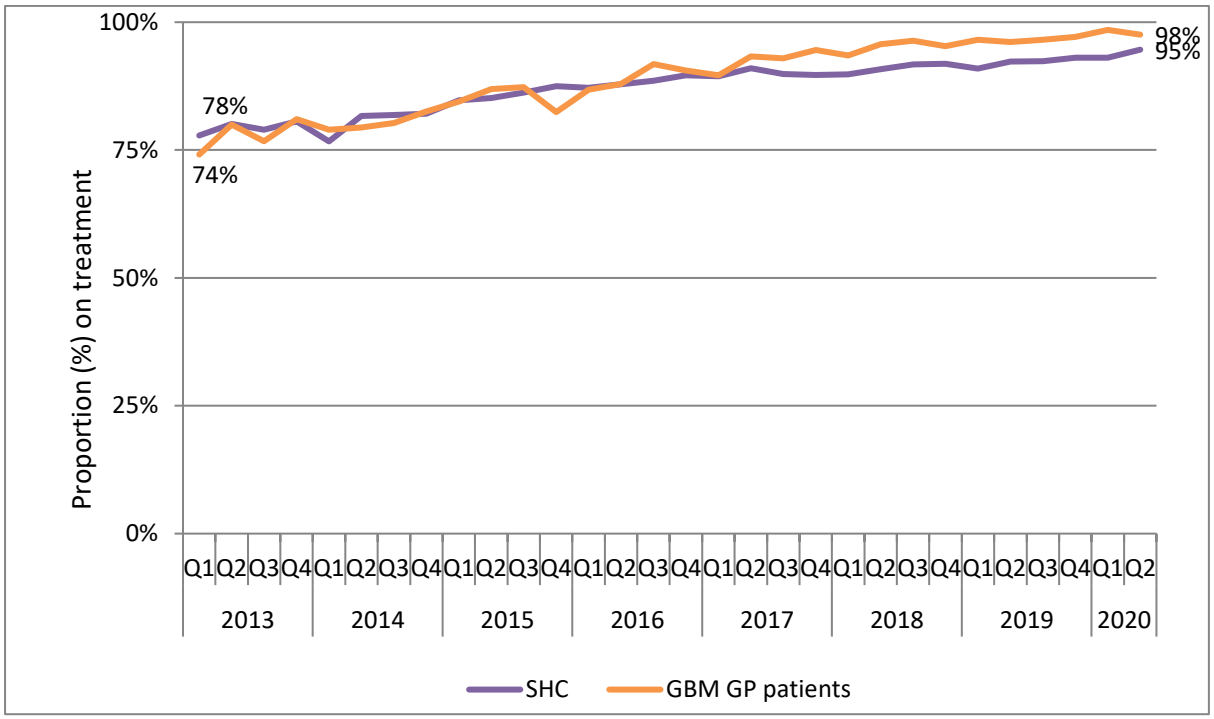
Number (%) of patients for whom treatment information was available	5,870
Number (%) on ART	5,807 (99%)

Data sources: NSW Health HIV Strategy Monitoring Database[19]
Note: Data presents here does not include Central Coast LHD.

Comment on Table 6

- Between October 2019 to September 2020, treatment information was available for 5,870 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 99%.

Figure 30 Proportion of HIV positive patients[20] attending any clinic in the ACCESS network[21] who received antiretroviral 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 2020



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

[18] 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.

[19] Public sexual health and HIV services data provided by Local Health Districts for the purpose of monitoring the implementation of the NSW HIV Strategy.

