HIV, viral hepatitis and sexually transmissible infections among people from culturally and linguistically diverse backgrounds in Australia

Enhanced surveillance report

UNSW Kirby Institute

UNSW SYDNEY

DOI: https://doi.org/10.26190/4v8n-0m98

This publication and associated data are available at internet address kirby.unsw.edu.au

Suggested citation:
Naruka, E, Gray, R, King, J, Khawar, L, McGregor, S. 2024, HIV, viral hepatitis and sexually transmissible infections among people from culturally and linguistically diverse backgrounds in Australia: Enhanced surveillance report, The Kirby Institute, UNSW Sydney, Sydney, Australia. https://doi.org/10.26190/4v8n-0m98

Design il Razzo, Email: admin@ilrazzo.com.au

Kirby Institute
UNSW, Sydney NSW 2052

Telephone: 02 9385 0900 (International +61 2 9385 0900)
Email: info@kirby.unsw.edu.au

HIV, viral hepatitis and sexually transmissible infections in people from CALD backgrounds in Australia

Enhanced surveillance report

Prepared by:

Ela Naruka
Richard Gray
Jonathan King
Laila Khawar
Skye McGregor

Other contributors:

- Australian Government Department of Health and Aged Care
- State and Territory health departments
- Health Equity Matters and CALD Affiliate group members
- Dr Benjamin Bavinton, Curtis Chan, Dr Hamish McManus, Professor Lisa Maher, Dr Bradley Mathers, Dr Farzaneh Zolala, Dr Htein Aung, The Kirby Institute, UNSW Sydney
- Jason Asselin, Burnet Institute
- Professor Limin Mao, Centre for Social Research in Health, UNSW Sydney
- Dr Daniel Vujcich, Curtin University
- Jennifer MacLachlan, The Peter Doherty Instititute

In collaboration with networks in surveillance for HIV, viral hepatitis and sexually transmissible infections

The Kirby Institute, UNSW Sydney is funded by the Australian Government Department of Health and Aged Care and is affiliated with the Faculty of Medicine, UNSW Sydney. The Surveillance and Evaluation Research Program at the Kirby Institute, UNSW Sydney is responsible for the public health monitoring and evaluation of patterns of transmission of bloodborne viral and sexually transmissible infections in Australia.

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Abbreviations

ABS	Australian Bureau of Statistics
ACCESS	Australian Collaboration for Coordinated Enhanced Sentinel Surveillance
AIDS	acquired immunodeficiency syndrome
ANSPS	Australian Needle Syringe Program Survey
BBV	bloodborne virus
CALD	Culturally and Linguistically Diverse
HIV	human immunodeficiency virus
MESC	Main English Speaking Countries
MiBSS	Migrant Blood borne virus and Sexual health Survey
PrEP	pre-exposure prophylaxis
RNA	ribonucleic acid
STI	sexually transmissible infection
UK	United Kingdom
USA	United States of America

Background

The report provides an analysis of available data, from national HIV notifications, along with the Blood Borne Viruses (BBVs) and sexually transmissible infections (STIs) testing and incidence data in Australia. It includes estimates of incidence and prevalence of BBVs and STIs, by demographic and risk groups, patterns of treatment and behavioural risk factors for HIV, hepatitis C infection and STIs [1].

Australia is a multicultural society with substantial influx of overseas migrants. According to the 2021 Census, around a third (30%) of the Australian population were born overseas, 22% had both parents born overseas and 48% had at least one parent born overseas [2]. People from culturally and linguistically diverse (CALD) backgrounds are identified as a priority population in the National Sexually Transmissible Infections and Blood-Borne Viruses strategies 2023–2030 [3,4]. People from culturally and linguistically diverse backgrounds have highly diverse migration pathways, varied English proficiency, health literacy, and health beliefs and practices that can impact on health care and health outcomes [5].

The Kirby Institute produces annual surveillance reports focusing on BBVs and STIs, however CALD populations are not covered explicitly in these reports. This enhanced report is the first to specifically endeavour to report on BBVs and STIs among people from CALD backgrounds in Australia. The first objective of this report is to review and critique the available relevant health datasets in Australia, examine the variables used to define people as from CALD backgrounds, and determine the limitations and challenges associated with the analysis and interpretation of the available data. Subsequently, the report also aims to analyse trends in HIV notifications, STI and BBV testing patterns among at-risk groups, and incidence and prevalence of BBVs and STIs among people from CALD backgrounds in Australia.

The analyses and interpretation are limited by availability of CALD data variables, which needs to be considered when reading the report. For details on variables used to define people from CALD backgrounds in the report, please refer to the People from CALD backgrounds classification: This report.

Although Aboriginal and Torres Strait Islander peoples are diverse in language and culture, their experiences and needs are unique and are therefore considered distinct from the broader population of people from CALD backgrounds in Australia for the purposes of this report. The Kirby Institute produce a detailed annual report on HIV, STIs and BBVs among Aboriginal and Torres Strait Islander Australians, see Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander peoples: Annual surveillance report 2023.

Executive summary

HIV

In 2022, out of all new HIV diagnoses in Australia, 45% were in people from CALD backgrounds. HIV notifications among people from CALD backgrounds declined by 21% in the last 10 years; however, the decline between 2019 and 2021 was likely influenced by changes in sexual behaviour, healthcare access, testing practices, and travel restrictions due to the COVID-19 pandemic. In 2022, 56% of HIV notifications among people from CALD backgrounds were attributed to people who reported male-to-male sex or male-to-male sex and injection drug use. Of notifications attributed to male-to-male sex or male-to-male sex and injection drug use, 37% were diagnosed late (CD4 count <350).

In the 2022 Australian Needle and Syringe Program Survey (ANSPS) of people who inject drugs attending needle and syringe programs, fewer participants born in non-English-speaking countries had tested for HIV in the last 12 months (42%, 38/91) when compared with participants born in Australia (45%, 668/1487) or other English-speaking countries (44%, 52/117), but the difference was not statistically significant. With high proportions of late diagnosis and low testing rates among people from CALD backgrounds, targeted and culturally appropriate testing strategies are required to prevent ongoing transmission.

Hepatitis C and B

Newly acquired hepatitis C and hepatitis B notifications data had very low completeness of country of birth in National Notifiable Disease Surveillance System (NNDSS), hence CALD identification for analysis for national reporting was not possible. Data from the ANSPS showed the proportion of people who inject drugs born in non-English speaking countries reporting having tested for hepatitis C in the previous 12 months declined from 53% (65/122; 95% CI: 44%, 62%) in 2013 to 39% (35/89; 95% CI: 29%, 50%)) in 2022. In 2022, the proportions of ANSPS participants testing for HCV was lower among participants from CALD backgrounds (39%, 35/89; 95% CI: 29%, 50%) than those Australian-born participants (54%, 770/1414; 95% CI: 51%, 57%). In the same survey, people who inject drugs born in non-English speaking countries reported a lower proportion of hepatitis C treatment uptake (17%; 5/30; 95% CI: 2%, 17%) than Australian-born population participants (47%, 203/433; 95% CI: 425, 51%)) and those born in mainly English-speaking countries[a] (54%, 19/35; 95% CI: 36%, 71%). This suggests inequity in access and linkage to care among people from CALD backgrounds who inject drugs. As the number of people who inject drugs born in non-English speaking countries were low, results should be interpreted with caution.

Based on estimates from the Viral Hepatitis Mapping Project 2022 report, people born in Northeast Asia have the highest hepatitis B prevalence at 5%, accounting for 23.0% of the total population of people with chronic hepatitis B in Australia. This is followed by people born in Southeast Asia, which has a prevalence of 4.03%, representing 22.5% of the total chronic hepatitis B cases.

Sexually transmissible infections

Analyses of STI notifications data were excluded from this report due to lack of CALD variables being collected in the NNDSS dataset. However, based on estimates from the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS), the STI incidence among people from CALD backgrounds attending sexual clinics increased between 2013 and 2022 (from 12.5 to 26.3 per 100 person-years for chlamydia, 10.4 to 19.5 per 100 person-years for gonorrhoea and 1.8 to 4.8 per 100 person-years for infectious syphilis).

a Includes New-Zealand, UK (England, Wales, Scotland, Northern Ireland), Ireland, USA, South Africa, Canada

People from culturally and linguistically diverse backgrounds classification: Australian Bureau of Statistics

People from Culturally and Linguistically Diverse (CALD) backgrounds have diverse cultures, ethnicities, religions and migration trajectories [6] and one-in-five speak English as their second language at home. Consequently, there is no universally accepted definition of CALD in Australia [7]. Many terms, such as multicultural community, migrants, immigrants, and culturally and racially marginalised population, as well as culturally and linguistically diverse, have been used. These approaches aim to recognise a social process, which occurs in response to arbitrary physical characteristics, for example, accent, language, name, religion and clothing. This process results in some groups being racially privileged while others are racially marginalised [8].

CALD is a much broader terminology, and often extends to people who can be characterised as white, even if they are not from an Anglo-Celtic background, for example, a Polish migrant or someone who was born in Australia to Polish parents. For this report we are using the broad term CALD to define our target population mostly because it is the terminology commonly used by the Australian government and non-government sector.

Culture and language variables can be utilised in two ways. The first approach involves using individual variables to collect specific pieces of information, such as country of birth and/or language spoken at home. While this may address a particular need, it often only provides a superficial measure of cultural and language diversity. Unfortunately, most of the national datasets[b] for HIV, BBVs and STIs collect only one or two CALD variables. The second approach involves collecting data on a set of variables which can provide a range of cultural and linguistic information. This multi-dimensional approach offers a relatively broad and balanced method of measuring the cultural diversity in Australia [2].

In 1999, the Australian Bureau of Statistics (ABS), in collaboration with other organisations, developed a list of relevant variables, in response to the growing need for consistent and accurate measurement of cultural diversity in Australia. The ABS Standards for Statistics on Cultural and Language Diversity (SSCLD) presents a nationally consistent framework for the collection and dissemination of data on cultural and lingual diversity [2]. The minimum core set of ABS indicators of culture and language consist of four concepts:

- Country of birth of person,
- Main language other than English spoken at home,
- Proficiency in spoken English, and
- Indigenous status.

The Standard Set of Cultural and Language Indicators by the ABS is as follows:

- Country of birth of person
- Main language other than English spoken at home
- Proficiency in spoken English
- Indigenous status
- Ancestry
- Country of birth of Father
- Country of birth of Mother
- First language spoken
- Languages spoken at home
- Main language spoken at home
- Religious affiliation
- Year of arrival in Australia

However, most available datasets for HIV, BBVs and STIs do not collect information on all ABS CALD indicators. This may be because people from CALD backgrounds were not a primary focus for these datasets, and collecting such information at the clinician level may be considered less feasible. This results in gaps in estimating and understanding the magnitude of diseases in people from CALD backgrounds.

b Please note that different CALD variables are collected in the jurisdictional notification forms for BBVs/ STIs which don't necessarily feed into the jurisdictional and national BBVs and STIs surveillance systems due to various reasons such as lack of data specifications, coding limitations etc.

Review and critique of datasets

National HIV Registry (NHR)

This report uses national HIV notifications data from the National HIV registry (NHR). HIV is a notifiable condition in each State and Territory of Australia, meaning new HIV diagnoses are notified by diagnosing clinicians and laboratories to State and Territory health authorities. This information is forwarded to the Kirby Institute for collation in the NHR and analysis of trends in HIV. The NHR was established in 1990 and incorporates retrospective data from 1985, with new data variables being added over time. Information sought on the notification forms includes: name code (based on the first two letters of the family name and the first two letters of the given name), sex and gender, date of birth, postcode, country of birth, language spoken at home, Aboriginal and/or Torres Strait Islander status, date of HIV diagnosis, CD4+ cell count at diagnosis, clinical status at diagnosis, testing history, viral load at diagnosis, likely place of HIV acquisition, likely source of HIV exposure, year of arrival for people born outside Australia, reason for HIV test, and evidence of newly acquired HIV.

The NHR variables used to determine the cultural and linguistic diversity status[c] for this report are:

1. Country of birth
2. Language spoken at home
3. Year of arrival

The above variables were used in combination, and with other variables collected in the NHR to analyse crucial epidemiological information for reporting, including:

- Sex and Gender
- Age at diagnosis
- HIV exposure risk category
- Postcode at time of diagnosis
- Date of HIV diagnosis
- State / territory of diagnosis
- HIV subtype
- Likely place of HIV acquisition
- Reasons for HIV testing
- Evidence of newly acquired HIV

Completeness of relevant variables in the NHR:

1. Country of birth

Information on *'country of birth'* was reported by all jurisdictions for the 10-year reporting period, 2013–2022. As the completeness of the '*country of birth'* variable in the NHR is above 85% for the entire period (Table 1), the variable has been used in combination with the *'language spoken at home'* variable to classify individuals as CALD for this report (for details, see the (People from CALD backgrounds classification: This report).

2. Language spoken at home

The *'Language spoken at home'* variable identifies the language which is used at home. This variable has been recorded in the NHR since 2014, hence the completeness is low in 2013. Completeness of *'language spoken at home'* amongst people whose '*country of birth'* is recorded as 'other than Australia', has been over 70% since 2014 (ranging from 70% in 2017 to 95% in 2021) (Table 1).

3. Year of arrival

The *'Year of arrival in Australia'* variable reports the year in which a person born overseas first arrived in Australia. Data collection on *'Year of arrival in Australia'* commenced in 2014 in the NHR for all jurisdictions, except South Australia. The year in which an overseas born person arrived in Australia is used to derive 'time to HIV diagnosis after arrival in Australia' for this report, calculated as difference between year of first HIV diagnosis in Australia and year of arrival in Australia. Completeness of *'Year of arrival in Australia*' among overseas born notifications is ≥75% since 2016 (ranging from 78% in 2016 to 85% in 2021) (Table 1). For this reason, we report trends for the last 5 years from 2018–2022 for analyses related to year of arrival.

c Information of 'Aboriginal and Torres Strait Islander' status is also collected in NHR, but not analysed in this report.

Table 1 Completeness of relevant variables, in the National HIV Registry, 2013–2022

National HIV Registry Variable completeness %	Year of diagnoses 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Country of birth	97%	98%	98%	98%	94%	98%	96%	97%	98%	97%
Language spoken at home	59%	87%	85%	86%	70%	81%	72%	94%	95%	94%
Year of arrival among overseas born	11%	54%	55%	78%	86%	81%	80%	80%	85%	79%

Note: No missing information for country of birth, 'not reported' was regarded missing information when completeness proportion were calculated.

Australian Paediatric Surveillance Unit (APSU)

The Australian Paediatric Surveillance Unit (APSU) is a national resource which was established in 1993 to facilitate active surveillance of rare childhood diseases, complications of common diseases and adverse effects of treatment in children. The APSU and the Kirby Institute have been collaborating since 1993 on the surveillance of perinatal exposure to HIV and paediatric HIV cases due to vertical transmission. The study consists of reports to the APSU of perinatally exposed children having been seen through a national network of paediatricians and obstetricians and through follow up of women with diagnosed HIV who have had children. Data collected include the exposed child's name code, sex at birth, date and country of birth, the child's source of exposure to HIV and HIV status. For children diagnosed with HIV, CD4 T-cell count and HIV viral load at the time of diagnosis are also collected. Information is also collected on the mother, including name code, date and country of birth, Indigenous status, the date of HIV diagnosis, source of exposure to HIV. In addition, information is collected on the use of interventions for reducing the risk of vertical transmission (antiretroviral treatment in pregnancy, elective caesarean delivery, if appropriate, and avoidance of breastfeeding). Data are maintained by the Kirby Institute, on the Paediatric HIV Registry (PHR).

The variables in the PHR used to determine the cultural and linguistic diversity status for the pregnant people and infant for this report are:

1. Country of birth of mother
2. Country of birth of child
3. Year of arrival in Australia of mother
4. Language spoken at home by mother
5. Language spoken at home by child

The completeness of each CALD variable in the PHR since 2013 is provided in Table 2.

Table 2 Completeness proportion of CALD variables collected in the PHR 2013–2022

Variables	Year of perinatal exposure 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Country of birth of mother	85%	74%	64%	50%	83%	51%	64%	69%	75%	54%
Country of birth of child	95%	86%	96%	96%	80%	91%	81%	96%	75%	86%
Year of arrival in Australia of mother	48%	57%	34%	31%	57%	34%	21%	39%	37%	48%
Language spoken at home by mother	0%	1%	2%	0%	14%	42%	56%	35%	55%	48%

Note: Information 'not reported' was regarded 'missing' when calculating completeness proportion

National notifiable disease surveillance system (NNDSS)

Diagnoses of blood borne viruses (BBVs) and sexually transmissible infections (STIs) are notified by State and Territory health authorities to the National Notifiable Disease Surveillance System (NNDSS), maintained by the Australian Government Department of Health and Aged Care. In most jurisdictions, BBV and STI diagnoses are notified by the diagnosing laboratory, the medical practitioner, hospital or a combination of these sources.

The NNDSS contains information on 'country of birth' for notifications of newly acquired hepatitis B virus (HBV) and hepatitis C virus (HCV) in the enhanced surveillance data collections. Completeness of this variable is low, nationally and fluctuates across jurisdictions, with most notifications from one state, restricting an accurate representation of CALD population, hence HBV and HCV notifications data could not be presented in this report (Table 3).

The completeness of the 'country of birth' variable was >50% in notifications from the ACT, NSW and Victoria, however numbers were too low in ACT to be representative of the national CALD population and individual state notifications data for NSW and Victoria could not be analysed in this national enhanced report (Table 4 & Table 5). Please note that 'country of birth' variable is collected by some jurisdictions and analysed in various state reports/ projects.

Table 3 Country of birth completeness proportion of newly acquired hepatitis B and hepatitis C virus in the NNDSS, 2013–2022

	Year of Diagnoses									
Hepatitis viruses completeness %	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
HBV newly acquired	70%	66%	63%	58%	63%	64%	80%	54%	39%	36%
HCV newly acquired	43%	53%	46%	41%	53%	56%	50%	43%	29%	9%

Note: Information 'not reported' was regarded 'missing' when calculating completeness proportion

Table 4 Country of birth completeness proportion for newly acquired HBV in NNDSS enhanced dataset, by jurisdiction, 2013–2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australian Capital Territory	100%	100%	100%	100%	100%	100%	100%	100%	100%	NA
New South Wales	87%	92%	86%	86%	54%	54%	76%	58%	50%	50%
Northern Territory	0%	0%	0%	0%	100%	0%	0%	0%	NA	0%
Queensland	12%	7%	1%	5%	8%	13%	16%	21%	5%	21%
South Australia	100%	86%	100%	66%	91%	50%	0%	0%	0%	NA
Tasmania	100%	100%	100%	50%	100%	100%	100%	100%	NA	NA
Victoria	86%	94%	87%	88%	95%	89%	90%	93%	74%	73%
Western Australia	100%	100%	100%	100%	86%	92%	100%	100%	100%	22%

Note: NA- no cases in NNDSS; information 'not reported' was regarded 'missing' when calculating completeness proportion

Table 5 Country of birth completeness proportion for newly acquired HCV in NNDSS enhanced dataset, by jurisdiction, 2013–2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australian Capital Territory	94%	100%	93%	94%	82%	100%	100%	100%	100%	71%
New South Wales	72%	79%	80%	86%	72%	63%	48%	35%	57%	45%
Northern Territory	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Queensland	1%	0%	2%	2%	31%	33%	36%	28%	14%	1%
South Australia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tasmania	100%	100%	100%	100%	4%	100%	90%	100%	0%	100%
Victoria	70%	90%	85%	86%	92%	96%	87%	100%	86%	81%
Western Australia	98%	97%	100%	99%	98%	100%	100%	100%	100%	0%

Note: Information 'not reported' was regarded 'missing' when calculating completeness proportion

None of the relevant ABS CALD defining variables are collected in the NNDSS dataset for STIs except congenital syphilis. *'Country of birth of mother'* has been collected for congenital syphilis in the enhanced surveillance data collections since 2018. Due to the absence of CALD variables collected in the NNDSS dataset, the notifications data could not be analysed for people from CALD backgrounds hence no STI notifications data are presented in this report. Please note, each jurisdiction collects various CALD variables on their respective BBV and STIs notification forms. The respective jurisdictional data are analysed and reported in state / territory reports and projects. STIs and Hepatitis C data specifications for NNDSS were being reviewed at the time of preparation of this report and the collection of information on *'country of birth'* and *'main language spoken at home'* is proposed for all STIs, pending approval from Communicable Disease Network Australia (CDNA).

The Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

The Australian Collaboration for Coordinated Enhanced Sentinel Surveillance of Sexually Transmissible infections and Blood-borne Viruses (ACCESS) is a national sexual health surveillance network that routinely collects and collates de-identified data from over 90 sexual health clinics , general practice clinics, hospitals, community services and pathology laboratories across Australia. It monitors the sexual health of priority populations including gay and bisexual men, injection drug users, sex workers and young people. The project is managed collaboratively between the Kirby Institute, the Burnet Institute, and the National Reference Laboratory (NRL).

The following CALD variables are routinely collected in the ACCESS dataset:

- Country of birth
- Language spoken at home
- Ethnicity

Completeness of relevant variables

The completeness of these indicators over the last 10 years varies between the sexual health clinics and high caseload GP clinics (Table 6 and Table 7). To be consistent in defining the CALD population in this report, a combination of *'country of birth'* and *'language spoken at home'* was used for ACCESS data (People from CALD backgrounds classification: This report).

Table 6 **Completeness proportion of CALD indicators collected in sexual health clinics participating in ACCESS, 2013–2022**

	Year of testing									
Variable	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Country of birth	85%	85%	85%	87%	90%	91%	91%	91%	92%	92%
Language spoken at home	91%	91%	92%	93%	96%	96%	95%	91%	88%	86%
Ethnicity	33%	32%	32%	30%	29%	27%	26%	25%	26%	26%

Table 7 **Completeness proportion of CALD indicators collected in high caseload GP clinics participating in ACCESS, 2013–2022**

	Year of testing									
Variable	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Country of birth	32%	34%	36%	38%	40%	45%	46%	46%	44%	43%
Language spoken at home	22%	22%	22%	24%	25%	26%	26%	26%	25%	25%
Ethnicity	57%	60%	63%	65%	67%	70%	71%	71%	69%	69%

Viral Hepatitis Mapping Project 2022 data

Hepatitis B prevalence data are reported from the Viral Hepatitis Mapping Project report. The data sources used in the mapping report were:

- A mathematical model of hepatitis B in Australia
- Census data according to country of birth, age, year of migration
- Published estimates of seroprevalence

The overall number of people living with chronic hepatitis B in Australia and in each state and territory was estimated using a deterministic compartmental mathematical model of hepatitis B virus infection in the Australian population from 1951 to 2050, which incorporates existing mathematical models, surveillance notifications, epidemiological research, clinical studies, and demographic and mortality data [9]. Further information regarding the model can be found in the associated paper [10] and report [11].

The number of people living with chronic hepatitis B (CHB) born in each country (including Australia) is derived using local antenatal seroprevalence data [12–14]. Country of birth was used to define the people from culturally and linguistically diverse populations. These data are adjusted upwards to correct for the discrepancy in CHB prevalence by sex, according to the differences between males and females observed in published serosurveys [15]. Prevalence estimates for countries for which data were not available from local source estimates were generated from global systematic review papers [16,17]. These prevalence data are combined with data according to country of birth obtained from the 2021 Census.

Country-of-birth designations use the most recent Australian Bureau of Statistics (ABS) Standard Australian Classification of Countries, which adopts a broad definition of 'country' that includes sovereign nation states, administrative subdivisions, external territories, and regions under disputed ownership or control [18].

The Australian Needle Syringe Program Survey (ANSPS)

The Australian Needle Syringe Program Survey (ANSPS) provides serial point prevalence estimates of human immunodeficiency virus (HIV) and hepatitis C virus (HCV) antibody prevalence, HCV ribonucleic acid (RNA) prevalence, and sexual and injecting drug behaviour among people who inject drugs (PWID) in Australia. The survey consists of a convenience sample of people who inject drugs attending needle and syringe programs at selected sites across the country.

The CALD variables collected in the ANSPS are:

- Country of birth
- Language spoken by parents

The completeness of the CALD variables in the ANSPS is over 95% for the 10-year period, 2013–2022. Only *'country of birth'* variable, being an ABS indicator, was used to define respondents as from CALD backgrounds (Table 8). *'Language spoken by parents'* is not an ABS standard recommended to define people from CALD backgrounds, hence has not been used for this report.

Table 8 Completeness proportion of CALD variables in ANSPS, 2013–2022

	Year of survey participation									
ANSPS variables	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Country of birth	100%	99%	98%	98%	99%	98%	99%	98%	97%	99%
Language spoken by parents	100%	99%	99%	98%	99%	99%	99%	99%	99%	99%

Note: Proportion rounded to whole numbers

The Gay Community Periodic Survey

The Gay Community Periodic Surveys (GCPS) are repeated, cross-sectional surveys of gay men conducted in the metropolitan areas of seven Australian states and territories. They are a key part of Australia's behavioural surveillance system for HIV, monitoring sexual practices, drug use and patterns of testing for HIV and other STIs. Initiated in 1996, the GCPS are conducted in capital cities and other densely populated areas of Australia where gay men congregate: Adelaide, Canberra, Melbourne, Perth, Queensland (Brisbane, Cairns and the Gold Coast) and Sydney. In 2014, Tasmania was added to the network of GCPS locations. The GCPS deliberately target men who are socially and sexually involved with gay men, and recruit participants at gay community venues and events, sexual health clinics and online.

The CALD defining indicators used in the survey are

- Country of birth
- Ethnicity
- Recency of arrival

Country of birth has been collected from 2019 onwards and the *'country of birth'* was previously assumed from the self-reported ethnicity indicator, which affected the quality of data for the *'country of birth'*. Hence, the data presented in this report is for the last four years, 2019–2022. The completeness of these variables is as below, in Table 9.

Table 9 Completeness proportion of the CALD variables collected in GCPS

	Year of survey			
Variables	2019	2020	2021	2022
Country of birth	100%	100%	100%	100%
Ethnicity	99%	99%	99%	97%
Recency of arrival (among those born overseas)	99%	99%	100%	99%

Note: Proportion rounded to whole numbers

Asian gay men's community survey

The Asian gay men's community Survey (GAMS) aims to conduct a comprehensive assessment of HIV prevention needs among men who have sex with men of Asian backgrounds who are currently living in NSW and elsewhere in Australia. The latest round of the Sydney Gay Asian Men Survey (2023 round) was funded by the NSW BRISE scheme (NSW recruitment) and the Department of Health BBVSTI surveillance scheme (national expansion). It is led by the Centre for Social Research in Health UNSW and AIDS Council of NSW (ACON) and coordinated by the NSW-based CALD Gay Men Action Group (major Sydney Local Health Districts, Multicultural HIV and Hepatitis Service (MHAHS), Kirby Institute, the University of Sydney and the University of Technology Sydney) and similar networks in other parts of Australia. This type of community-based, periodic behavioural surveillance aims to address CALD gay, bisexual and other men who have sex with men's BBVSTI and health promotion needs by developing, implementing and coordinating social research, health promotion and social marketing activities, consistent with the NSW and national HIV, STIs and Hepatitis B & C Strategic Plans. In the latest round, apart from traditional offline recruitment from a number of specific venues and events with a high clientele of gay Asian men, online recruitment was introduced and later on expanded beyond Sydney (to Melbourne, in collaboration with ARCSHS, La Trobe University and the Victorian AIDS Council). Also, sexual health clinics and community-based test sites were included in the latest round.

Indicators collected in the survey relevant to defining people from CALD backgrounds were *'birthplace of participants'*, *'parents' birthplace'*, *'language spoken at home'*, *'language spoken at home* (if other than English)', *'English confidence'*, *'used interpreter service'*, *'ethnicity'*, *'years living in Australia'*, *'visa type'*, *'Medicare eligibility'*, *'religion'*, '(Table 10).

Table 10 Completeness of CALD variables collected in the Asian gay men community survey, 2021

Variable	Completeness %
Birthplace	100%
Parents' birthplace	99.6%
Ethnicity*	NA
Medicare	87%
Visa type	99%
Language spoken at home	100%
Other language spoken	100%
Religion	51%
English confidence	99%
Used interpreter service	99%

* Ethnicity was assumed from birthplace variable.

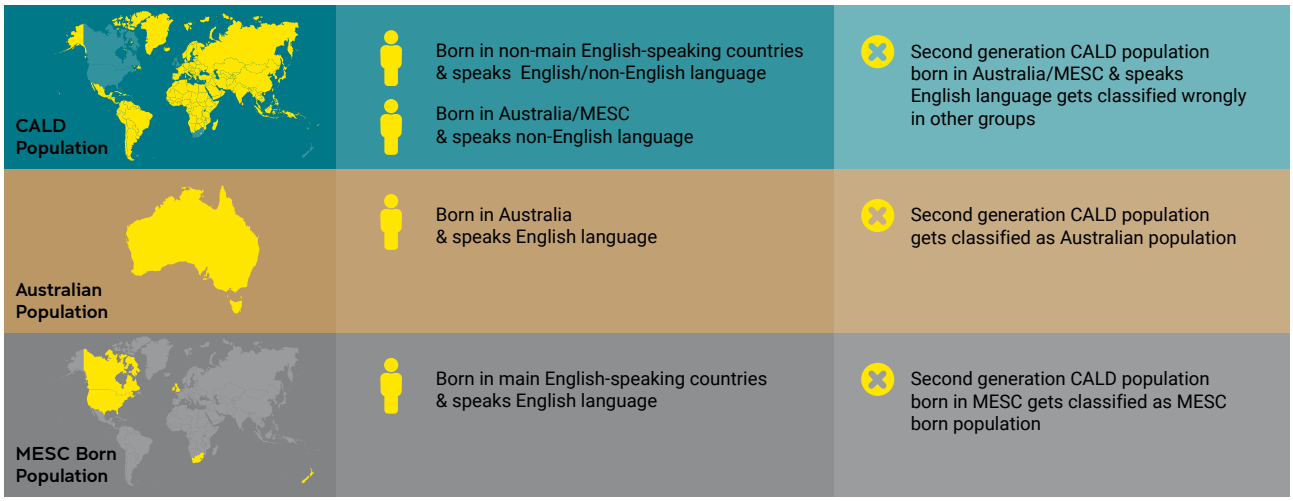
Migrant Blood-Borne Virus and Sexual Health Survey – 2021-2022

The Migrant Blood-Borne virus and Sexual Health Survey (MiBSS) was conducted in 2021–2022. The aim was to understand how migrants born in sub-Saharan Africa, Northeast Africa and Southeast Asia living in Australia think and act in relation to STIs and BBVs. In this report, data from the survey are used to understand migrants' risk behaviour and knowledge relating to HIV, viral hepatitis and STIs. The survey included people who were aged 18 years or over and born in sub-Saharan Africa, Southeast Asia or Northeast Asia. The *'country of birth'* variable was used to define the participating population for this report [19].

People from CALD backgrounds classification: This report

As discussed in the review of the completeness of the CALD variables from the above section, '*country of birth*' and '*language spoken at home*' variables are the most widely collected and most complete CALD variables in the NHR, PHR and ACCESS datasets. Hence a combination of both these two variables was used to classify people as from CALD backgrounds for this report as 'people who are born in non-main English-speaking countries OR people born in Australia/ main English-speaking countries (MESC) but spoke non-English language at home'. People born in Australia and who spoke English at home were classified as 'Australian population' and people who were born in main-English speaking countries and spoke English language at home were classified as people born in 'main English-speaking country population' (Figure 1). With currently collected variables in the above-mentioned datasets (i.e. '*country of birth*' and '*language spoken at home*'), this definition provides the most accurate estimate of people from CALD backgrounds. This definition classifies the people who are born in mainly English-speaking countries, but speak languages other than English at home, as people from CALD backgrounds, whilst acknowledging that main English-speaking countries are increasingly multicultural [7]

Figure 1 Population classification for the NHR, PHR and ACCESS datasets



Please note: When 'language spoken at home' was not reported or was unavailable, population were classified on the basis of 'country of birth' only. We acknowledge the limitations of this classification of people from CALD backgrounds, including but not limited to, not understanding the cultural differences among subgroups of people from CALD backgrounds, however in the absence of other CALD indicators, this is the best applicable measurement of people from CALD backgrounds using the two available variables. The Australian population includes Aboriginal and Torres Strait Islander people as no Indigenous people born overseas spoke language other than English. Aboriginal and Torres Strait Islander people born in Australia and who spoke language other than English were classified as CALD according to the definition. Please note the Kirby Institute produces a separate report on HIV, STI and BBVs among Aboriginal and Torres Strait Islander peoples [20].

For other datasets, namely ANSPS, Asian gay men's community survey, GCPS and MiBSS, only '*country of birth*' was used to define people from CALD backgrounds, either due to absence of collection of ABS variables or poor completeness of relevant variables (see Review and critique of datasets). A common definition used in the past to identify people from CALD backgrounds was to use the variable '*country of birth*' only. Here, people were excluded from the CALD group if they were born in Australia, the United Kingdom (England, Scotland, Wales, Northern Ireland), Ireland, New Zealand, Canada, the United States of America, and South Africa) [21]. These countries are classified by the ABS as main English-speaking countries (MESC) [2]. The MESC classification was not an attempt to classify countries on the basis of their use of English, but a list of countries from which Australia received a significant number of migrants who were likely to speak English [2].

The main limitation of using only one (*country of birth*) or two variables (*country of birth and language spoken at home*) to define a CALD background is the potential misclassification of otherwise CALD individuals who were born in Australia or other main English-speaking countries [7]. Another limitation of this classification of population is that it is not able to highlight the differences and disparities between the sub-groups of people from CALD backgrounds and their cultural differences and language barriers are masked [7]. While recognising the limitations of using these variables and the absence of variables that capture diversity within the people from CALD backgrounds, the information presented in this report is an important step toward improved STI and BBV surveillance in this population. We hope that in the future, with improving linkages between various health and administrative datasets and an increasing focus on people from CALD backgrounds in infectious disease reporting, the STI and BBVs administrative datasets and research studies will consider collection of more robust CALD indicators to better capture true language and cultural diversity.

Gaps in currently routinely collected datasets and implications

What is currently collected

'Country of birth' was collected across all the routinely collected datasets and was most complete in the national HIV dataset and community surveys (Figure 2). This variable provides objective information about an individual's birthplace and has been used as a proxy for cultural backgrounds, despite significant limitations of this assumption. ABS's '*country of birth'* standard includes three variables – *country of birth of person, country of birth of father,* and *country of birth of mother*. None of the STI and BBV datasets collect information on the latter two variables. A key limitation of this approach is that it fails to potentially capture all people who are from CALD backgrounds. For instance, Australian born people, who have one or both parents from Philippine background, would not be classified as people from CALD backgrounds, based on the country they are born in, however may still experience barriers in access to healthcare and social determinants of health. Another important limitation of defining people from CALD backgrounds by using only the *'country of birth'*, is that it is not able to highlight differences and disparities relating to sub-groups or cultural diversity that may be hidden if results are averaged out to a bigger group. Presenting data at the most detailed level allows for a richer depiction of the outcome being explored, which is not possible when using a single indicator, such as '*country of birth'*. However, it is often impractical to present highly disaggregated results, which can raise privacy and confidentiality issues as well as statistical and interpretation concerns, due to low numbers of notifications. Nonetheless, as the most widely collected and complete variable in current data collections, this variable enables comparison with people from CALD backgrounds and Australian born notifications across a range of datasets.

'Country of birth of parents' was only collected in the Asian gay men's community survey [22]. This variable is important to identify the second-generation Australians who are born in Australia, however, retain their parents' culture, ethnicity and language. Second generation people from CALD backgrounds are most likely classified as 'non-CALD' and hence people from CALD backgrounds are underrepresented in all routinely collected STI and BBV datasets. Of note, although not in alignment with the ABS standard indicator of '*country of birth of parents',* the ANSPS dataset collects *'language spoken at home by parents'*.

'Language spoken at home other than English' was not collected by any of the routinely collected datasets analysed for this report as the data specifications are unavailable at national level in NNDSS dataset, however, the NHR and ACCESS datasets collected '*language spoken at home'* and ANSPS dataset collected *'language spoken by parents'* as proxies for the ABS language standard. It is important to note the variable '*language spoken at home'* does not indicate specifying language spoken at home *'other than English'* in the question, which may lead to bias in recording this variable and might have under recorded non-English languages spoken by people in the database.

The *'language spoken at home'* indicator, collected in NHR and ACCESS datasets, has unique strengths. It can inform the extent to which community languages are retained by their community or replaced by English and is a component of understanding an individual's cultural background to some extent [2]. A limitation of this indicator is that it includes people whose first, main and most proficient language is English in a category with individuals whose use of a language other than English may only be marginal [23]. It also fails to account for the differences in English proficiency within a population and does not capture information on individuals' language preferences for speaking, especially in healthcare setting, as well as for reading and listening. This limitation can lead to overgeneralisation of data analysis across all cultural groups [24] .

None of the routinely collected datasets analysed in this report, explicitly collected information on *'language spoken at home other than English'*. This limits the ability of datasets to capture true information on other 'non-English' language spoken at home or within an individual's ethnic or community group. The Kirby Institute, after undertaking extensive consultation with the relevant stakeholders, has modified the 'language question' on the national HIV notification form in 2023 to 'main language spoken at home other than English'. The aim is to capture true information on languages spoken at home other than English, an ABS recommended standard for defining CALD data in Australia [2]. Please note the GAMS and MiBSS collects information on 'other language' if *'language spoken at home is other than English,'* however it is not routinely collected, at least not annually [22].

The Asian gay men's community survey also collects information on '*English confidence' and 'use of interpreter required' as proxies for 'proficiency in spoken English'* [22]. The limitation of indicators such as 'English confidence' and 'Proficiency in English' is that they are self-assessed and hence subjective, which might lead to inaccurate data collection [7]. However, *'Proficiency in spoken English'*, when combined with *'Language spoken at home other than English'*, can be a good measure for identifying service needs and the communities that are at a potential disadvantage to access services due to low English proficiency [25]. 'Proficiency in English language' can also help us understand the magnitude of language barrier which can lead to underrepresentation of people from CALD backgrounds where English is used in surveys or is the only medium to collect information [21].

'Year of arrival in Australia' has been collected in the NHR since 2014; *'recency of arrival'* is collected in the GCPS dataset and *'length of stay in Australia'* is collected in MiBSS. It collects information on the year in which a person, born in another country first arrived in Australia. Data related to *'year of arrival'*, in conjunction with *'country of birth'* and *'date of HIV diagnosis in Australia'*, is used to understand the time taken by an individual to receive their first ever HIV diagnosis in Australia. However, due to the lack of collection of other ABS standard indicator in the NHR, such as *'proficiency in spoken English'* we could not analyse language usage patterns for the people from CALD backgrounds and how their length of stay in Australia affected their English proficiency and, consequently, their access to services.

'Religion type' was collected in GAMS and MiBSS surveys. These variables provide an indication of an individual's spiritual beliefs and practices. Also, if someone does not identify with a religion or spiritual belief, it is advised to have an option of 'no religion', for better data quality [2].

'Ethnicity' is collected in GAMS as proxy of the ABS standard recommended collection of 'Ancestry' (Figure 2). In Australia, 'Ethnicity, 'cultural background' and 'Ancestry' standards are used interchangeably to measure an association with ethnic or cultural groups which do not equate directly to countries or languages and lack explicit criteria [26]. Ethnicity, cultural identity, or cultural background are complex, dynamic, and multi-layered concepts referring to an individual's sense of identity, which can change over time and across generations [27]. From 2024, up to four options can be provided in 'Ancestry' standard which might help in robust data collection [28]. However, ancestry data alone is not considered a good measure to understand the extent to which an individual is associated with advantages and disadvantages of a particular culture/ethnic group [2]. As ancestry is a self-assessed measure of ethnic and cultural origin and background and is complex in the Australian context. It is advised to use this variable in conjunction with other variables, such a *'country of birth of person'*, *'main language spoken at home'* and *'country of birth of parents'*.

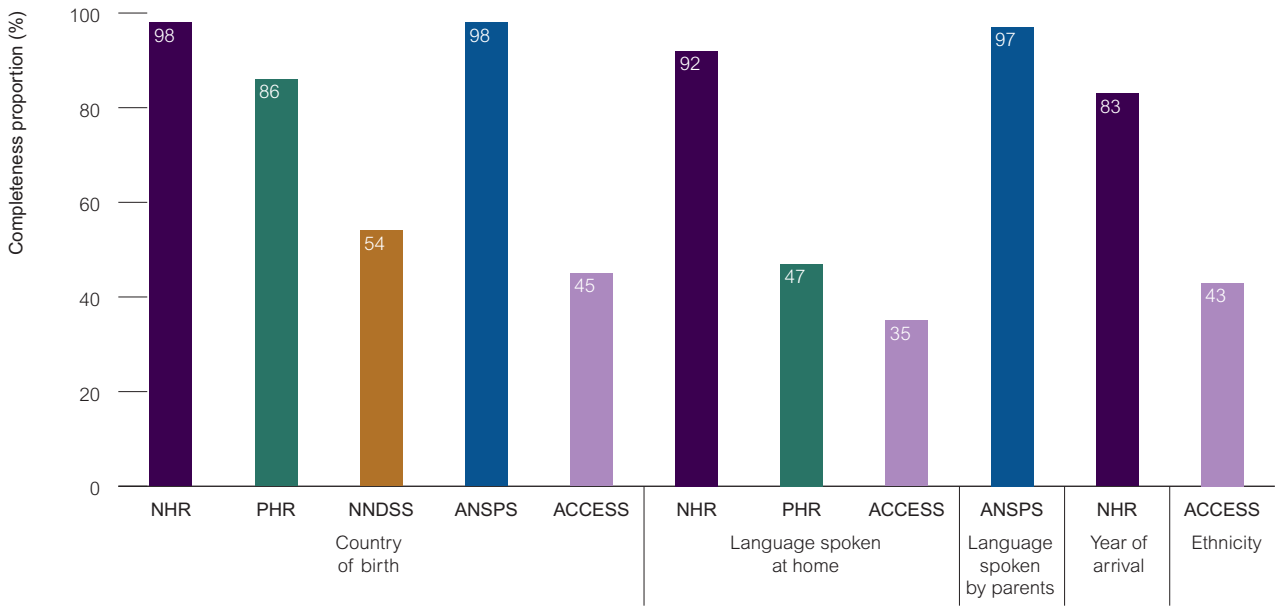
Figure 2 Indicators collected in the STI and BBV health datasets and surveys in this report

	Standard set of ABS recommended CALD variables collected in HIV, STI and BBVs datasets and research surveys										Other non-ABS recommended CALD indicators collected in HIV, STI and BBVs datasets and research surveys							
Datasets	Country of Birth of person	Main Language spoken at home other than English	Proficiency in spoken English	Ancestry	Country of birth of parents	First language spoken at home	Languages spoken at home	main Language spoken at home	religious affiliation	Year of arrival in Australia	Language spoken at home	Language spoken by parents	Ethnicity	English confidence	Used interpreter service	Visa	Medicare eligibility	Recency of arrival
NHR	•									•	•							
NNDSS (HBV/HCV)	•																	
NNDSS (STI)																		
ACCESS	•										•		•					
ANSPS	•											•						
GCPS	•										•		•					•
Asian Gay Men's survey series	•				•				•		•		•	•	•	•	•	
MiBSS	•							•	•				•			•		•

Gaps in completeness of collected variables

None of the STI and BBV datasets collect all the ABS standard variables. Even if the variables are collected, low completeness of the variables limits the use of the collected information due to its inaccurate representation of the people from CALD backgrounds and estimation of disease burden in this population. For instance, the *'country of birth'* variable is collected in the enhanced surveillance NNDSS dataset for newly acquired hepatitis B and newly acquired hepatitis C (Review and critique of datasets, Table 3), however, the *'country of birth'* variable wasn't used to classify people from CALD backgrounds for this report due to low completeness of the information on this variable (Figure 3). High completeness proportion is crucial for enhancing the reliability, representativeness and integrity of the information collected. High completeness of the variables prevents gaps in understanding and supports robust decision-making processes to represent the national picture of people from CALD backgrounds. Incomplete data can lead to inaccurate and misleading analyses, making it challenging to identify true and accurate representations of disease trends in the population.