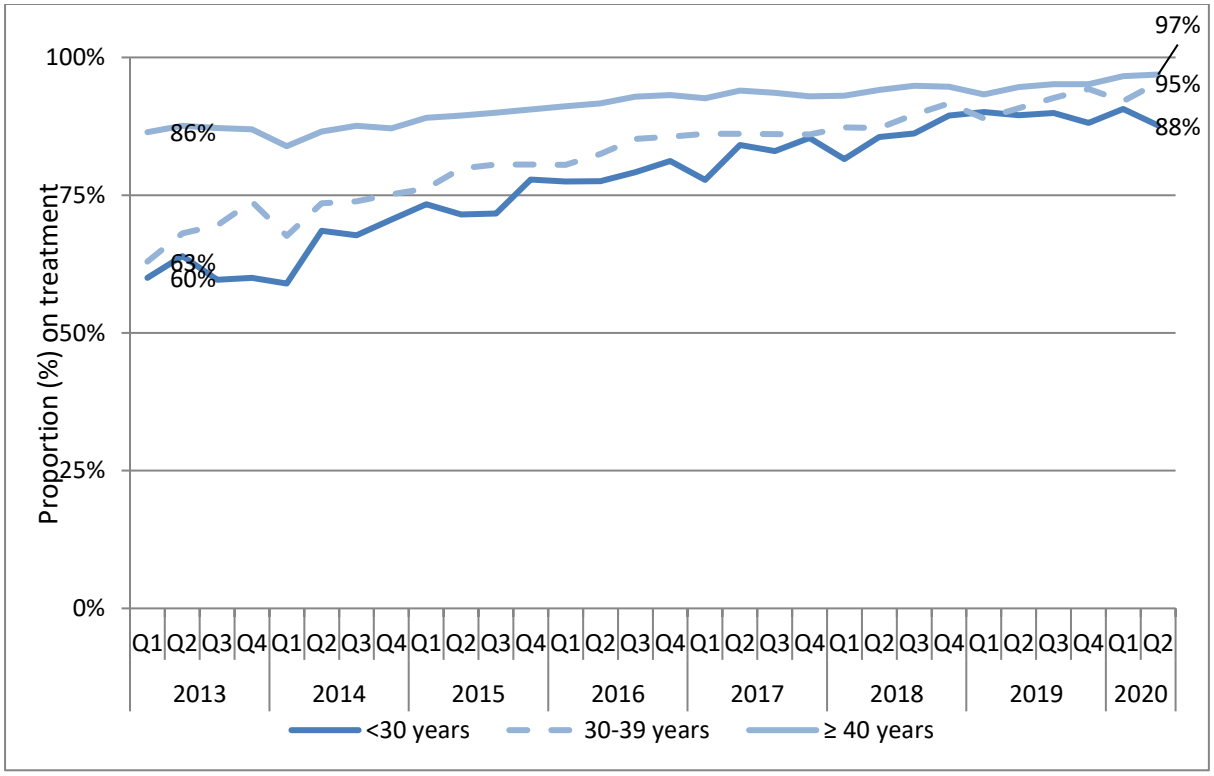
[20] Excludes patients for whom HIV care was recorded as managed elsewhere

[21] GBM clinics defined as general practice clinics serving at least 50 GBM patients annually
Hospital data were not included in analysis

Comments on Figure 30

- Over time, treatment uptake for people living with HIV increased across service types. Treatment uptake increased by 26% and 28% from Q1 2013 to Q2 2020 in PFSHCs and GBM GP clinics respectively.

Figure 31: Proportion of HIV positive patients attending any clinic in the ACCESS network [22] who received antiretroviral 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 2020



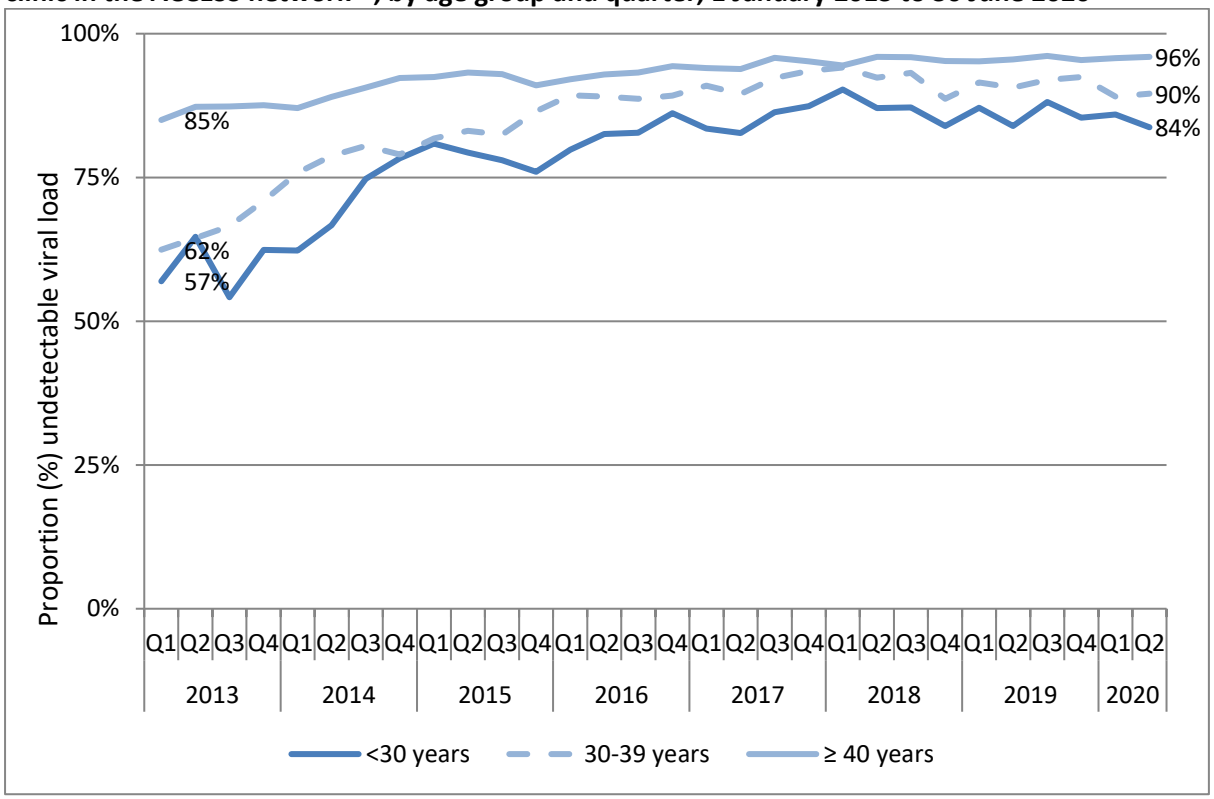
Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