Figure 3 Completeness proportion of variables used to define CALD status, for the 5 years period 2018–2022



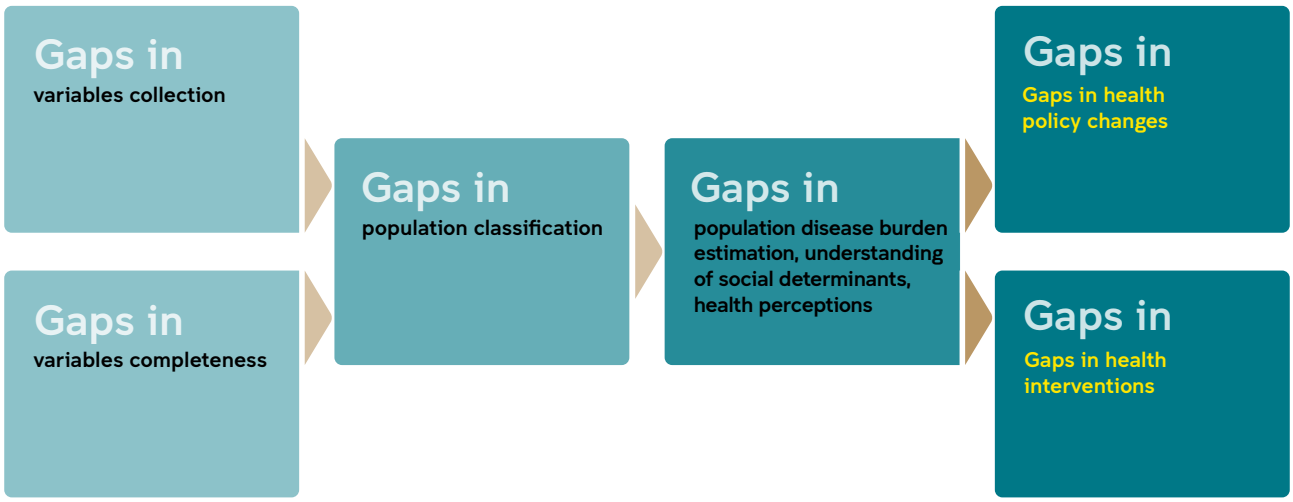
Gaps in interpretation of data

In Australia, there exist complex subgroups of people from CALD background with diverse and different lived experiences and healthcare access history [29]. In absence of data about health access barriers, using a single variable or a combination of two variables, such as *'country of birth'* and *'language spoken at home'* can be a good first step. However, this approach is insufficient to capture the nuanced and complex health needs and barriers faced by people from CALD backgrounds [21]. People from CALD backgrounds encounter several factors affecting their health, such as:

- **social interactions** – cultural norms, community dynamics and social support networks are very significant in shaping health behaviours and outcomes.
- **health perceptions** – cultural beliefs and understanding of health services affect how individuals engage with healthcare systems. Stigma and misconceptions can hinder access to appropriate care.
- **lifestyle choices** – cultural practices and dietary/ physical activity habits all contribute to health outcomes. Understanding these lifestyle factors is essential for tailoring effective interventions.
- **structural disadvantages** – socioeconomic factors, discrimination, systemic inequalities create additional challenges for CALD populations, which affects overall health and wellbeing.

Understanding these factors are crucial to addressing their health service needs [30], which is restricted by currently collected variables in the routinely collected STIs and BBVs datasets, especially at the national level. Also, lack of collection of sufficient variables in datasets and poor completeness of collected variables, leads to inaccurate classification of the population, which leads to underestimation of disease burden, and which results in misinformed health policies and interventions for people from CALD backgrounds (Figure 4). Recognising the complexity of CALD health experiences and addressing the gaps in data collection are crucial steps toward equitable and effective healthcare provision for these diverse communities.

Figure 4 **Gaps in HIV, BBVs and STIs health datasets and implications**



Understanding disease burden in any population requires high-quality datasets [31] along with achieving a high proportion of completeness of the relevant variables used to defining the population. For people from CALD backgrounds, having such datasets is even more critical to accurately capture disease trends and multifaceted nuances.

Epidemiological data summary

HIV

There were 555 HIV notifications with a first ever diagnosis in Australia in 2022, of which 267 (48%) notifications were among people born overseas and 274 (49%) among people born in Australia. Of the 267 HIV notifications among people born overseas, 247 (45% of total first ever diagnosed in Australia) HIV notifications were among people classified as CALD (based on country of birth and language spoken at home), with the remaining 21 (4%) HIV notifications among people born in mainly English-speaking countries[d] and who spoke English at home. Between 2013 and 2022, HIV notifications among people from CALD backgrounds increased from 29% to 45% of HIV notifications in Australia.

HIV diagnoses: While fluctuations in the number of notifications were observed prior to 2019, the 32% decline in HIV notifications among people from CALD backgrounds in Australia between 2019 and 2022 is likely largely due to reduced overseas travel and/or migration due to COVID-19 public health restrictions and constraints placed on travel and movement. The notifications among people from CALD backgrounds were increasing prior to 2019 (312 HIV notifications in 2013 to 363 HIV notifications in 2019).

Newly acquired HIV: In 2022, 22% of the HIV notifications among people from CALD backgrounds were classified as newly acquired; 31% of cases reporting male-to-male sexual contact were newly acquired and 7% of cases reporting heterosexual contact were newly acquired.

Gender: In 2022, there were 55 notifications among females from CALD backgrounds and 189 among males from CALD backgrounds, respectively, indicating a 20% decrease (n=69 in 2013 to 55 in 2022) and 22% (n= 242 in 2013 to 189 in 2022) of decline in both groups, respectively, in last 10 years of period, however the proportion of late and advanced diagnosis have been on an increase in both females and males from CALD backgrounds.

Age: Among HIV notifications in 2022 classified as CALD, the median age was 35 years overall, 32 years among CALD men who reported having male to male sexual contact as exposure risk, 42.5 years among CALD males reporting heterosexual contact and 37.5 years among CALD females reporting heterosexual contact. In 2022, 38% of HIV notifications among people from CALD backgrounds were aged 30-39 years of age.

Exposure risk category: In 2022, male-to-male sex was the major HIV risk exposure in Australia among people from CALD backgrounds, accounting for 139 (56%) HIV notifications (including those reporting male-to-male sex and injection drug use), with heterosexual sex reported for 83 (34%) notifications, and injection drug use for <5 (less than 2%) notifications.

Gay and bisexual men: Among gay and bisexual and other men who have sex with men among people from CALD backgrounds, there was a 38% increase in the number of HIV notifications from 2013 to 2019, prior to COVID-19, and a 44% increase from 2019 to 2022 post COVID-19. Testing and Pre-Exposure Prophylaxis (PrEP) uptake need to increase

d Main English-speaking countries include USA, UK (England, Scotland, Northern Ireland and Wales), Ireland, Canada, New Zealand, South Africa

further among people from CALD backgrounds and across all jurisdictions to have the greatest benefit, particularly in the contexts of declines in testing during the COVID-19 pandemic. In 2022, 48% of people from CALD backgrounds reporting male-to-male sexual contact as their HIV transmission route were recorded as having acquired HIV overseas.

Heterosexual contact: Of 83 HIV notifications among people from CALD backgrounds attributed to heterosexual sex in 2022, 47 (57%) were female and 36 (43%) were male. Asia was the region of birth for 50% (n=23) of female notifications and 42% (n=15) of male notifications.

People who inject drugs: Among people who inject drugs, high uptake and broad coverage of harm reduction strategies to minimise BBV transmission continue to be highly effective in sustaining low HIV prevalence among people from CALD backgrounds, with HIV notifications among people from CALD backgrounds attributed to injection drug use being less than six for the last five years.

Late HIV diagnosis: 52% of the total notifications classified as people from CALD background were categorized as late HIV diagnoses (having a CD4+ cell count of less than 350 cells/μL), This was the second highest proportion of late HIV diagnoses among CALD notifications since 1990 (highest in 2021 at 60%); 37% of HIV notifications among Australian-born were diagnosed late in 2022. Nearly 60% (n=49) of notifications attributed to heterosexual sex were diagnosed late among people from CALD backgrounds, in 2022. However, 57% of all late HIV diagnoses with exposure risk as heterosexual sex were men (28 HIV notifications out of 49 late diagnosis), suggesting a lack of testing/services targeting heterosexual men/or men who maybe at risk from CALD backgrounds and the importance of initiatives to raise awareness about HIV testing.

Late diagnoses are likely to have been in people who acquired HIV at least four years prior to diagnosis. These high rates of late diagnoses are a continuation of a longer-term trend, reinforcing the need for improved access to testing for people from CALD backgrounds to reduce the time between HIV acquisition and diagnosis. The COVID-19 pandemic may also have influenced the proportion of notifications classified as late, by reducing the number of people undergoing routine testing leading to an increased proportion of symptom driven testing.

Region of birth: In 2022, 41% of notifications among people from CALD backgrounds were among those born in Southeast Asia, 24% from Northeast and South and central Asia and 11% were from Sub Saharan Africa.

State and Territory: From 2018–2022, 35% of HIV notifications among people from CALD backgrounds were from New South Wales, and 32% from Victoria followed by 14% from Queensland. Most HIV notifications among people from CALD backgrounds were from urban areas (83% in 2022), followed by regional areas (12%).

Likely place of acquisition: In 2022, 48% of HIV notifications among people from CALD backgrounds were likely attributed to HIV acquired after migrating to Australia. For CALD men reporting male-male sexual contact as their exposure risk, the proportion who likely acquired HIV before migrating to Australia fluctuated between 34% in 2018 and 42% in 2022. Among people from CALD backgrounds who reported heterosexual sex as exposure risk, 55% were acquired before migrating to Australia.

Time to diagnosis after arrival in Australia: From 2018–2022, 36% of HIV notifications (with a first ever diagnosis in Australia) among people from CALD backgrounds were diagnosed within the first two years after arrival in Australia. In comparison, over the same period, 45% of notifications from main English-speaking countries were diagnosed after more than 11 years since arrival in Australia.

Reasons for testing: In the five-year period from 2018–2022, the most common reasons for HIV testing for people from CALD backgrounds included STI screening (34%), clinical symptoms (28%), and immigration screening (10%). For people born in main English-speaking countries, the most common reasons for HIV testing included STI screening (37%), clinical symptoms (35%), and risk behaviour (16%).

Vertical transmission among women born overseas: High rates of vertical transmission of HIV were observed in children who were born to overseas born mothers previously (1993–1997, n=7 positive), with a decline in cases of vertical transmission in last 5 years (2018–2022, n=1 positive).

HIV testing: Among participants in the Asian gay men's community surveys 2021, 64% of non-HIV-positive gay and bisexual men (922 total participants) reported having had an HIV test in the 12 months prior to the survey. Data from the GCPS indicate 62% of non-HIV positive men classified as CALD reported being tested for HIV in the previous year. Among recent migrants (people arrived in Australia in last 5 years) who were ever tested in Australia, 41% were tested for HIV within 6 months of arrival, according to the Asian gay men's community surveys 2021 survey. According to Australian Needle Syringe Program (ANSPS) survey data, in 2022, 42% (38/91; 95% CI: 31%, 52%) of people from CALD backgrounds who inject drugs attending needle and syringe programs self-reported having had an HIV test in the 12 months prior to the survey.

Among gay and bisexual men from CALD backgrounds attending general practice clinics in the ACCESS network, the proportion of gay and bisexual men who were tested for HIV at least once in the previous 12 months remained stable from 87% in 2013 to 88% in 2019 and 2022. These data suggest that while clinic attendees are testing for HIV at high rates, the broader community of people from CALD backgrounds have lower testing rates.

According to MiBSS survey data, 54% of the participants had tested for STI and BBV, either in last 12 months or more than 2 years ago.

To improve health outcomes and reduce the risk of onward transmission, targeted testing strategies are needed to counter this low testing coverage, and the increasing proportion of people being diagnosed with HIV late diagnosis.

HIV prevalence: HIV prevalence among people from CALD backgrounds who inject drugs, attending needle and syringe programs, was estimated to be 3% (3/91; 95% CI: 0.6%, 9%) in 2022 compared to 2% (34/1637; 95% CI: 1%, 3%) for people born in Australia and other English speaking countries; given the low number of CALD participants in the ANSPS, results should be interpreted with caution. HIV prevalence among gay and bisexual men participating in the GCPS was 6% in 2022.

HIV incidence: HIV incidence (the rate at which HIV-negative people are newly diagnosed with HIV) among gay and bisexual men from CALD backgrounds attending sexual health clinics in the ACCESS network reduced between 2013 (0.38 new infections per 100 person-years) and 2022 (0.13 new infections per 100 person-years). In 2021, HIV incidence among gay and bisexual men from CALD backgrounds was lowest at 0.07 new infections per 100 person-years and increased to 0.13 new infections in 2022. Among female sex workers from CALD backgrounds, HIV incidence remained low between 2018 and 2022 and was 0.08 per 100 person-years in 2018 and 0.0 per 100 person-years in 2022.

HIV prevention among people who inject drugs: In the 2022 ANSPS among people who inject drugs attending needle and syringe programs, 26% (22/85; 95% CI: 16%, 36%) of participants born in non-English speaking countries reported receptive syringe sharing in the last month, compared to 19% (279/1469; 95% CI: 17%, 21%) of participants born in Australia or other English speaking countries.

Condom use: According to 2021 data from the Asian gay men's community survey, 28% (n=105) of non-HIV-positive gay Asian men reported consistently using condoms when having sex with casual sex partners in the past six months. According to GCPS 2021 data, 23% of the participants from CALD backgrounds reported using condom(s) consistently, however this proportion declined in 2022 survey to 18%.

According to the MiBSS survey data, participants who had a valid response to the survey question and had indicated travelling overseas since 2018 (n= 105), 43% of the participants always used condoms with an overseas partner and 24% of the participants reported never using any condoms when overseas with an overseas partner.

PrEP usage and awareness: According to 2021 data from the Asian gay men's community survey, the PrEP usage rate was 35% (including both on demand/daily use). 54% of the participants in Asian gay men's community survey, never heard of or had never taken PrEP. To reach the 2025 UNAIDS targets, it will be necessary to expand PrEP promotion, as well as other forms of prevention to people from CALD backgrounds who constitute a major proportion of HIV notifications.

Number of people living with HIV: There were about 9710 people living with HIV from CALD backgrounds in 2022. An estimated 1768 (18%) people from CALD backgrounds living with HIV in Australia in 2022 who were unaware of their HIV status (undiagnosed). The estimated proportion with undiagnosed HIV was highest among people born in Southeast Asia (26%). The estimated proportion with undiagnosed HIV was also higher among those born in South and Central Asia and Latin America (16%).

Viral Hepatitis

HCV testing: In 2022, 25% of people from CALD backgrounds who inject drugs attending a sexual health clinic in the ACCESS network had an HCV test in the past year. According to ANSPS data, in 2022, 39% (35/89; 95% CI: 29%, 50%) of participants classified as CALD who inject drugs reported having a hepatitis C test in the past 12 months, compared to 54% (828/1520;95% CI: 51%, 56%) of people who inject drugs born in Australia or other English-speaking countries.

HCV prevalence: Among ANSPS participants, hepatitis C antibody prevalence among people classified as from CALD backgrounds, declined from 51% (73/142; 95% CI: 42%, 59%) in 2018 to 37% (33/90; 95% CI: 26%, 47%) in 2022. By comparison, greater declines were seen in hepatitis C RNA prevalence, reflecting the reduced level of current infection among people with hepatitis C antibodies since the widespread availability of direct-acting antiviral (DAA) therapy. Hepatitis C RNA prevalence declined from 65% (24/37;95% CI: 47%, 79%) in 2015 to 17% (14/84; 95% CI: 9%, 26%) in 2022.

HBV prevalence: According to the Viral Hepatitis Mapping report 2022 estimates, regions of birth with the highest prevalence were North East Asia (5.00% prevalence, representing 23% of the total with CHB) and South East Asia (4.03% prevalence, 22.5% of the total). A smaller proportion of people in Australia with CHB were born in Southern and Eastern Europe (5.9% of the total with CHB), Oceania (4.6%) and Sub-Saharan Africa (4.3%).

HCV treatment: Among participants of the ANSPS born in non-English speaking countries, the proportion of people who inject drugs and have a history of living with hepatitis C who report lifetime treatment increased from 8% (5/62; 95% CI: 2%, 17%) in 2013 to 50% (10/20; 95% CI: 27%, 72%) in 2021, then declined to almost half to 17% (5/30; 95% CI: 5%, 34%) in 2022.

HCV prevention among people who inject drugs: In 2022, among ANSPS participants, 26% (22/85; 95% CI: 16%, 36%) of participants born in non-English speaking countries reported receptive syringe sharing in the last month compared to 20% (267/1359; 95% CI:17%, 21%) of participants born in Australia and 11% (12/110; 95% CI: 5%, 18%) of those born in other English-speaking countries (p-value 0.025). Rates of receptive syringe sharing among participants born in non-English speaking countries increased from 16% (18/116; 95% CI: 9%, 23%) in 2013 to 26% (22/85; 95% CI: 16%, 36%) in 2022, however change is not significant (p value 0.069).

Sexually transmissible infections

STI incidence: In 2022, STI incidence among people from CALD backgrounds attending sexual health clinics in ACCESS network, increased for all STIs. Incidence was 26.3 new infections per 100 person years, more than doubling from 12.5 new infections per 100 persons in 2013 for chlamydia; 19.5 new infections per 100 person-years in 2022, a 87% increase in the incidence since 2013 (10.4 new infections per 100 person-years) for gonorrhoea and was 4.8 per 100 person-years, up from 1.8 per 100 person-years in 2013 for infectious syphilis.

STI testing: The number of syphilis tests per year among the people from CALD backgrounds attending ACCESS clinics was stable in the last 5 years at 1.2 tests per year. Among HIV-positive gay and bisexual men from CALD backgrounds, the average number of syphilis tests increased from 1.4 tests per year in 2013 to 1.7 tests per year in 2022. Among gay and bisexual men from CALD backgrounds repeat comprehensive STI testing within 13 months of previous testing was 65% in 2022, an increase from 53% in 2013. In 2022, 43% of participants of the GCPS from CALD backgrounds who were HIV negative, or HIV status was unknown, had a comprehensive test or had only insertive condomless anal intercourse in last 12 months.

Human papillomavirus: According to a research study [32], there was a 64% reduction (RR: 0.36, 95% CI: 0.35-0.38) in the proportion of all sexual health clinic patients with a genital warts diagnosis relative to the pre-vaccination period of 2004–2007. Australian-born patients showed a more pronounced decline at 72% (RR: 0. 28, 95% CI: 0 .27-0.30), as compared to overseas-born patients at 49% reduction (RR: 0 .51, 95% CI:0.48-0.54).

HIV

HIV notifications with a previous overseas diagnosis

There were 894 HIV notifications in Australia in 2022, including both people with a first ever diagnosis in Australia (555) and people previously diagnosed overseas (339). Of the HIV cases previously diagnosed overseas with a subsequent diagnostic test conducted in Australia in 2022; 33% were in Victoria, 27% in New South Wales and 24% in Queensland (Table 11).

Of the 339 HIV cases previously diagnosed overseas with a subsequent diagnostic test conducted in Australia in 2022, 76% (257 cases) were among people from CALD backgrounds. Characteristics of HIV cases classified as among people from CALD backgrounds, and with a previous overseas diagnosis, are provided in Table 12.

Table 11 Number of HIV notifications in Australia by State and Territory and whether HIV was first diagnosed in Australia or overseas, 2022

	Australia	Overseas	Total cases
New South Wales/ Australian Capital Territory	173	95	268
Northern Territory	<5	<5	5
Queensland	100	83	183
South Australia	22	21	43
Victoria/ Tasmania	195	114	309
Western Australia	62	24	86
Australia	555	339	894

Source: State and territory authorities. To minimise risk of identification, suppressed cell for NT as HIV notification among people from CALD backgrounds were less than 5 and combined ACT and Tasmania number of notifications with NSW and Victoria, respectively

In 2022, among HIV notifications with a previous overseas diagnosis, 193 (70%) were male, 183 (71%) were aged 30 years or over, and 56% were attributed to male-to-male sex or male-to-male sex and injection drug use (Table 12).

Table 12 Characteristics of HIV notifications among people classified as from CALD backgrounds, previously diagnosed overseas, 2013–2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD previously diagnosed overseas	131	171	144	182	208	218	252	239	131	257
Gender CALD										
Male	80	99	94	111	154	157	181	164	79	193
Female	50	72	50	70	52	61	71	75	48	61
Age group										
0-19	5	5	<5	11	<5	5	6	<5	<5	<5
20-29	35	35	45	42	68	62	67	61	14	70
30-39	51	68	56	83	79	83	107	90	61	104
40-49	29	49	31	33	41	46	43	49	32	49
50+	11	14	10	13	18	21	29	37	23	30
State										
New South Wales/Australian Capital Territory	32	55	44	67	81	75	69	65	50	62
Northern Territory	5	<5	<5	<5	<5	<5	<5	<5	0	0
Queensland	39	42	35	43	43	49	81	57	19	67
South Australia	8	9	11	8	13	7	19	<5	12	18
Victoria/ Tasmania	28	40	39	52	41	66	62	83	37	93
Western Australia	19	23	14	11	28	18	18	27	13	17
Risk exposure category										
Male-to-male sex	46	57	60	67	90	95	108	117	57	141
Male-to-male sex and injection drug use	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Heterosexual contact	75	92	70	90	77	74	92	72	42	70
Injection drug use	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Other	7	18	10	19	40	44	48	44	31	41

Source: State and territory health authorities

Note: To minimise risk of identification, suppressed cell for NT as HIV notification among people from CALD backgrounds were less than 5 and combined ACT and Tasmania number of notifications with NSW and Victoria, respectively. Other includes Mother to child transmission, exposure at a healthcare setting, recipient of blood, Haemophilia and clotting disorder etc

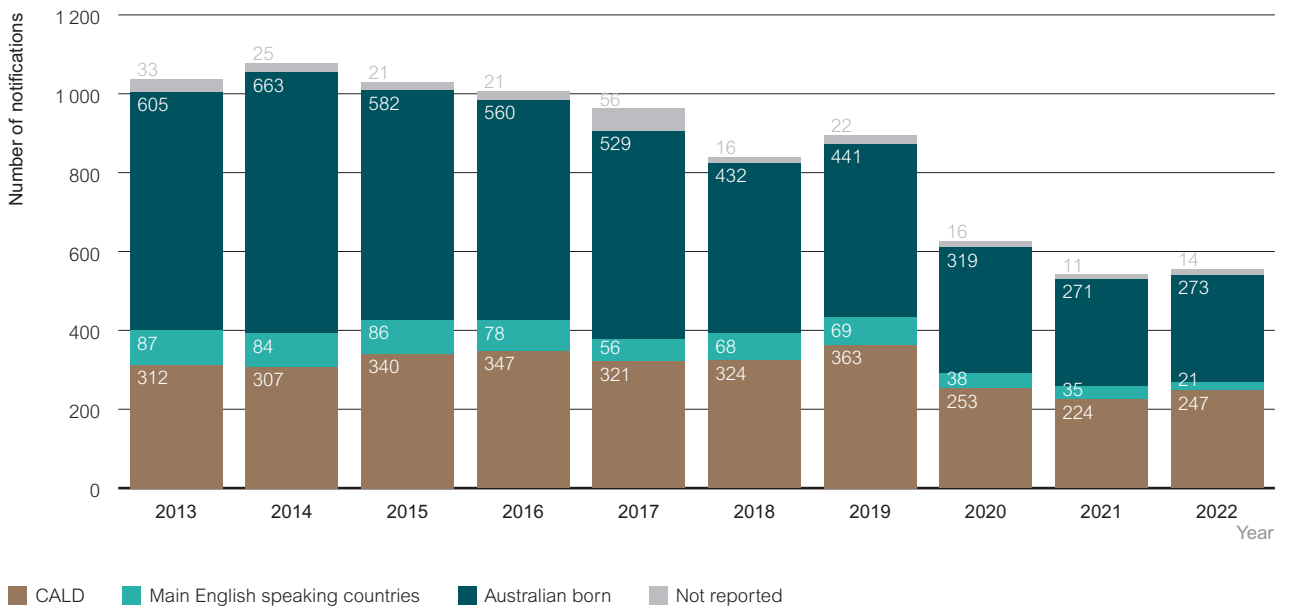
HIV notifications with a first ever diagnosis in Australia

The following section focuses on people diagnosed with HIV for the first time in Australia (notifications) among people classified as from CALD backgrounds. Of the 555 first time HIV notifications in Australia in 2022, 267 (48%) were among people born overseas, 274 (49%) were Australian born and 14 (3%) had no country of birth reported or data were missing. Among overseas born, 247 (45% of total notifications) were among people from CALD backgrounds and 21 (4% of total notifications) were born in main English-speaking countries (Figure 5). Among the 247 HIV notifications in Australia classified as people from CALD backgrounds, 189 (77%) were males, 174 (70%) were aged 30 years and above, and 139 (56%) reported an HIV exposure of male-to-male sexual contact or male-to-male sexual contact and injection drug use (Table 13). Just over a fifth of all notifications among people from CALD backgrounds (22%) were classified as newly acquired (evidence of HIV acquisition in the 12 months prior to diagnosis), while 52% of notifications were classified as diagnosed late.

In the period 2013–2019 the number of HIV notifications classified as people from CALD backgrounds increased by 16% (312 notifications in 2013 and 363 notifications in 2019) (Figure 5). A decline of 32% between 2019 and 2022, from 363 to 247 notifications, is likely due to the impacts of the COVID-19 pandemic, alongside targeted prevention measures, and should be interpreted with caution (Table 13). A similar pattern has been seen among males, with a 23% increase in HIV notifications between 2013 and 2019 and followed by a 36% decline between 2019 and 2022. Notifications among females declined by 20% in the 10 year period (69 notifications in 2013 and 55 notifications in 2022). Between 2013 and 2022 there were 33 notifications classified as people from CALD backgrounds and reported as trans and gender-diverse people (data not shown due to low numbers), although it is likely that this figure is an underrepresentation due to potential under reporting of gender diversity.

By age group, the largest number of notifications in 2022 were among people aged 30 to 39 years (n=93), followed by those aged 20 to 29 years (n=69), and those 40 to 49 years old (n=44). The number of notifications remains low among younger age groups in 2022, with <5 notifications among those aged 15 to 19 years and among those aged 0 to 14 years. Notifications in younger age groups fluctuated between 2013 and 2022 (Table 13).

Figure 5 HIV notifications, by population group, 2013–2022



Source: State and territory health authorities

Table 13 Characteristics of HIV notifications among people from CALD backgrounds, with a first ever diagnosis in Australia, 2013–2022

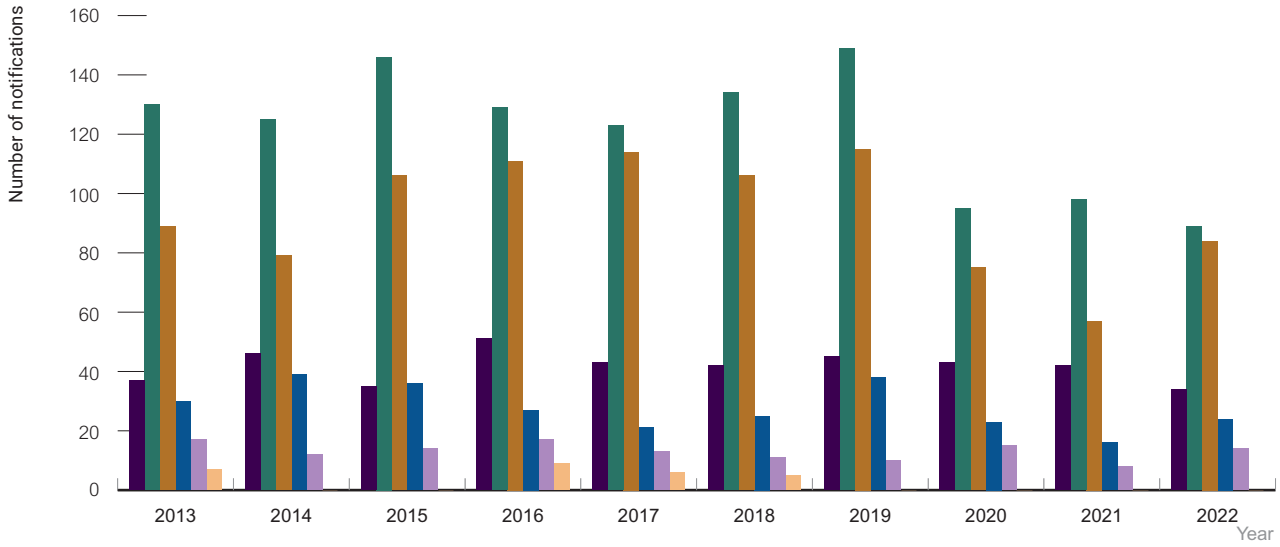
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
HIV notifications among people from CALD background	312	307	340	347	321	324	363	253	224	247
Gender[a]										
Male	242	247	278	300	265	271	297	206	184	189
Female	69	60	60	45	51	50	56	41	38	55
Late and advanced diagnosis[b]										
Late diagnosis %	41%	36%	35%	34%	41%	44%	48%	50%	60%	52%
Advanced diagnosis %	22%	21%	18%	17%	24%	22%	27%	34%	46%	32%
Median age (in years)	34	32	32	32	33	32	32	33	34	35
Age group[c]										
0-19	14	8	14	<5	<5	5	<5	8	<5	<5
20-29	96	100	117	124	93	115	130	85	65	69
30-39	95	118	124	129	130	110	134	82	85	93
40-49	54	55	46	53	50	53	54	49	39	44
50+	51	24	39	34	43	40	39	29	32	37
Language spoken at home										
English %	NA	58%	33%	46%	38%	40%	39%	57%	74%	40%
Language other than English %	NA	15%	13%	15%	11%	10%	9%	20%	14%	17%
Not reported %	NA	4%	2%	2%	3%	5%	4%	1%	4%	6%
State										
New South Wales/Australian Capital Territory	130	125	146	129	123	134	149	95	98	89
Queensland	37	46	35	51	43	42	45	43	42	34
South Australia	17	12	14	17	13	11	10	15	8	14
Victoria/ Tasmania	89	79	106	111	114	106	115	75	57	84
Northern Territory	7	<5	<5	9	6	5	<5	<5	<5	<5
Western Australia	30	39	36	27	21	25	38	23	16	24
Region of birth[d]										
Oceania and Antarctica	25	14	11	10	17	14	15	19	14	13
Europe (North-West and South and Eastern)	37	36	40	26	37	24	23	14	9	11
North Africa and the Middle East	25	18	25	10	15	10	7	11	12	13
Southeast Asia	96	100	136	145	121	122	165	104	107	100
Northeast Asia and Southern and Central Asia	53	70	77	79	61	83	69	37	41	58
South/ Central America	34	23	14	42	37	41	51	28	25	23
Sub-Saharan Africa	40	44	37	32	32	29	31	40	14	28
Exposure risk category[e]										
Male-to-male sex	168	184	220	242	202	213	224	144	138	129
Male-to-male sex and injection drug use	<5	5	<5	6	9	8	11	11	7	10
Heterosexual sex	114	99	90	89	88	78	90	81	68	83
Injection drug use	5	5	5	<5	<5	5	<5	<5	<5	<5
Other/undetermined	22	14	22	8	20	20	35	16	10	21

a Transgender numbers not shown due to low numbers
b Late HIV diagnosis was defined as newly diagnosed HIV with a CD4+ cell count of less than 350 cells/μL, and advanced HIV as newly diagnosed infection with a CD4+ cell count of less than 200 cells/μL. Newly acquired HIV was categorised as not late or advanced diagnosis, irrespective of CD4+ cell count. HIV diagnoses classified as advanced include those classified as late.
c Suppressed the notifications <5 to avoid potential identification risks throughout the table.
d Of note, this classification of people from CALD backgrounds omits South Africa from the Sub-Saharan Africa (SSA) region; New Zealand from Oceania region; UK, England, Wales, Scotland, Northern Ireland, Ireland from Europe region; when analyzing the HIV notifications by region of birth.
e Other includes Mother to child transmission, exposure at a healthcare setting, recipient of blood, Haemophilia and clotting disorder etc. Includes men who had sex with both men and women.
Source: National HIV Registry

Between 2013 and 2022, the number of HIV notifications among people from CALD backgrounds declined by 8% in Queensland (from 37 to 34), 32% in New South Wales and the Australian Capital Territory (from 130 to 89), 20% in Western Australia (from 30 to 24), and 6% in Victoria and Tasmania (from 89 to 84) (Figure 6).

In the Australian Capital Territory, South Australia, Tasmania and the Northern Territory the numbers of notifications each year are low and in some instances have been grouped with other jurisdictions, so trends need to be interpreted with caution.

Figure 6 HIV number of notifications among people from CALD backgrounds by State and Territory, 2013–2022



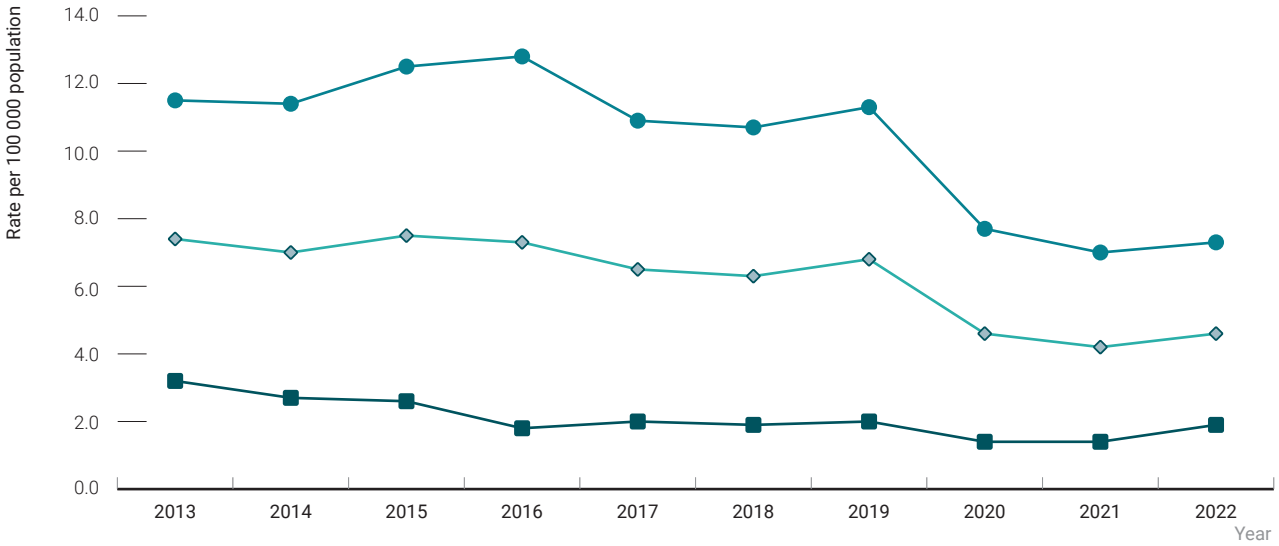
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
QLD	37	46	35	51	43	42	45	43	42	34
NSW/ACT	130	125	146	129	123	134	149	95	98	89
VIC/TAS	89	79	106	111	114	106	115	75	57	84
WA	30	39	36	27	21	25	38	23	16	24
SA	17	12	14	17	13	11	10	15	8	14
NT	7	<5	<5	9	6	5	<5	<5	<5	<5

Note: NT, ACT and Tas had less than 5 notifications for last 5 years. ACT and Tas numbers presented with NSW and Victoria respectively to be consistent with national reporting. Source: State and territory health authorities.

Demographics

Between 2013 and 2019, the HIV notification rate among people from CALD backgrounds declined by 8% from 7.4 to 6.8 per 100 000 population. Between 2019 and 2021, the HIV notification rate declined by 38% from 6.8 to 4.2 per 100 000 population, followed by a slight increase to 4.6 per 100 000 in 2022 (Figure 7). Similar trends were seen among males and females and in 2022, with notification rates of 7.3 per 100 000 males and 1.9 per 100 000 females (Figure 7).

Figure 7 HIV notification rate per 100 000 population among people from CALD backgrounds, by gender, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Male	11.5	11.4	12.5	12.8	10.9	10.7	11.3	7.7	7.0	7.3
Female	3.2	2.7	2.6	1.8	2.0	1.9	2.0	1.4	1.4	1.9
Total	7.4	7.0	7.5	7.3	6.5	6.3	6.8	4.6	4.2	4.6

Source: State and territory health authorities

In 2022, there were 55 HIV notifications among females from CALD backgrounds and 189 among males from CALD backgrounds, respectively (Table 14 and Table 15), indicating a 20% decrease (n=69 in 2013 to 55 in 2022) and 22% decrease (n= 242 in 2013 to 189 in 2022) respectively, in the 10 year period. However the proportion of late and advanced diagnosis have increased in both females and males from CALD background (Table 14 and Table 15).

Table 14 HIV notifications among females from CALD backgrounds, 2013–2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Females from CALD backgrounds	69	60	60	45	51	50	56	41	38	55
Late and advanced diagnosis[a]										
Late diagnosis %	60%	47%	47%	49%	52%	45%	62%	50%	61%	57%
Advanced diagnosis %	29%	31%	28%	26%	39%	18%	35%	44%	42%	32%
Median age (in years)										
Age group[b]										
0-19	11	<5	<5	0	<5	<5	<5	<5	<5	<5
20-29	17	17	16	8	11	14	15	7	8	10
30-39	19	26	20	22	26	21	21	18	17	20
40-49	8	11	9	9	9	8	11	9	6	10
50+	14	<5	11	6	<5	5	8	6	6	13
Region of birth[c]										
Oceania and Antarctica	13	<5	5	5	<5	<5	6	<5	<5	6
Europe (North-West and South and Eastern)	<5	<5	5	<5	<5	<5	<5	<5	<5	0
North Africa and the Middle East	<5	<5	8	0	<5	<5	<5	<5	<5	<5
Southeast Asia	24	17	14	16	25	19	27	19	20	19
Northeast Asia and Southern and Central Asia	<5	5	8	6	<5	9	6	<5	<5	7
South/ Central America	<5	<5	0	<5	<5	0	<5	0	<5	0
Sub-Saharan Africa	21	29	20	16	17	14	14	14	5	18

a denominator includes cases where late diagnosis was not reported/missing
b Suppressed the notifications <5 to avoid potential identification risks throughout the table
c Of note, this classification of people from CALD backgrounds omits South Africa from the Sub-Saharan Africa (SSA) region; New Zealand from Oceania region; UK, England, Wales, Scotland, Northern Ireland, Ireland from Europe region; when analyzing the HIV notifications by region of birth.

Table 15 HIV notifications among males from CALD backgrounds, 2013–2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Males from CALD backgrounds	242	247	278	300	265	271	297	206	184	189
Late and advanced diagnosis[a]										
Late diagnosis %	35%	34%	33%	32%	39%	44%	45%	51%	60%	51%
Advanced diagnosis %	19%	18%	16%	15%	21%	23%	26%	32%	47%	32%
Median age (in years)										
Age group[b]										
0-19	<5	5	10	<5	<5	<5	<5	7	0	<5
20-29	79	83	100	114	81	99	114	76	57	58
30-39	76	92	104	107	102	88	109	63	67	72
40-49	45	44	36	44	39	45	39	37	32	34
50+	37	21	28	28	39	35	31	23	26	23
Region of birth[c]										
Oceania and Antarctica	12	13	6	5	13	10	9	14	10	7
Europe (North-West and South and Eastern)	34	33	35	25	35	20	23	12	6	11
North Africa and the Middle East	21	14	17	10	14	9	6	11	10	9
Southeast Asia	71	83	120	128	92	101	130	80	86	78
Northeast Asia and Southern and Central Asia	51	65	69	72	60	74	63	35	38	51
South/ Central America	32	22	14	41	35	41	48	28	23	23
Sub-Saharan Africa	19	15	17	16	15	15	17	26	9	10

a denominator includes cases where late diagnosis was not reported/missing
b Suppressed the notifications <5 to avoid potential identification risks throughout the table
c Of note, this classification of people from CALD backgrounds omits South Africa from the Sub-Saharan Africa (SSA) region; New Zealand from Oceania region; UK, England, Wales, Scotland, Northern Ireland, Ireland from Europe region; when analyzing the HIV notifications by region of birth.