Comments 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 2020.

[22] 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[23] with an 'undetectable'[24] viral load at their most recent test in the previous 12-month period at any clinic in the ACCESS network[25], by age group and quarter, 1 January 2013 to 30 June 2020



Comments on Figure 32

- The proportion of HIV positive patients with an undetectable viral load was consistently highest among older patients: 96% of patients 40 years and older had undetectable viral loads in Q2 of 2020. Overall, the proportion of patients with an undetectable viral load decreased from 2013-Q2 2020.

[23] GBM clinics defined as general practice clinics serving at least 50 GBM patients annually

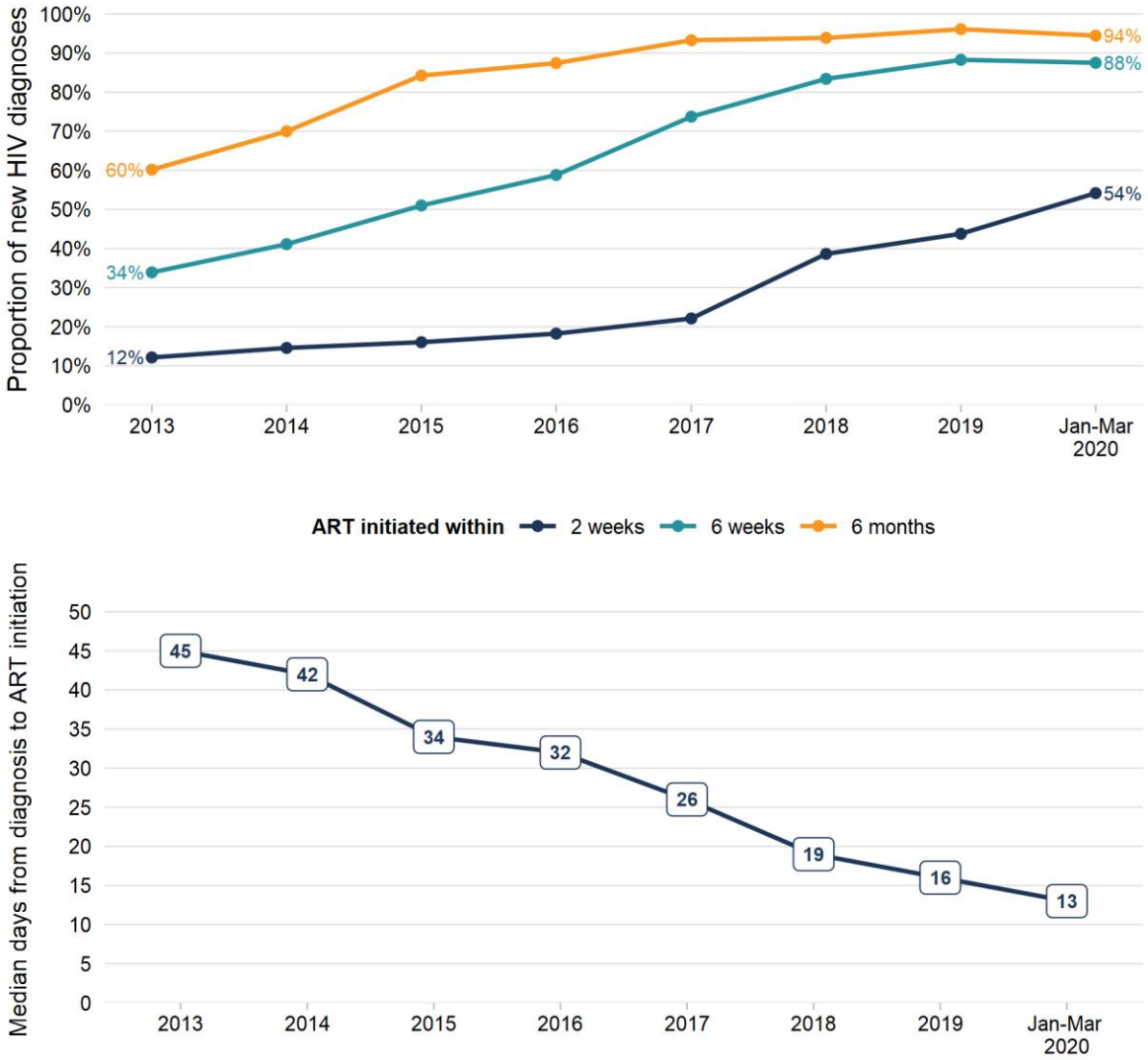
[24] 'Undetectable' defined as <200 RNA copies/mm^3 of blood