HIV notification rates among people classified as from CALD backgrounds over the last 10-year period 2013–2022 differed by region of birth. The HIV notification rate was highest among people born in sub-Saharan Africa, followed by Latin America and people born in Southeast Asia (Table 16). Due to the impact of COVID-19-related travel restrictions, HIV notification rates by region of birth from the end of 2019 to the end of 2022 have decreased and should be interpreted with caution.

Table 16 HIV notifications rate among people from CALD backgrounds by region of birth, 2013–2022

Region of birth	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Oceania and Antarctica	5.8	3.3	2.6	2.4	4.2	3.5	3.7	4.8	3.5	3.3
Northeast and Southeast Europe	3.3	3.2	3.6	2.4	3.4	2.3	2.2	1.4	0.9	1.1
North Africa and the Middle East	6.5	4.5	6.0	2.3	3.3	2.1	1.4	2.2	2.4	2.6
Southeast Asia	11.2	11.3	14.9	15.2	12.1	11.8	15.4	9.5	9.9	9.2
Northeast and South and Central Asia	3.9	4.7	4.8	4.6	3.3	4.1	3.2	1.7	1.9	2.7
South and Central Americas	25.0	15.9	9.3	25.7	20.9	21.6	25.1	13.0	11.9	11.0
Sub-Saharan Africa	25.1	26.3	21.1	17.4	16.7	14.7	15.1	18.9	6.6	13.3

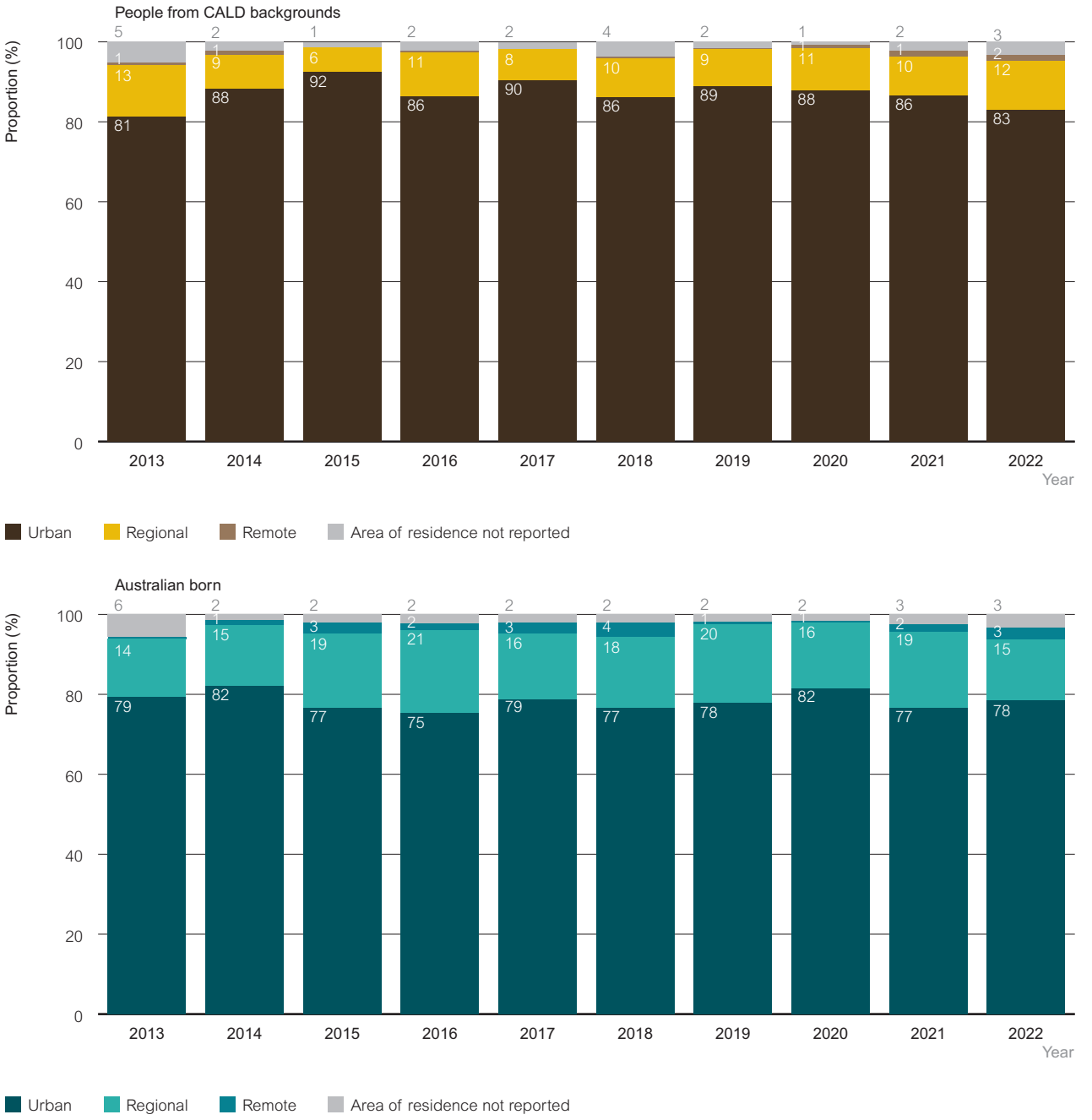
Source: NNDSS; ABS estimates

Note: The Sub-Saharan Africa region of birth does not include South Africa; Northeast and Southeast Europe do not include UK and Ireland; Oceania and Antarctica do not include New Zealand.

Area of residence

The majority (83%) of HIV notifications among people from CALD backgrounds in 2022 were among people residing in urban areas; this proportion remained stable over the 10 years from 2013–2022 (Figure 8). A further 12% of HIV notifications in 2022 were among people residing in regional areas, and 2% in remote areas. Among Australian-born HIV notifications, 78% were among people residing in urban areas in 2022, 15% in regional and 3% in remote areas.

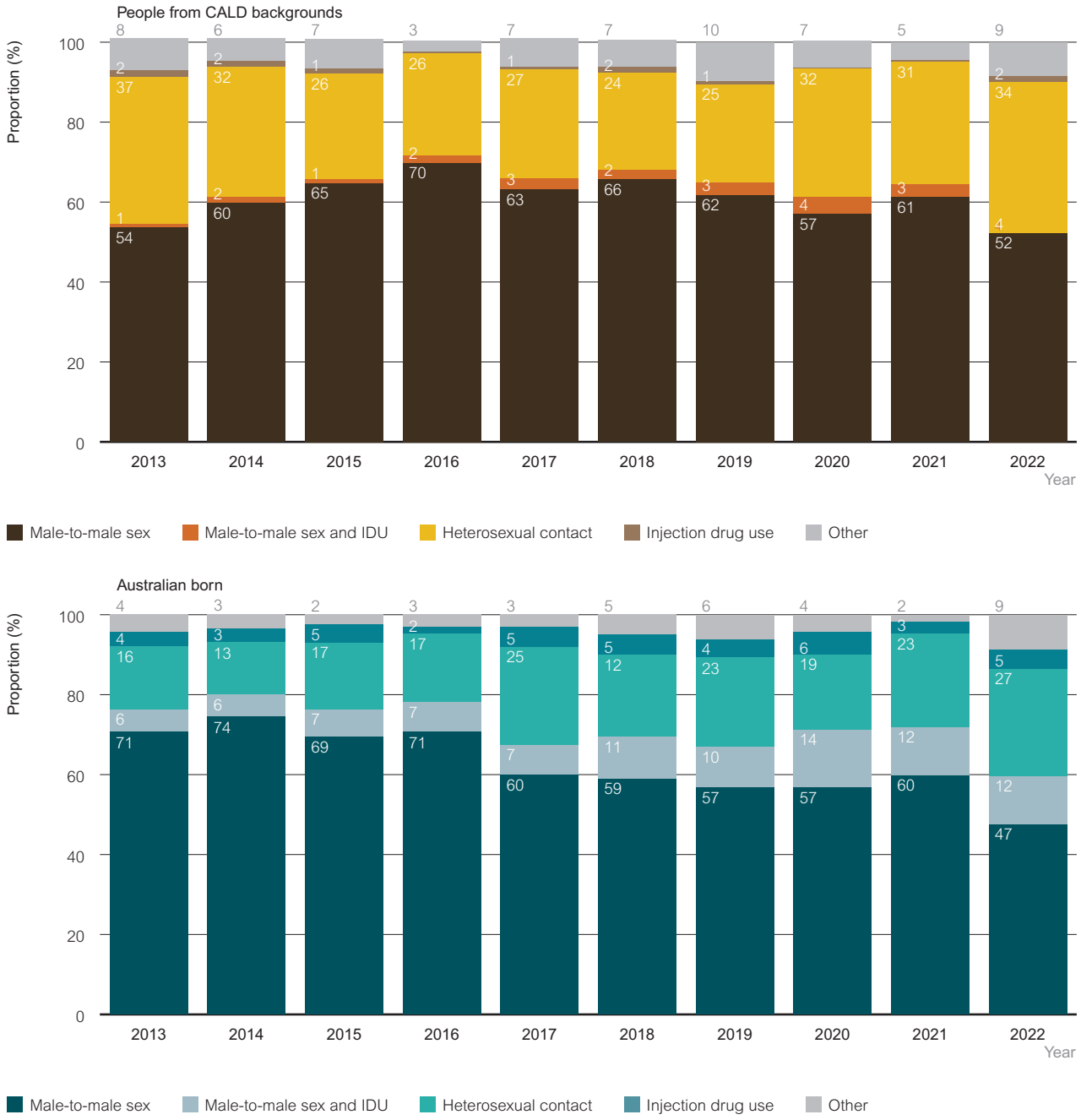
Figure 8 Proportion of HIV notifications among people from CALD backgrounds, by area of residence, 2013–2022



HIV risk exposure

Transmission of HIV among people from CALD backgrounds continues to occur mostly through male-to-male sexual contact (Table 13), as with the non-CALD population in Australia. Of the 247 new HIV notifications in 2022, 56% (n=139) were attributed to male-to-male sex (including male-to-male sex and injection drug use. Heterosexual sex accounted for 34% (n=83) of notifications in 2022, a slight decrease from 37% (n=114) since 2013. Injection drug use accounted for less than 2% (n=<5) of notifications in 2022, however an increase can be seen since last 5 years in notifications attributed to injection drug use (Table 13, Figure 9). By comparison, nearly two thirds (59%) of HIV notifications among Australian-born cases were attributed to male-to-male sex (including male-to-male sex and injection drug use) in 2022, with 27% attributed to heterosexual sex (Figure 9).

Figure 9 Proportion of HIV notifications among people from CALD backgrounds and Australian born population, by exposure category, 2013–2022



Source: State and territory health authorities

Note: The 'male-to-male sex' category includes men who had sex with both men and women.

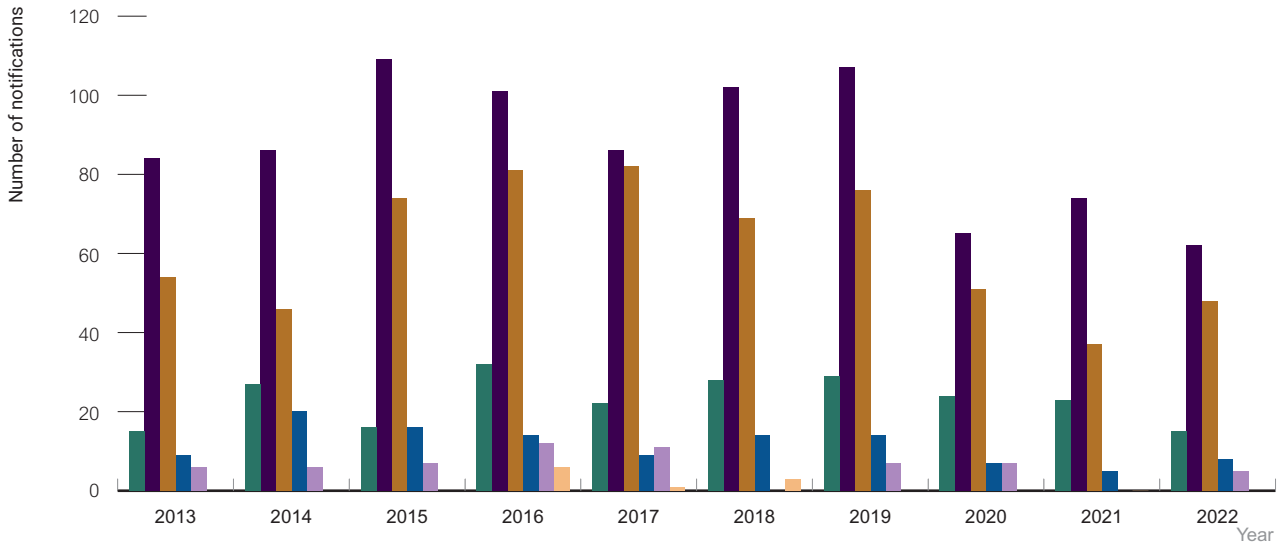
Subpopulations

Gay and bisexual men: Men who have sex with men may identify as gay, bisexual, queer, heterosexual, transgender, or other identities. However, notifications only record data on the most likely HIV risk exposure, which is behavioural, so 'male-to-male sex' is used when describing HIV notifications. This section relates to notifications with a reported exposure classification of male-to-male sex or male-to-male sex and injection drug use.

The median age at HIV diagnosis reporting male-to-male sex as an HIV risk exposure was 32 years among men from CALD backgrounds and 38 years for Australian born, in 2022 (data not shown). Of the 139 cases among people from CALD backgrounds with new HIV diagnoses in 2022 for whom exposure to HIV included male-to-male sex, 12% also reported sex with women, an increase from 10% (17 out of 169 notifications) in 2013 (data not shown). There were 10 men for whom HIV risk exposure included male-to-male sex and injection drug use in 2022 (Table 13).

Between 2013 and 2022 there was a 19% decline in HIV notifications attributed to male-to-male sex among people from CALD background, nationwide. In the same period, all jurisdictions saw a reduction in the number of notifications attributed to male-to-male sex (Figure 10). In the Northern Territory numbers were <5 for all years except 2016 (6 cases) (data not shown), hence cell suppression is utilised to avoid risk of identification.

Figure 10 Number of HIV notifications among people from CALD backgrounds reporting male to male sexual contact as HIV exposure risk, by state, 2013–2022



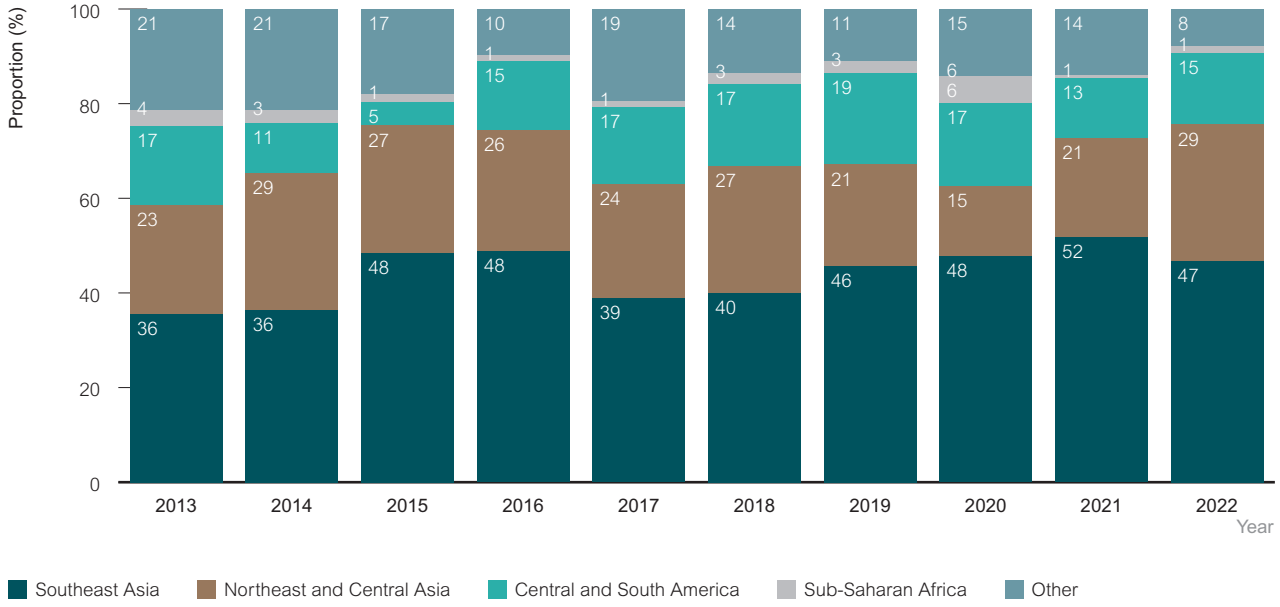
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
NSW/ACT	84	86	109	101	86	102	107	65	74	62
QLD	15	27	16	32	22	28	29	24	23	15
VIC/TAS	54	46	74	81	82	69	76	51	37	48
WA	9	20	16	14	9	14	14	7	5	8
SA	6	6	7	12	11	<5	7	7	<5	5
NT	<5	<5	<5	6	<5	<5	<5	<5	<5	<5

Note: ACT and Tasmania numbers are presented together with NSW and Victoria, respectively, as numbers for ACT and Tasmania were less than 5 for all years.

Between 2013 and 2022, the number of HIV notifications among Australian-born men attributed to those reporting male-to-male sexual contact as exposure risk decreased by 65% from 463 to 163 (data not shown). The declines seen among Australian-born men from 2016 onwards are likely due to the availability of pre-exposure prophylaxis (PrEP) and high treatment coverage (see HIV prevention on page 67 for further detail).

Between 2013 and 2022, the proportion of HIV notifications reporting male-to-male sexual contact as exposure risk, born in Southeast Asia increased from 36% in 2013, to 47% in 2022 (Figure 11). International travel was strongly affected by COVID-19 related border closures between 2020 and 2021, which also likely impacted on HIV notifications among people from CALD backgrounds. In 2022, 76% of the HIV notifications reporting male-to-male sexual contact among people from CALD backgrounds were born in Asia (including Southeast Asia, Northeast Asia and Central Asia).

Figure 11 Proportion of HIV notifications reporting male-to-male sexual contact, by region of birth, 2013–2022

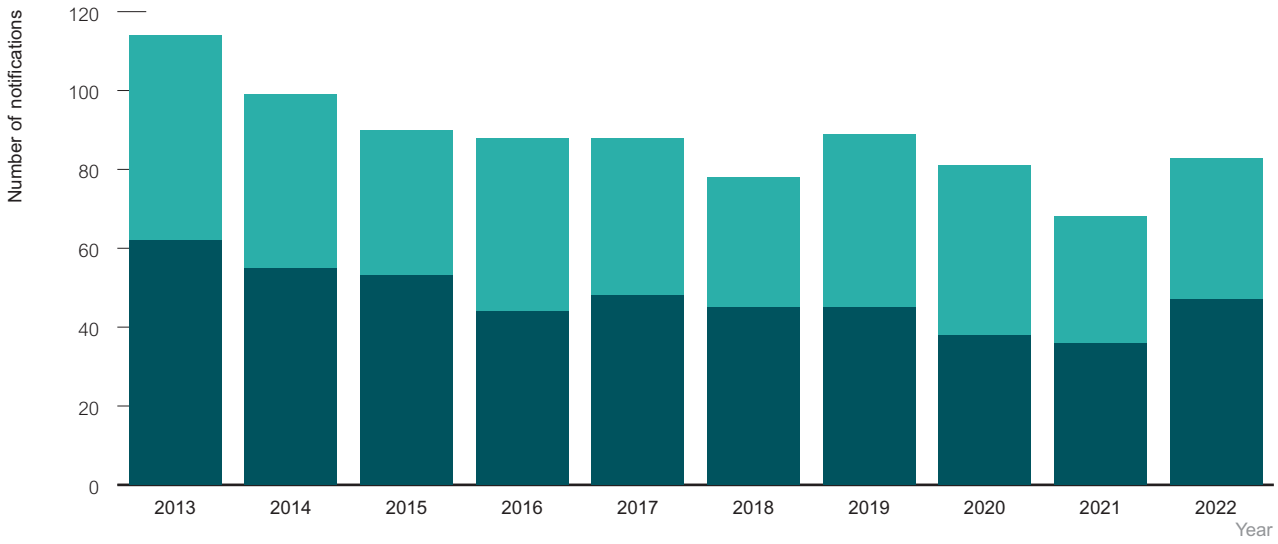


Note: SSA does not include South Africa due to the CALD classification for this report. 'Other region' include Oceania/Antarctica area, Europe and North Africa and Middle east

Heterosexuals: Of the 83 HIV notifications among people from CALD backgrounds attributed to heterosexual sex in 2022, 36 (43%) were among men and 47 (57%) were among women (Figure 12). The number of notifications attributed to heterosexual sex among women from CALD backgrounds declined by 42% from 62 in 2013 to 36 in 2021, increasing again in 2022, to 47 notifications. Among men, the number of notifications attributed to heterosexual sex fluctuated between 2013 and 2022 with a 31% decline from 52 in 2013 to 36 in 2022 (Figure 12).