[25] 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. Data on ART initiation was drawn from the six month follow up and initial HIV notification form. At the time of preparing this Q3 2020 report, the six-month post diagnosis follow up had been done on NSW residents newly diagnosed from 1 January 2013 to 31 March 2020 (n=2306). All new diagnoses were included irrespective of whether eligible for follow up and of care outcome.

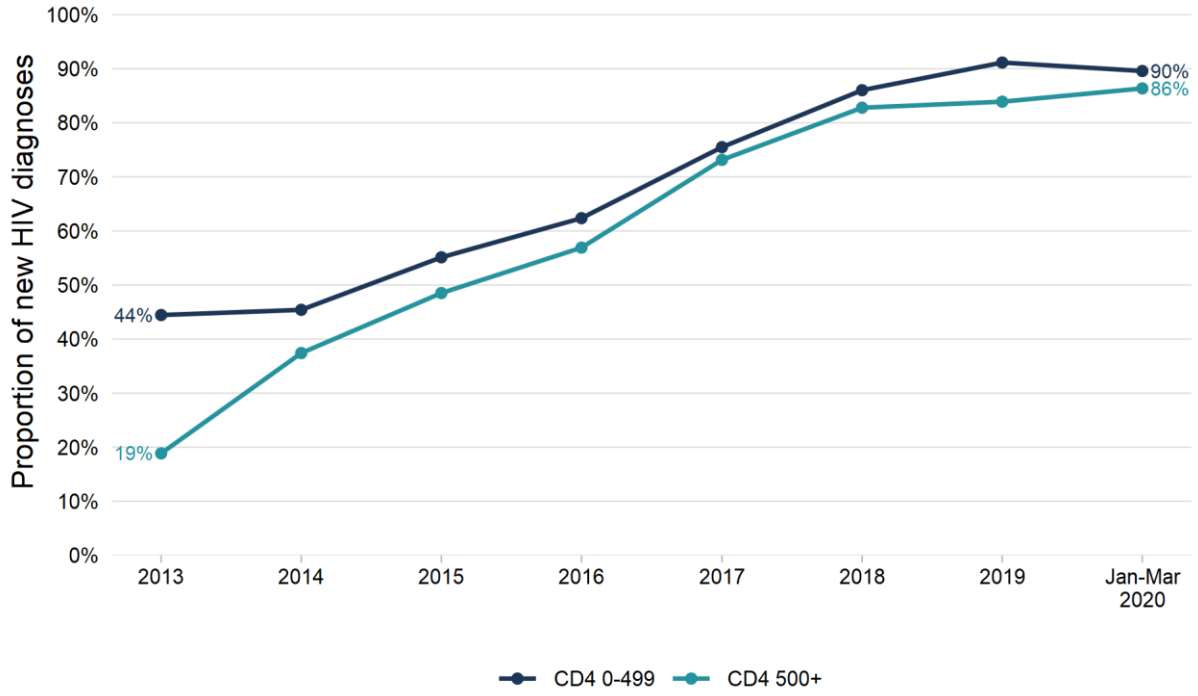
Figure 33: Time to ART for NSW residents newly diagnosed in January 2013 to March 2020



Comment on Figure 33

- Of the 72 people newly diagnosed during January to March 2020 and followed up six months post diagnosis, 54% initiated ART within two weeks, 88% within six weeks and 94% within six months of diagnosis. The median time to ART initiation was 13 days. Of the 68 on ART within six months of diagnosis, 64 (94%) 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 March 2020 and % on ART within six weeks of diagnosis



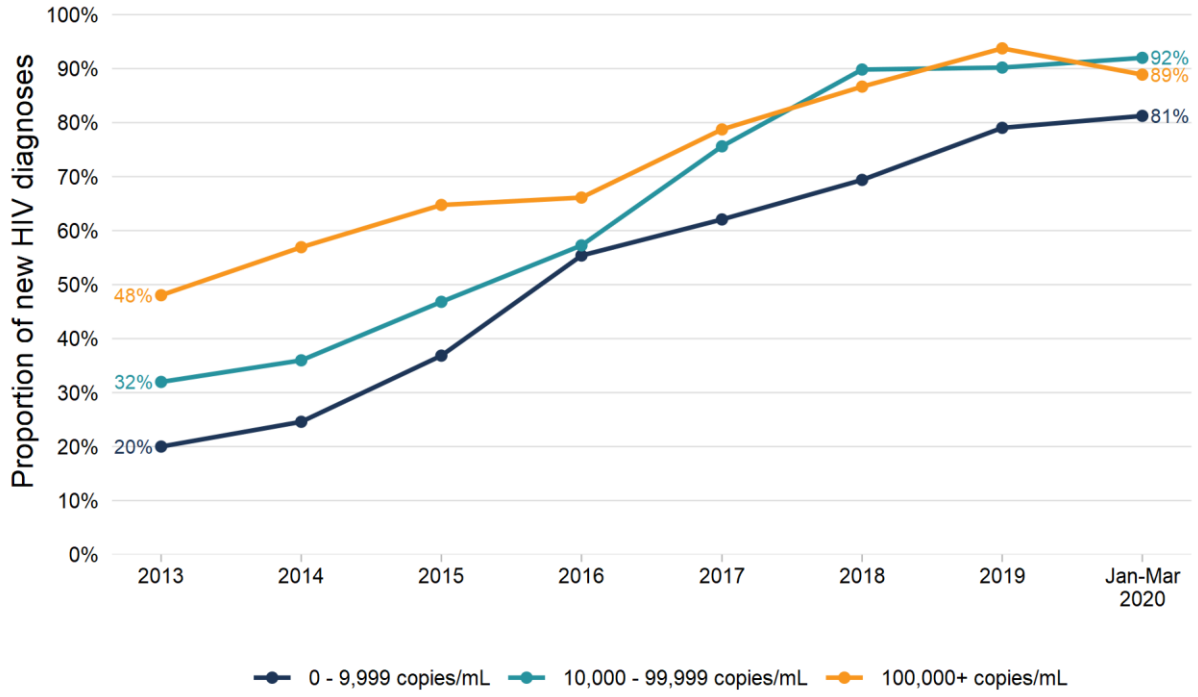
Note: excludes 56 new diagnoses with missing CD4 at diagnosis, some of whom had commenced ART within 6 months.

Comments on Figure 34

- The proportion of people newly diagnosed with a CD4 count of 0-499 cells/µL 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, 86% of the 2018, 91% of the 2019 and 90% of the Jan-Mar 2020 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, 37% of the 2014, 49% of the 2015, 57% of the 2016, 73% of the 2017, 83% of the 2018, 84% of the 2019 and 86% of the Jan-Mar 2020 new diagnoses.

Figure 35: HIV viral load at diagnosis of NSW residents notified with newly diagnosed HIV infection from January 2013 to March 2020 and % on ART within six weeks of diagnosis



Note: excludes 61 new diagnoses with missing HIV VL at diagnosis, some of whom had commenced ART within 6 months.