The median age of HIV notifications among people from CALD backgrounds reporting heterosexual sex as exposure risk, was 39.5 years in 2022 (data not shown). The median age among CALD men reporting heterosexual sex was 42.5 years and for women was 37.5 years in 2022 (data not shown).

Figure 12 Number of HIV notifications among people from CALD backgrounds reporting heterosexual sex as exposure risk, by gender, 2013–2022

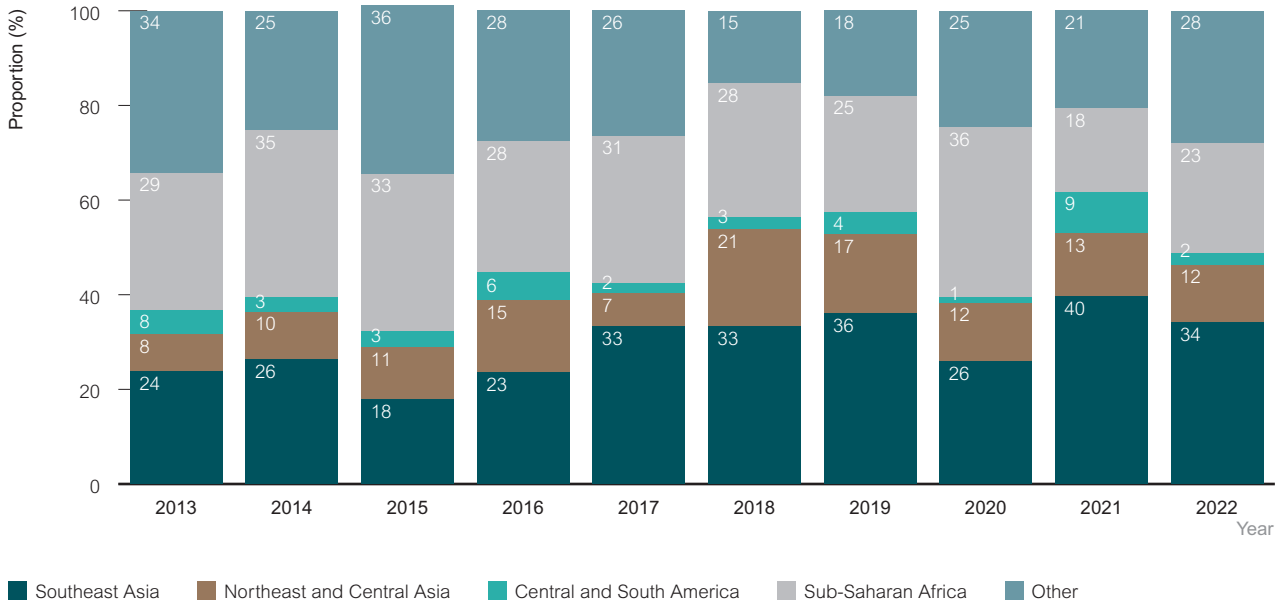


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	114	99	90	89	88	78	90	81	68	83
Heterosexual female	62	55	53	44	48	45	45	38	36	47
Heterosexual male	52	44	37	44	40	33	44	43	32	36

Source: State and territory health authorities
Note: Transgender notifications number not shown in figure due to low numbers

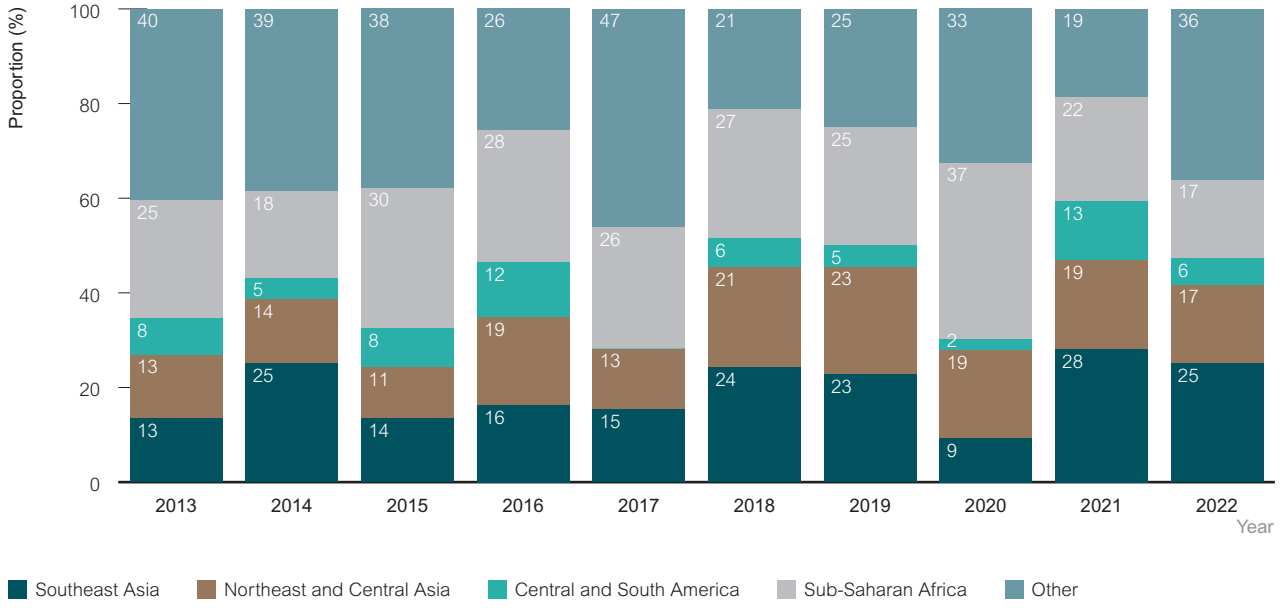
In 2022, of HIV notifications among people from CALD backgrounds attributed to heterosexual sex, 34% were born in Southeast Asia followed by 23% in sub-Saharan Africa region (Figure 13). Among the men reporting heterosexual sex as exposure risk, 25% were born in Southeast Asia and 17% born in Northeast and Central Asia and sub-Saharan Africa regions, each. Among women reporting heterosexual contact as exposure risk, 41% were born in Southeast Asia followed by 28% in sub-Saharan Africa region. (Figure 14, Figure 15).

Figure 13 Proportion of HIV notifications among people from CALD backgrounds who report heterosexual sex as exposure risk, by region of birth, 2013–2022



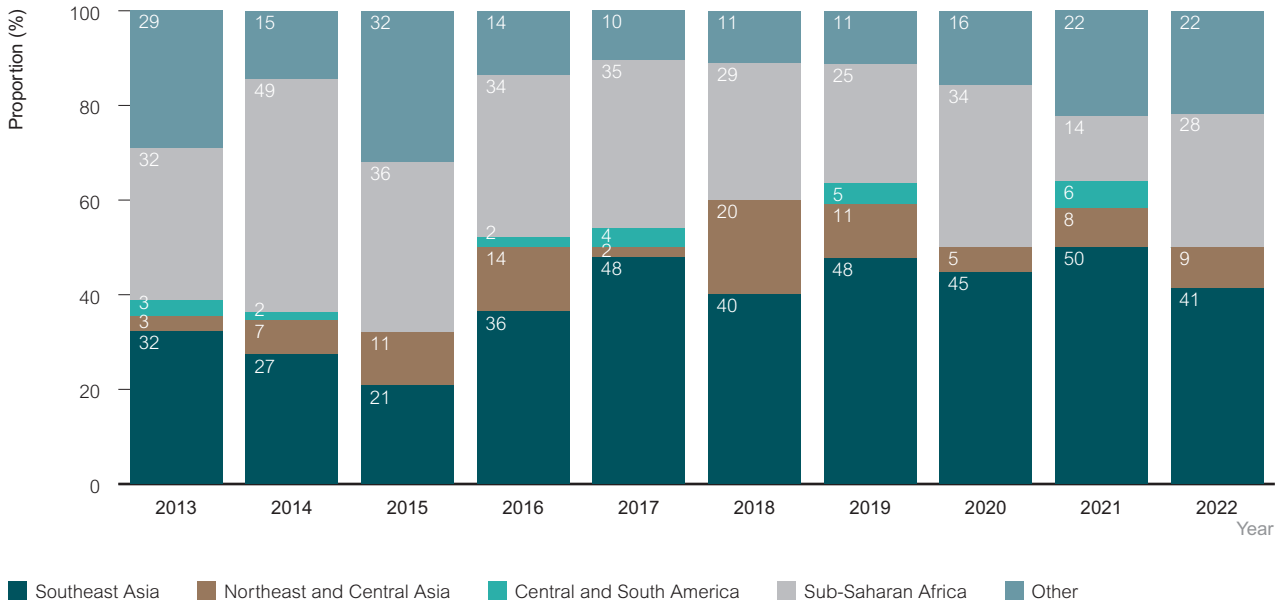
Source: State and territory health authorities, The Sub-Saharan African region of birth does not include South Africa. 'Other region' includes Oceania/Antarctica area, Europe and North Africa and Middle east

Figure 14 Proportion of HIV notifications among men from CALD backgrounds, reporting heterosexual sex as exposure risk, by region of birth, 2013–2022



Source: State and territory health authorities. The SSA region of birth does not include South Africa. 'Other region' include Oceania/Antarctica area, Europe and North Africa and Middle east

Figure 15 Proportion of HIV notifications among women from CALD backgrounds reporting heterosexual sex as exposure risk by region of birth, 2013–2022



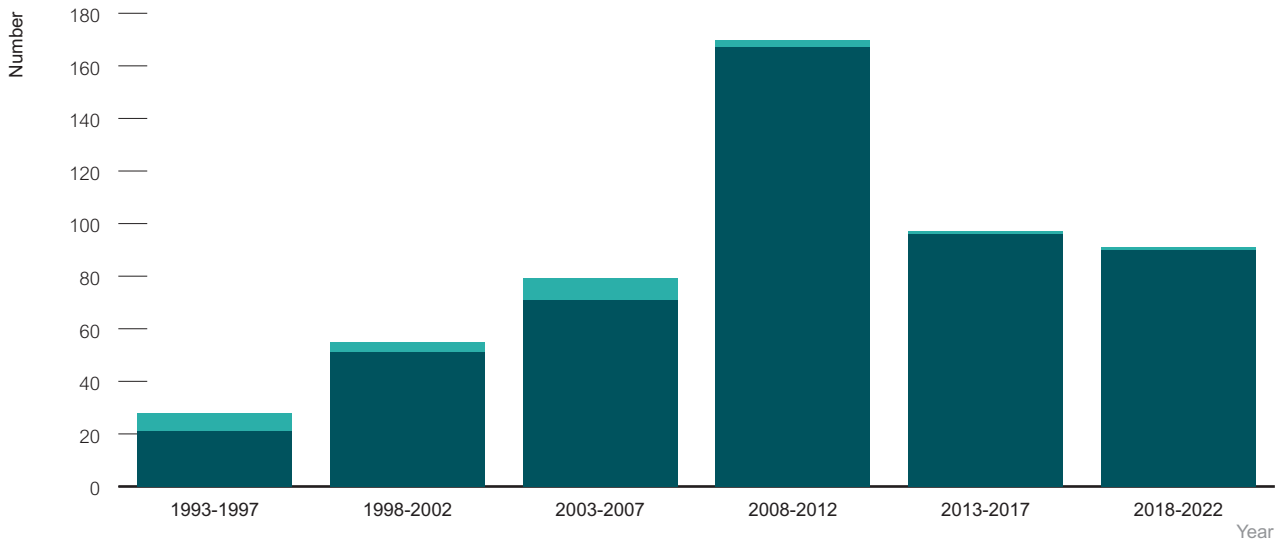
Source: State and territory health authorities. The SSA region of birth does not include South Africa. 'Other region' include Oceania/Antarctica area, Europe and North Africa and Middle east

Trans and gender diverse people: Between 2013 and 2022, there were 33 HIV notifications among people from CALD backgrounds whose gender was reported as trans or gender diverse. Of these, the median age at diagnosis was 35 years, and 91% of notifications were attributed to transgender sexual contact or transgender sexual contact and injection drug use. Of those with recorded CD4+ T-cell counts taken within three months of diagnosis, 30% were diagnosed late with HIV (indicated by a CD4+ cell count less than 350 cells/μL at diagnosis) (data not shown).

It is likely that these 33 notifications are an underrepresentation of the true number of CALD trans and gender diverse people among those newly diagnosed with HIV, as until 2021, the national HIV notification form only had one variable related to gender which captured if the person is male, female or transgender. This single variable is inadequate as trans and gender diverse people may position 'being trans' as a history or experience, rather than an identity, and consider their gender identity as simply female, male or a non-binary identity. Some trans people connect strongly with their trans experience, whereas others do not. The processes of transition may or may not be part of a trans or gender diverse person's life [33]. Thus, many people who identify as a different gender to what sex they were registered as at birth do not identify as transgender [34]. This means that there is potential for underreporting in the number of CALD transgender people diagnosed with HIV, particularly historically.

Pregnant people: Between 1993 and 2022, 496 cases of perinatal HIV exposure among children born in Australia to overseas born pregnant people living with HIV were reported. For the period 2018–2022, the HIV vertical transmission rate was 1%, compared with 33% in the period 1993–1997 (Figure 16). There have been two reported cases of vertical HIV transmission from 2013 to 2022, in children born in Australia to overseas born pregnant people Please note, the proportion may not be representative as where 'country of birth' of the pregnant people was 'not reported', missing or not known, was excluded from analysis, with 19% of cases not reporting country of birth of the pregnant people

Figure 16 Number of Australian born children perinatally exposed to HIV, with overseas born gestational parent, and proportion HIV-positive by five-years grouping of birth year, 1993–2022



	1993-1997	1998-2002	2003-2007	2008-2012	2013-2017	2018-2022
HIV positive (%)	33%	8%	11%	2%	1%	1%
HIV positive (n)	7	4	8	3	1	1
Perinatally exposed	21	51	71	167	96	90

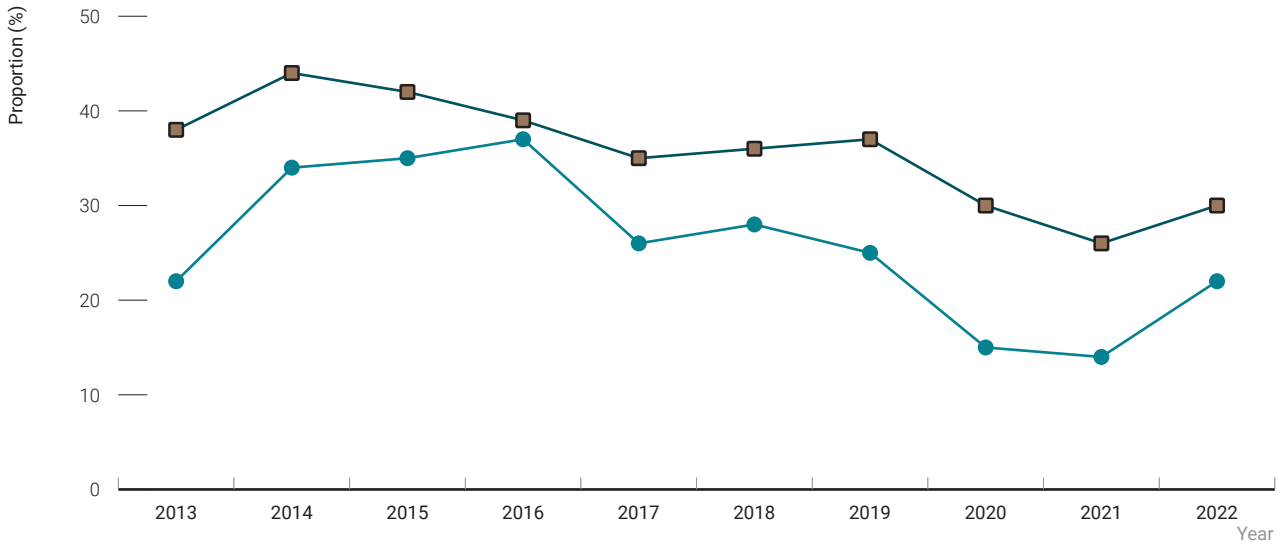
Source: Australian Paediatric Surveillance Unit; Country of birth 'not reported' excluded in analysis

Clinical and immunological markers indicating timing and place of HIV acquisition

HIV notifications classified as newly acquired

For some newly diagnosed HIV notifications, it is possible to determine whether HIV was acquired in the 12 months prior to diagnosis, on the basis of a recent prior negative or indeterminate HIV test and clinical markers. The proportion of all new notifications that were reported to be newly acquired and classified as CALD increased from 22% in 2013 to 25% in 2019. Between 2019 and 2021, the proportion of HIV notifications classified as newly acquired declined from 25% to 14%, increasing again in 2022, to 22% (Table 13, Figure 17). By comparison, the proportion of notifications classified as newly acquired among Australian born was 30% in 2022 (Figure 17). Trends in the proportion of HIV notifications classified as newly acquired need to be interpreted cautiously as rises could reflect increases in regular testing (allowing determination of recent infection) rather than an actual increase in the number of newly acquired infections. When considering these data, it is important to also note that fewer indeterminate results were recorded after 2016 due to changes in testing practices across several jurisdictions. These changes have reduced the number of results which were previously used to provide evidence for newly acquired HIV infections.

Figure 17 The proportion of HIV notifications classified as newly acquired, by CALD classification, in Australia, 2013–2022



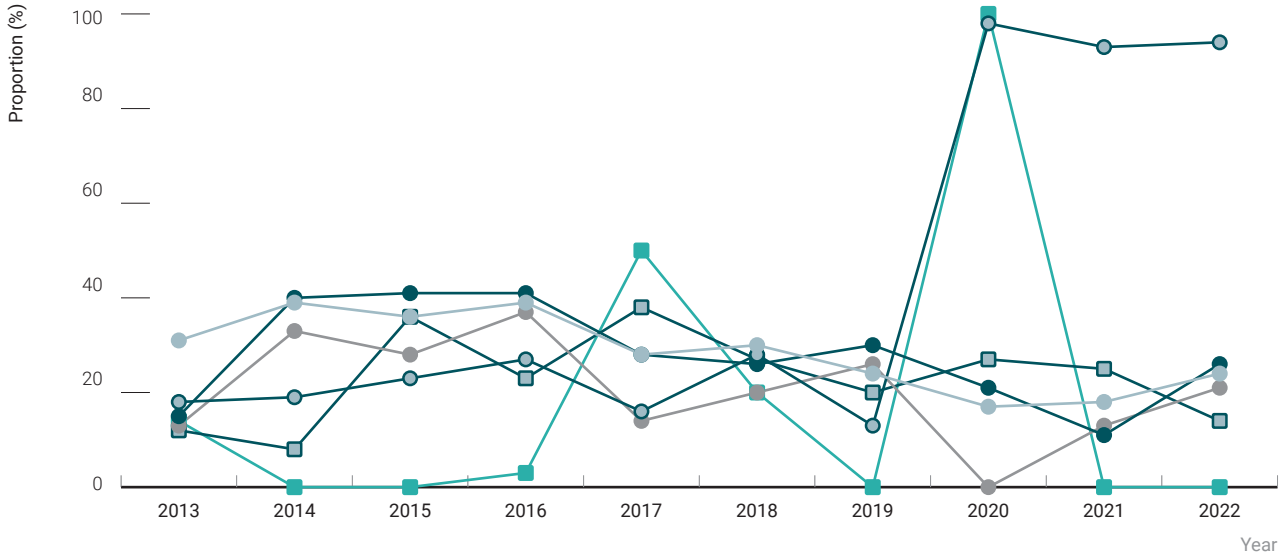
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD (%)	22	34	35	37	26	28	25	15	14	22
Australian born (%)	38	44	42	39	35	36	37	30	26	30

Source: State and territory health authorities

Note: Newly acquired HIV was defined as newly diagnosed infection with a negative or indeterminate HIV antibody test result or a diagnosis of primary HIV within one year before HIV diagnosis.

The proportion of newly acquired HIV notifications in 2022 varied by jurisdiction, with the highest in Queensland (94%) and Victoria/ Tasmania (26%) (Figure 18).