Comments on Figure 35

- Of people with a HIV VL of 0-9,999 copies/mL, 20% of the 2013, 25% of the 2014, 37% of the 2015, 55% of the 2016, 62% of the 2017, 69% of the 2018, 79% of the 2019 and 81% of the Jan-Mar 2020 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, 57% of the 2016, 76% of the 2017, 90% of the 2018, 90% of the 2019 and 92% of the Jan-Mar 2020 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, 87% of the 2018, 94% of the 2019 and 89% of the Jan-Mar 2020 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: http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx

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: http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx

6. Appendix B: Characteristics of NSW residents notified with newly diagnosed HIV infection 1981 to September 2020 (continues over page); data extracted from NCIMS, HPNSW, as of 9 November 2020.

Case characteristics	2010 N (%)	2011 N (%)	2012 N (%)	2013 N (%)	2014 N (%)	2015 N (%)	2016 N (%)	2017 N (%)	2018 N (%)	2019 N (%)	Jan-Sep 2020 N (%)	1981-Sep 2020 N (%)
Total (ALL)	**306**	**333**	**413**	**354**	**343**	**349**	**318**	**312**	**277**	**281**	**155**	**18987**
Gender												
Male	280 (91.5%)	312 (93.7%)	376 (91.0%)	324 (91.5%)	317 (92.4%)	320 (91.7%)	292 (91.8%)	282 (90.4%)	254 (91.7%)	252 (89.7%)	140 (90.3%)	17446 (91.9%)
Female	24 (7.8%)	21 (6.3%)	36 (8.7%)	27 (7.6%)	25 (7.3%)	28 (8.0%)	22 (6.9%)	24 (7.7%)	20 (7.2%)	23 (8.2%)	13 (8.4%)	1233 (6.5%)
Transgender	2 (0.7%)	0 (0.0%)	1 (0.2%)	3 (0.8%)	1 (0.3%)	1 (0.3%)	4 (1.3%)	6 (1.9%)	3 (1.1%)	6 (2.1%)	2 (1.3%)	60 (0.3%)
Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	248 (1.3%)
Aboriginal or Torres Strait Islander person status												
Aboriginal person	7 (2.3%)	5 (1.5%)	13 (3.1%)	8 (2.3%)	7 (2.0%)	7 (2.0%)	9 (2.8%)	8 (2.6%)	11 (4.0%)	6 (2.1%)	3 (1.9%)	219 (1.2%)
Torres Strait Islander	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)	2 (0.0%)
Non-Aboriginal person	294 (96.1%)	325 (97.6%)	394 (95.4%)	344 (97.2%)	331 (96.5%)	339 (97.1%)	308 (96.9%)	304 (97.4%)	266 (96.0%)	274 (97.5%)	151 (97.4%)	11884 (62.6%)
Not stated	5 (1.6%)	3 (0.9%)	6 (1.5%)	2 (0.6%)	5 (1.5%)	3 (0.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)	6882 (36.2%)
Age in years at diagnosis												
0-4	2 (0.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	40 (0.2%)
5-9	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	25 (0.1%)
10-14	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	36 (0.2%)
15-19	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%)	4 (1.4%)	3 (1.9%)	329 (1.7%)
20-24	29 (9.5%)	35 (10.5%)	44 (10.7%)	37 (10.5%)	41 (12.0%)	45 (12.9%)	39 (12.3%)	29 (9.3%)	36 (13.0%)	29 (10.3%)	12 (7.7%)	2292 (12.1%)
25-29	56 (18.3%)	55 (16.5%)	78 (18.9%)	65 (18.4%)	51 (14.9%)	63 (18.1%)	61 (19.2%)	58 (18.6%)	60 (21.7%)	43 (15.3%)	35 (22.6%)	3737 (19.7%)
30-34	49 (16.0%)	65 (19.5%)	71 (17.2%)	48 (13.6%)	64 (18.7%)	62 (17.8%)	63 (19.8%)	57 (18.3%)	50 (18.1%)	67 (23.8%)	34 (21.9%)	3784 (19.9%)
35-39	43 (14.1%)	59 (17.7%)	64 (15.5%)	42 (11.9%)	45 (13.1%)	45 (12.9%)	48 (15.1%)	36 (11.5%)	29 (10.5%)	41 (14.6%)	15 (9.7%)	3101 (16.3%)
40-44	51 (16.7%)	46 (13.8%)	47 (11.4%)	45 (12.7%)	45 (13.1%)	32 (9.2%)	30 (9.4%)	38 (12.2%)	27 (9.7%)	30 (10.7%)	16 (10.3%)	2288 (12.1%)
45-49	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%)	19 (6.8%)	13 (8.4%)	1375 (7.2%)
50-54	7 (2.3%)	25 (7.5%)	28 (6.8%)	24 (6.8%)	25 (7.3%)	28 (8.0%)	18 (5.7%)	19 (6.1%)	18 (6.5%)	19 (6.8%)	14 (9.0%)	863 (4.5%)
55-59	22 (7.2%)	10 (3.0%)	14 (3.4%)	22 (6.2%)	15 (4.4%)	13 (3.7%)	13 (4.1%)	16 (5.1%)	15 (5.4%)	13 (4.6%)	5 (3.2%)	500 (2.6%)