Figure 18 The proportion of HIV notifications among people from CALD backgrounds classified as newly acquired by State and Territory,



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ACT/NSW	31	39	36	39	28	30	24	17	18	24
NT	14	0	0	3	50	20	0	100	0	0
QLD	18	19	23	27	16	28	13	98	93	94
SA	12	8	36	23	38	27	20	27	25	14
VIC/TAS	15	40	41	41	28	26	30	21	11	26
WA	13	33	28	37	14	20	26	0	13	21

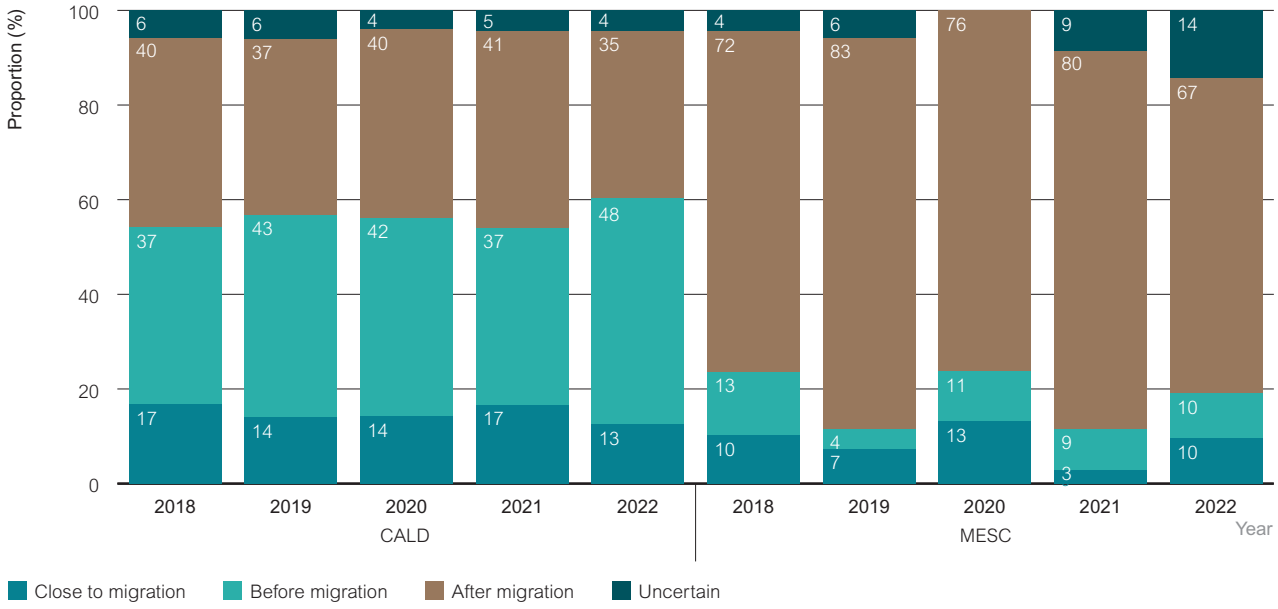
Source: State and territory health authorities. ACT and Tasmania proportions are presented together with NSW and Victoria, respectively, as numbers for ACT and Tasmania were less than <5 for all years.

Likely place of HIV acquisition

Monitoring the likely place of HIV acquisition and HIV subtype can provide information to enhance understanding of the potential influence of travel and migration on HIV diagnosis trends. Using HIV notification data of migrants to Australia, timing of HIV acquisition relative to date of migration to Australia can be estimated [35].

In 2022, nearly half (48%) of HIV notifications among people from CALD backgrounds were likely to have been acquired before migrating to Australia. Among people born in main-English speaking countries, 67% of HIV notifications in 2022 were likely to be acquired after migration to Australia (Figure 19).

Figure 19 Timing of acquisition among people from CALD backgrounds and people born in main English-speaking countries, 2018–2022



Source: State and territory health authorities

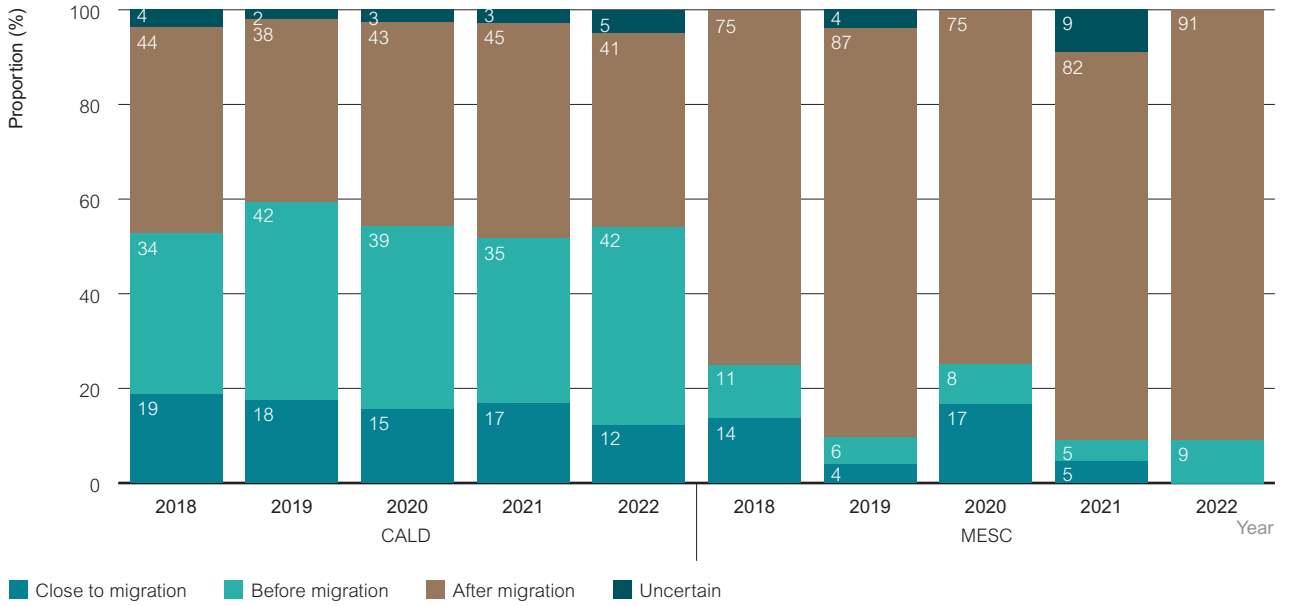
Note: Notifications among people born in main English-speaking countries numbers are low, hence may not be representative of national trend. SA did not report on year of arrival before 2023, hence not included.

Of HIV notifications among people from CALD backgrounds who reported male to male sexual contact as exposure risk, the proportion who likely acquired HIV after migration to Australia was 41% in 2022 (Figure 20). Conversely, among this population, the proportion who likely acquired HIV before migration to Australia fluctuated and increased to 42% in 2022 from 34% in 2018.

Among men born in main English-speaking countries who reported exposure risk as male-to-male sex, the proportion who likely acquired HIV before migration steadily decreased, from 11% in 2018 to 9% in 2022 while the proportion who likely acquired HIV after migration to Australia increased from 75% in 2018 to 91% in 2022 (Figure 20).

Of HIV notifications among people from CALD backgrounds attributed to heterosexual sex, the proportion who likely acquired HIV after migration to Australia remained stable in the last five years and was 32% in 2022. Conversely, the proportion who are likely to acquire HIV before migration to Australia, increased from 46% in 2018 to 55% in 2022. Among people born in main English-speaking countries, the proportion who likely acquired HIV before migration fluctuated between 16% in 2018 and 14% in 2022 (Figure 21).

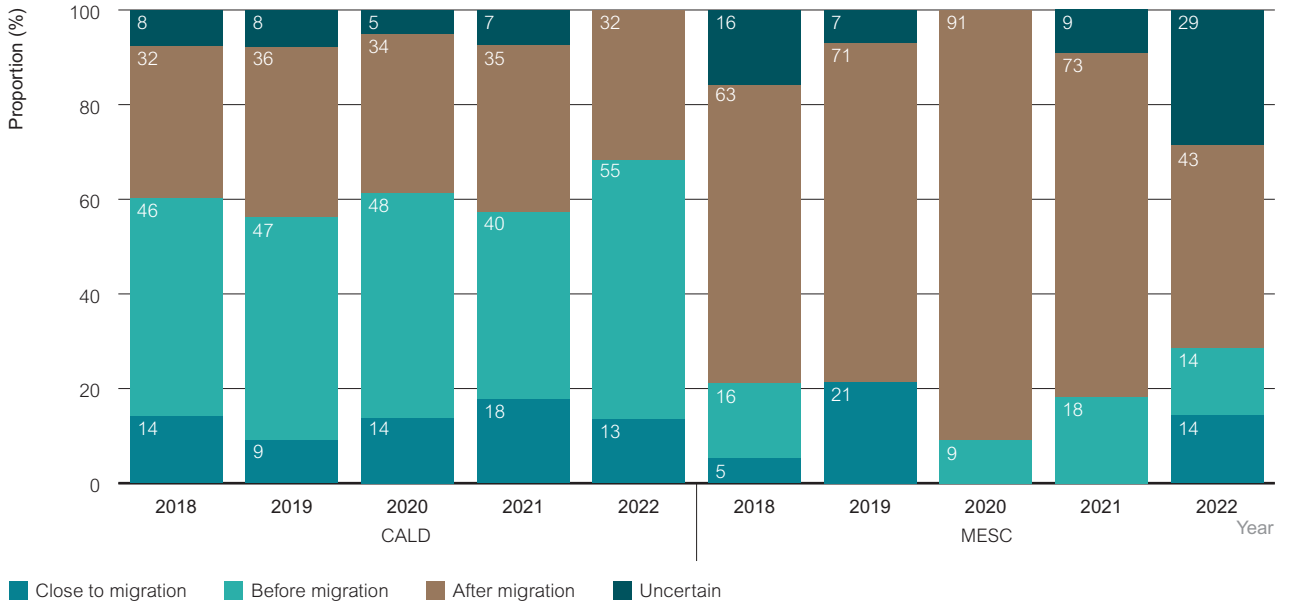
Figure 20 Timing of HIV acquisition in HIV notifications attributed to male-to-male sex among people from CALD backgrounds and people born in main English-speaking countries, 2018–2022



Source: State and territory health authorities

Note: Notifications among people born in main English-speaking countries numbers are low, hence may not be representative of national trend. SA did not report on year of arrival before 2023, hence not included.

Figure 21 Timing of HIV acquisition in HIV notifications attributed to heterosexual sex among people from CALD backgrounds and people born in main English-speaking countries, 2018–2022



Source: State and territory health authorities

Note: Notifications among people born in main English-speaking countries numbers are low, hence may not be representative of national trend. SA did not report on year of arrival before 2023, hence not included.

HIV subtype

HIV subtype has been included in this report as changes in the distribution of subtypes at a population level can inform prevention programs. There are four subtypes of HIV-1 of which M HIV-1 is most dominant and was responsible for the AIDS pandemic. On the basis of genomic sequencing data, M HIV-1 is divided into at least nine subtypes of HIV-1 virus globally. Additionally, different subtypes can combine, creating what is known as a 'circulating recombinant form'. The dominant HIV subtype in the Americas, Western Europe and Australasia is subtype B [(36)]. Subtype C is more common in India and high-prevalence countries of Sub-Saharan Africa [(37)]. The recombinant subtype CRF01 AE is of emerging concern.

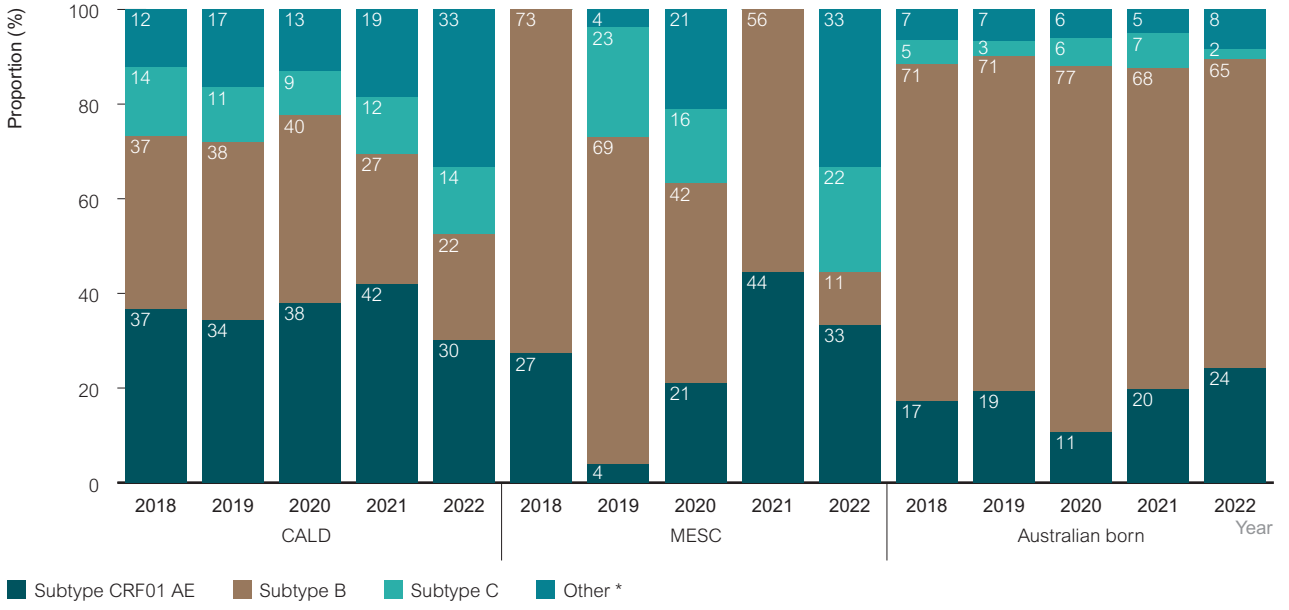
In this report we have included HIV subtype based on HIV notifications with a reported subtype in New South Wales, Victoria and South Australia from 2018 to 2022. These data may not be representative of all new infections Australia-wide, and therefore these figures should be interpreted with caution.

In 2022, for HIV notifications classified as people from CALD backgrounds, most HIV notifications (30%) were subtype CRF01 AE (compared with 22% of non-B subtypes)(Figure 22).

In 2022, HIV notifications among men reporting male to male sexual contact as exposure risk among people from CALD backgrounds, subtype CRF01 AE made up the majority (32%) of notifications, compared with subtype B notifications (28%), with a higher proportion of subtype B among both Australian-born (76%) (Figure 23).

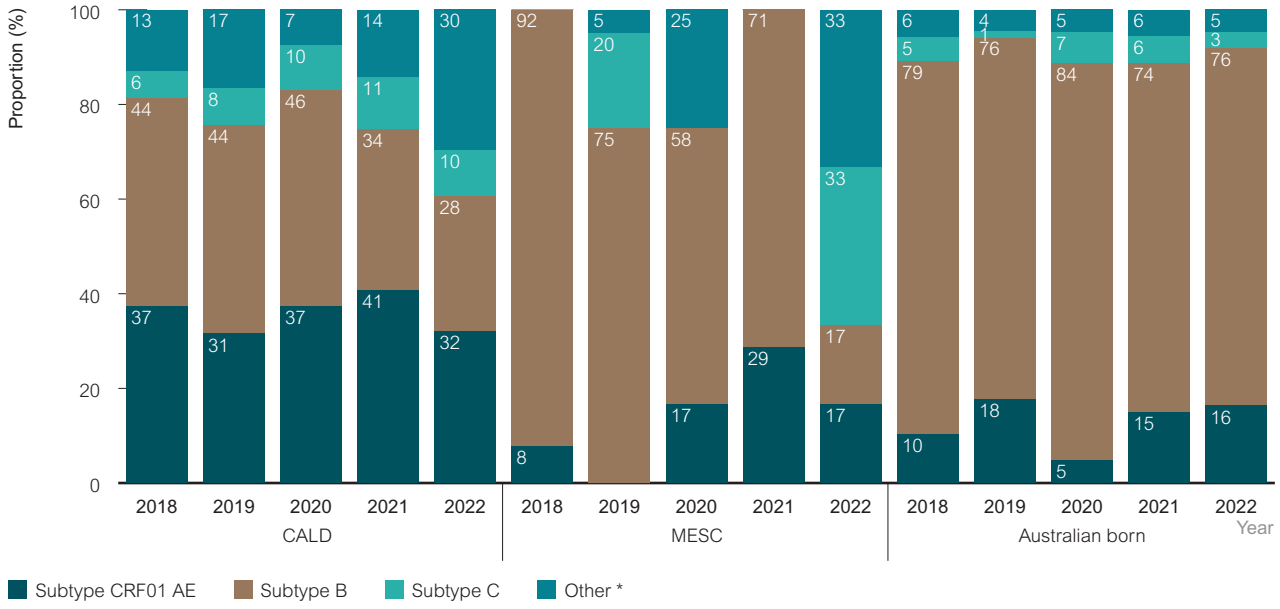
Between 2018 and 2022, for HIV notifications attributed to heterosexual sex, the proportions of subtype CRF01 AE notifications fluctuated between 30% and 44% (Figure 24).

Figure 22 HIV subtype distribution in HIV notifications among people from CALD backgrounds, 2018–2022



Source: State and Territory health authorities,
Note: Includes HIV notifications from only NSW, Victoria and South Australia. * - includes not reported, other CRFs and other recombinations.

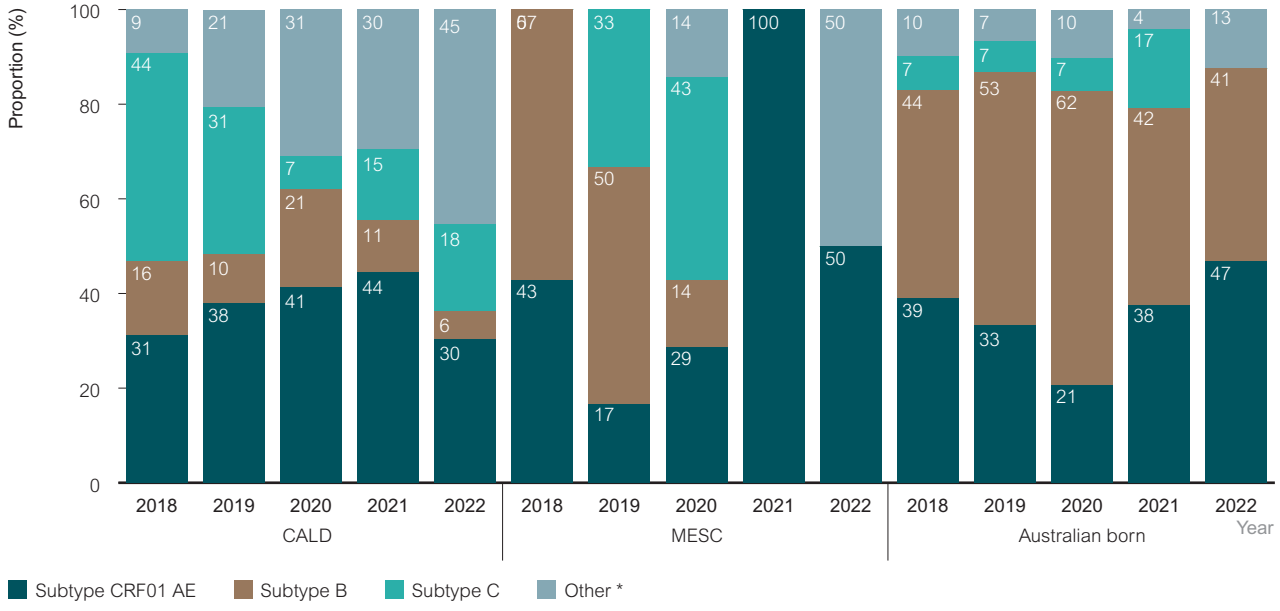
Figure 23 HIV subtype distribution in HIV notifications attributed to men who had sex with men among people from CALD backgrounds and people born in main English-speaking countries, 2018–2022



Source: State and Territory health authorities, NSW NHMRC Partnership Project.

Note: Includes HIV notifications from only NSW, Victoria and South Australia. Excludes notifications where HIV subtype was not reported. * -includes not reported, other CRFs and other recombinations.

Figure 24 HIV subtype distribution in HIV notifications attributed to people from CALD backgrounds who had heterosexual sex as exposure risk , 2018–2022



Source: State and Territory health authorities

Note: Includes HIV notifications from only NSW, Victoria and South Australia. Excludes notifications where HIV subtype was not reported. * -includes not reported, other CRFs and other recombinations.

Late and advanced HIV diagnoses

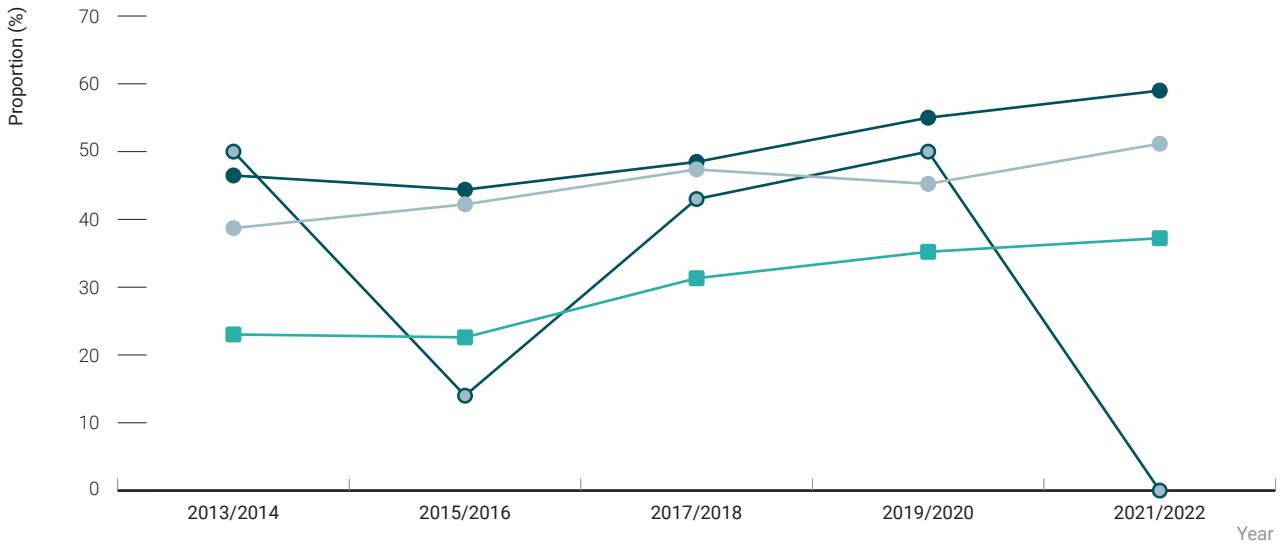
CD4+ cell count at the time of HIV diagnosis can indicate how long a person has been living with HIV before being diagnosed. A CD4+ cell count is above 500 cells/μL in most people without HIV and declines on average by 50 to 100 cells/μL per year in people with HIV [38]. Late HIV diagnosis is defined as CD4+ cell count less than 350 cells/ μL at diagnosis without evidence of = newly acquired HIV. Advanced HIV is defined as newly diagnosed HIV with a CD4+ cell count of less than 200 cells/μL without evidence of newly acquired HIV.