60-64	5 (1.6%)	2 (0.6%)	13 (3.1%)	6 (1.7%)	14 (4.1%)	15 (4.3%)	6 (1.9%)	17 (5.4%)	7 (2.5%)	4 (1.4%)	4 (2.6%)	274 (1.4%)
65-69	6 (2.0%)	2 (0.6%)	4 (1.0%)	9 (2.5%)	7 (2.0%)	7 (2.0%)	4 (1.3%)	5 (1.6%)	4 (1.4%)	7 (2.5%)	4 (2.6%)	155 (0.8%)
70 or over	1 (0.3%)	2 (0.6%)	3 (0.7%)	2 (0.6%)	3 (0.9%)	6 (1.7%)	0 (0.0%)	10 (3.2%)	4 (1.4%)	5 (1.8%)	0 (0.0%)	100 (0.5%)
Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (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 (%)	2019 N (%)	Jan-Sep 2020 N (%)	1981-Sep 2020 N (%)
Total (ALL)	**306**	**333**	**413**	**354**	**343**	**349**	**318**	**312**	**277**	**281**	**155**	**18987**
Reported HIV risk exposure												
MSM	226 (73.9%)	270 (81.1%)	322 (78.0%)	265 (74.9%)	254 (74.1%)	264 (75.6%)	237 (74.5%)	215 (68.9%)	194 (70.0%)	189 (67.3%)	101 (65.2%)	12049 (63.5%)
MSM who injects drugs	8 (2.6%)	11 (3.3%)	15 (3.6%)	16 (4.5%)	20 (5.8%)	21 (6.0%)	25 (7.9%)	17 (5.4%)	25 (9.0%)	25 (8.9%)	18 (11.6%)	638 (3.4%)
HET	50 (16.3%)	41 (12.3%)	58 (14.0%)	61 (17.2%)	50 (14.6%)	52 (14.9%)	48 (15.1%)	68 (21.8%)	51 (18.4%)	56 (19.9%)	31 (20.0%)	1857 (9.8%)
PWID	10 (3.3%)	8 (2.4%)	9 (2.2%)	7 (2.0%)	8 (2.3%)	4 (1.1%)	4 (1.3%)	6 (1.9%)	4 (1.4%)	6 (2.1%)	1 (0.6%)	585 (3.1%)
Blood disorder, blood or tissue recipient	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)	278 (1.5%)
Vertical transmission	2 (0.7%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0%)	1 (0.3%)	2 (0.6%)	0 (0.0%)	0 (0.0%)	1 (0.6%)	55 (0.3%)
Other	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%)	3 (1.1%)	0 (0.0%)	54 (0.3%)
Unknown	9 (2.9%)	2 (0.6%)	7 (1.7%)	3 (0.8%)	6 (1.7%)	4 (1.1%)	2 (0.6%)	3 (1.0%)	2 (0.7%)	2 (0.7%)	2 (1.3%)	3471 (18.3%)
LHD of residence												
South Eastern Sydney	109 (35.6%)	124 (37.2%)	150 (36.3%)	126 (35.6%)	112 (32.7%)	129 (37.0%)	84 (26.4%)	92 (29.5%)	85 (30.7%)	73 (26.0%)	38 (24.5%)	5883 (31.0%)
Sydney	78 (25.5%)	89 (26.7%)	113 (27.4%)	91 (25.7%)	84 (24.5%)	86 (24.6%)	95 (29.9%)	71 (22.8%)	63 (22.7%)	61 (21.7%)	29 (18.7%)	3293 (17.3%)
Northern Sydney	19 (6.2%)	24 (7.2%)	23 (5.6%)	25 (7.1%)	17 (5.0%)	24 (6.9%)	20 (6.3%)	29 (9.3%)	23 (8.3%)	23 (8.2%)	13 (8.4%)	1088 (5.7%)
Western Sydney	20 (6.5%)	31 (9.3%)	25 (6.1%)	27 (7.6%)	26 (7.6%)	20 (5.7%)	24 (7.5%)	29 (9.3%)	24 (8.7%)	30 (10.7%)	17 (11.0%)	848 (4.5%)
South Western Sydney	23 (7.5%)	18 (5.4%)	30 (7.3%)	29 (8.2%)	30 (8.7%)	31 (8.9%)	31 (9.7%)	25 (8.0%)	21 (7.6%)	34 (12.1%)	20 (12.9%)	787 (4.1%)
Hunter New England	16 (5.2%)	11 (3.3%)	14 (3.4%)	17 (4.8%)	27 (7.9%)	17 (4.9%)	15 (4.7%)	7 (2.2%)	17 (6.1%)	23 (8.2%)	16 (10.3%)	565 (3.0%)
Nepean Blue Mountains	3 (1.0%)	4 (1.2%)	5 (1.2%)	3 (0.8%)	6 (1.7%)	6 (1.7%)	2 (0.6%)	6 (1.9%)	5 (1.8%)	4 (1.4%)	2 (1.3%)	279 (1.5%)
Illawarra Shoalhaven	8 (2.6%)	5 (1.5%)	9 (2.2%)	7 (2.0%)	6 (1.7%)	7 (2.0%)	8 (2.5%)	10 (3.2%)	7 (2.5%)	6 (2.1%)	4 (2.6%)	259 (1.4%)
Northern NSW	8 (2.6%)	11 (3.3%)	5 (1.2%)	5 (1.4%)	7 (2.0%)	8 (2.3%)	5 (1.6%)	10 (3.2%)	9 (3.2%)	10 (3.6%)	2 (1.3%)	237 (1.2%)
Central Coast	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 (0.7%)	5 (3.2%)	231 (1.2%)
Mid North Coast	3 (1.0%)	4 (1.2%)	3 (0.7%)	6 (1.7%)	7 (2.0%)	6 (1.7%)	2 (0.6%)	4 (1.3%)	3 (1.1%)	2 (0.7%)	1 (0.6%)	158 (0.8%)
Western NSW	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%)	3 (1.1%)	3 (1.9%)	139 (0.7%)
Murrumbidgee-Albury	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%)	2 (0.7%)	3 (1.9%)	114 (0.6%)
Southern NSW	1 (0.3%)	2 (0.6%)	8 (1.9%)	4 (1.1%)	4 (1.2%)	2 (0.6%)	6 (1.9%)	3 (1.0%)	3 (1.1%)	2 (0.7%)	0 (0.0%)	75 (0.4%)
Far West	0 (0.0%)	0 (0.0%)	2 (0.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.4%)	2 (0.7%)	0 (0.0%)	11 (0.1%)
Unknown or other	1 (0.3%)	1 (0.3%)	4 (1.0%)	1 (0.3%)	4 (1.2%)	2 (0.6%)	1 (0.3%)	3 (1.0%)	4 (1.4%)	4 (1.4%)	2 (1.3%)	5020 (26.4%)

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 signif-icantly 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

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.

9. Appendix E: NSW HIV Data Advisory Group members

Kerry Chant	Advisory Group Chair, Chief Health Officer and Deputy Secretary, Population and Public Health, NSW Ministry of Health
Meredith Claremont	Centre for Population Health, NSW Ministry of Health
Carolyn Murray	Centre for Population Health, NSW Ministry of Health
Matthew Craig	Centre for Population Health, NSW Ministry of Health
Cherie Power	Centre for Population Health, NSW Ministry of Health
Shawn Clackett	Centre for Population Health, NSW Ministry of Health
Yanni Sun	Centre for Population Health, NSW Ministry of Health
Jeremy McAnulty	Health Protection NSW, NSW Health
Christine Selvey	Health Protection NSW, NSW Health
Steven Nigro	Health Protection NSW, NSW Health
Christopher Bourne	STIPU, Centre for Population Health, NSW Ministry of Health
Bill Whittaker	HIV policy and strategy advisor
Andrew Grulich	The Kirby Institute, University of NSW
Rebecca Guy	The Kirby Institute, University of NSW
Phillip Keen	The Kirby Institute, University of NSW
Prital Patel	The Kirby Institute, University of NSW
Benjamin Bavinton	The Kirby Institute, University of NSW
Garrett Prestage	The Kirby Institute, University of NSW
Martin Holt	Centre for Social Research in Health, University of NSW
Nicolas Parkhill	ACON
Barbara Luisi	Multicultural HIV and Hepatitis Service (MHAHS)
Jane Costello	Positive Life
Neil Fraser	Positive Life