The proportion of newly diagnosed HIV cases among people from CALD backgrounds with a late diagnosis increased from 41% in 2013 to 52% in 2022 (see Table 13). The proportion of newly diagnosed HIV cases among people from CALD backgrounds with an advanced diagnosis was 32% in 2022 (Table 13). The proportion of newly diagnosed HIV cases among Australian born people with a late and advanced diagnosis was 36% and 25% respectively, in 2022 [39] (data not shown).

Late HIV diagnoses by key characteristics and exposure category

By exposure category, condensed into two-year groups to account for small numbers of notifications, late diagnoses attributed to heterosexual sex, male-to-male sex and injection drug use have fluctuated. For the years 2021/2022 and for diagnoses attributed to heterosexual sex and people reporting sex with both men and women (including injection drug use), the proportions diagnosed late remain high at 59% and 51%, respectively (Figure 25). Please note there were no cases among people from CALD backgrounds diagnosed late attributed to injection drug use in 2021/2022.

Figure 25 Proportion of late diagnoses among people from CALD backgrounds by selected exposure category, 2013–2022



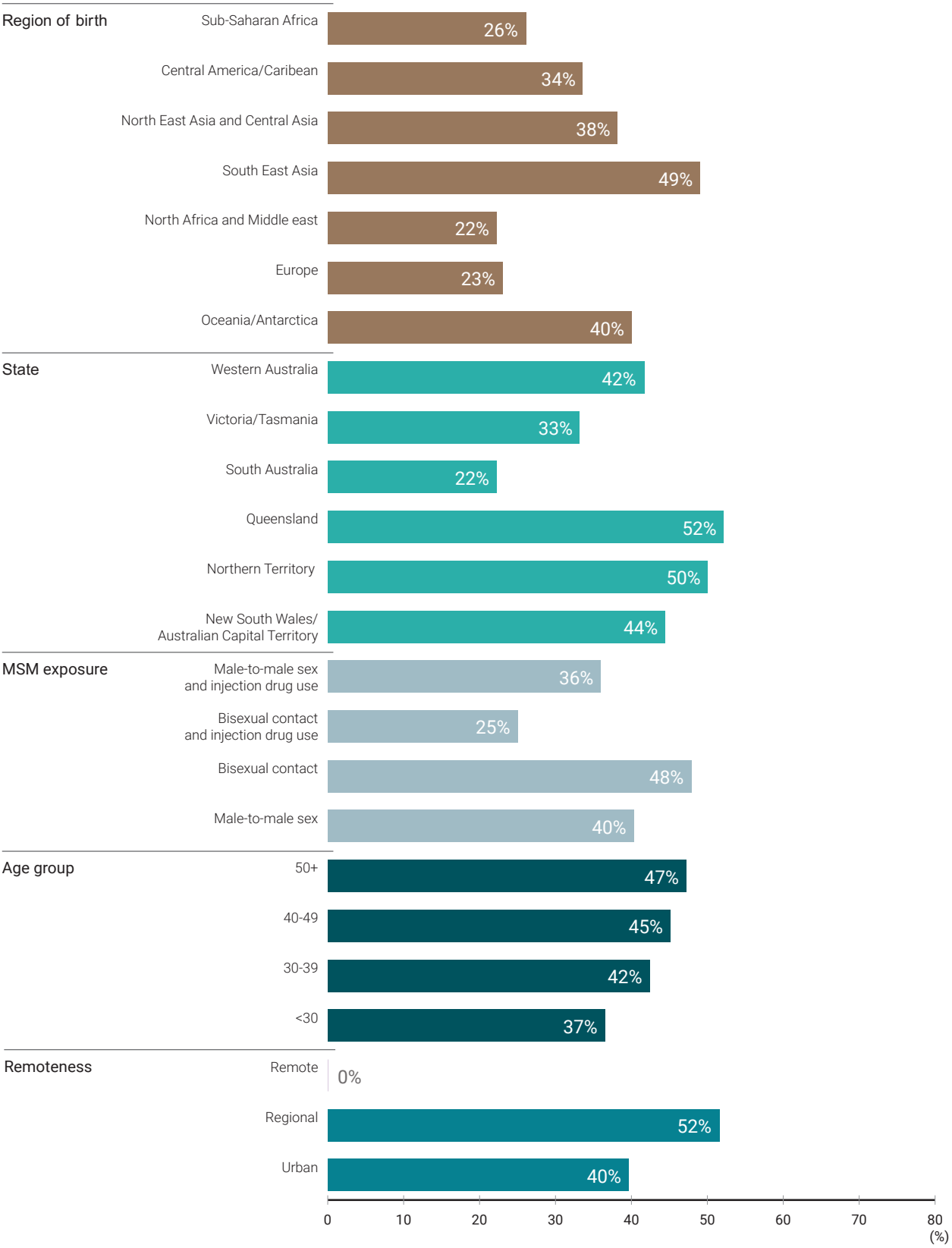
	2013/2014	2015/2016	2017/2018	2019/2020	2021/2022
Male-to-male sex and male-to-male sex and injection drug use (%)	23	23	31	35	37
Sex with both men and women (%)	39	42	47	45	51
Heterosexual sex (%)	46	44	48	55	59
Injection drug use (%)	50	14	43	50	0

Source: State and territory health authorities

Note: Late HIV diagnosis was defined as new HIV diagnoses with a CD4+ cell count of less than 350 cells/μL. Newly acquired HIV was not categorised as late or advanced diagnoses irrespective of CD4+ cell count. Notifications without a CD4+ cell count available were excluded.

Among HIV notifications attributed to male-to-male sex among people from CALD backgrounds for the years 2018 to 2022 (n=891), late diagnosis was more common among men who reported sex only with men and women (48%), men aged 50+ years (n=72, 47%), men born in Southeast Asia (49%), and men living in regional areas (52%) (Figure 26).

Figure 26 Proportion of late HIV diagnoses among men from CALD backgrounds reporting an exposure category as male-to-male sex by subcategory, 2018–2022 (n = 891)

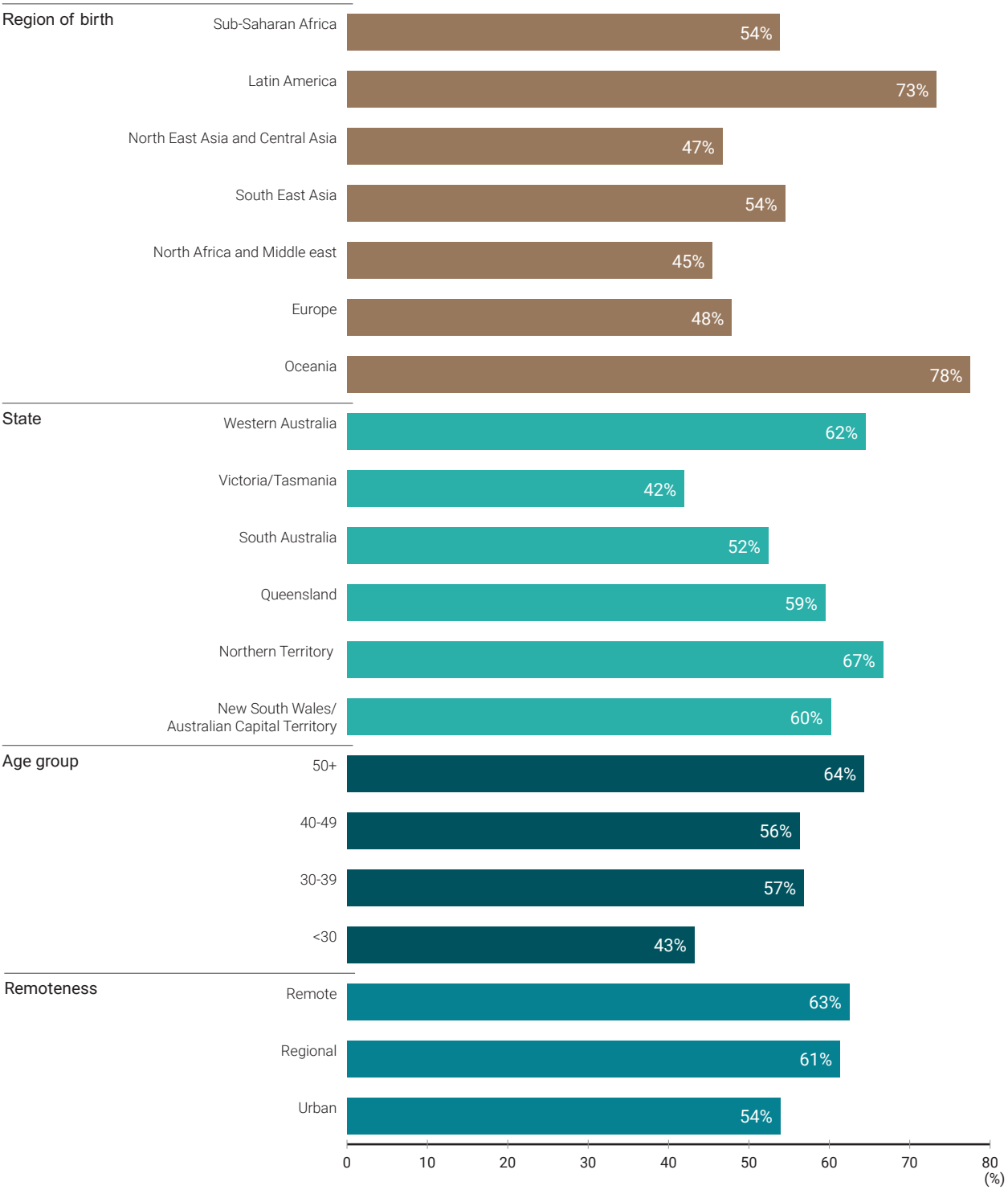


Source: State and territory health authorities.

Note: Late HIV diagnosis was defined as an HIV notification with a CD4+ cell count of less than 350 cells/μL. Newly acquired HIV was categorised as neither late or advanced diagnoses, irrespective of CD4+ cell count. Notifications without a CD4+ cell count recorded within three months of diagnosis were excluded. The SSA region of birth does not include South Africa, Europe does not include UK and Ireland. Due to small number of HIV notifications among people from CALD backgrounds in ACT and Tas, number are merged with NSW and Victoria respectively. The number of notifications for NT are low hence should be interpret with caution.

A high proportion of late diagnoses were reported among people from CALD backgrounds with heterosexual sex as an exposure risk, for 2018–2022(n=398) with variation by key demographic characteristics and HIV risk exposure (Figure 27).

Figure 27 Proportion of late HIV diagnoses among people from CALD backgrounds reporting heterosexual sex as risk exposure, by subcategory, 2018–2022 (n = 398)



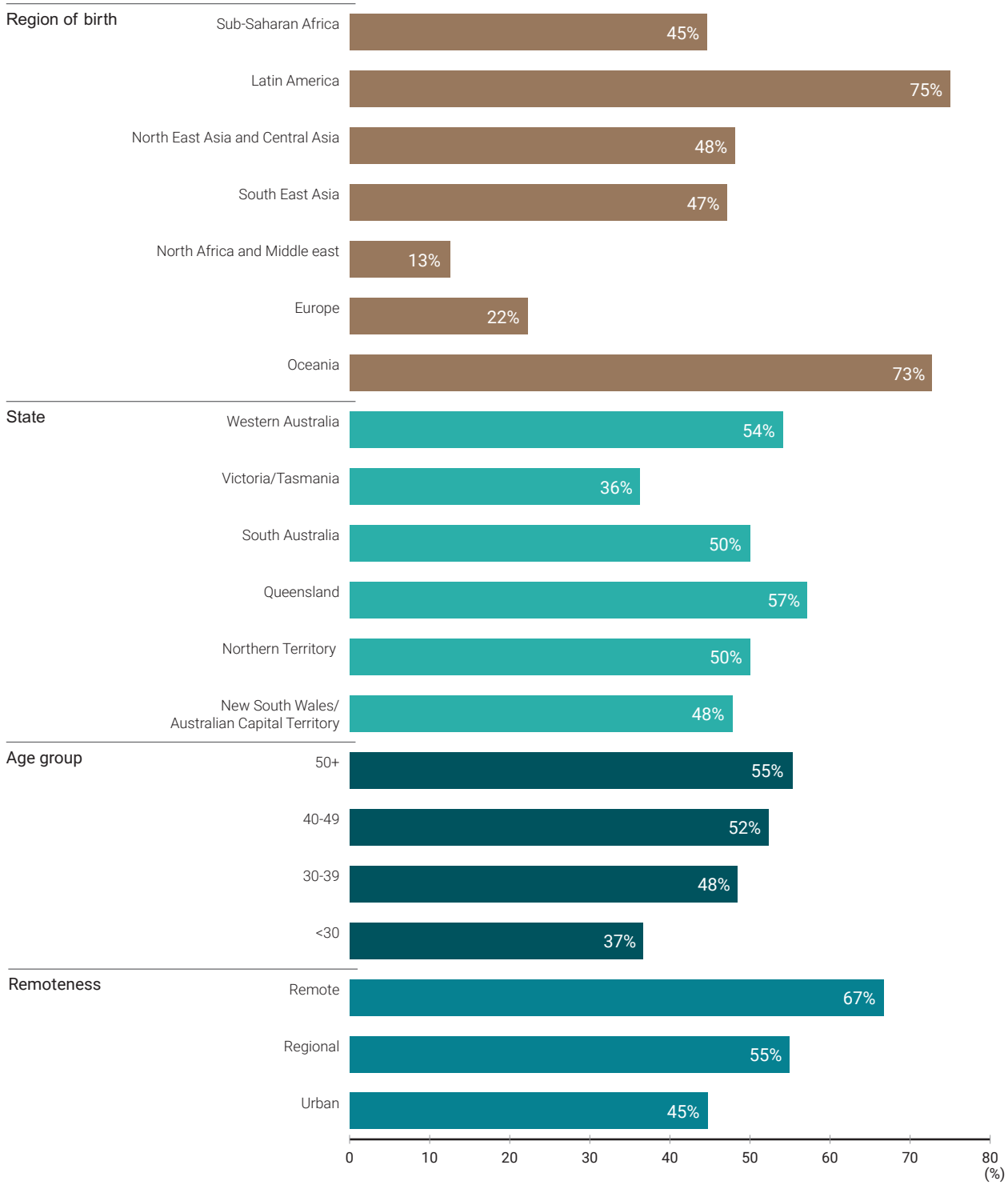
Source: State and territory health authorities.

Note: Late HIV diagnosis was defined as an HIV notification with a CD4+ cell count of less than 350 cells/μL. Newly acquired HIV was categorised as neither late or advanced diagnoses, irrespective of CD4+ cell count. Notifications without a CD4+ cell count recorded within three months of diagnosis were excluded. The SSA region of birth does not include South Africa, Europe does not include UK and Ireland. Due to small number of HIV notifications among people from CALD backgrounds in ACT and Tas, number are merged with NSW and Victoria respectively. The number of notifications for NT are low hence should be interpret with caution.

Late HIV diagnoses by key characteristics and gender category

Among HIV notifications in females from CALD backgrounds for the years 2018 to 2022 (n=239), late diagnosis was more common among females aged 50+ years (n=21, 55%), females born in Central America (n=<5, 75%), and females living in remote areas (n=<5, 67%) (Figure 28). The number of notifications among females from CALD backgrounds is low and hence interpreted with caution.

Figure 28 Proportion of late HIV diagnoses among females from CALD backgrounds by subcategory, 2018–2022 (n = 239)

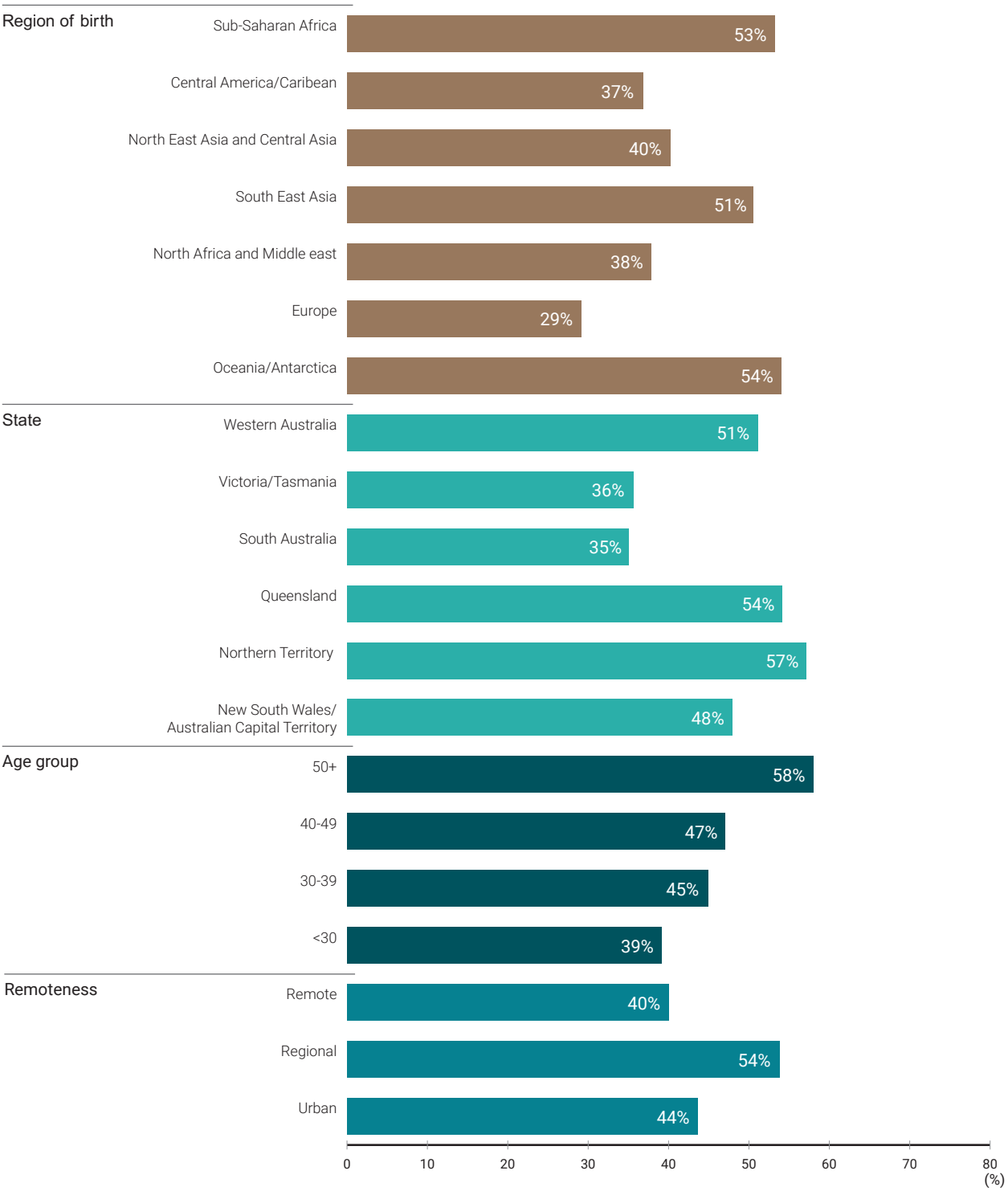


Source: State and territory health authorities.

Note: Late HIV diagnosis was defined as an HIV notification with a CD4+ cell count of less than 350 cells/μL. Newly acquired HIV was categorised as neither late or advanced diagnoses, irrespective of CD4+ cell count. Notifications without a CD4+ cell count recorded within three months of diagnosis were excluded. The SSA region of birth does not include South Africa, Europe does not include UK and Ireland. Due to small number of HIV notifications among people from CALD backgrounds in ACT and Tas, number are merged with NSW and Victoria respectively. The number of notifications for NT are low hence should be interpret with caution.

Among HIV notifications in males from CALD backgrounds for the years 2018 to 2022 (n=1143), late diagnosis was more common among males aged 50+ years (n=80, 58%), males born in Sub Saharan Africa (n=41, 53%) and Southeast Asia (n=240, 51%), and males living in regional areas (n=50, 54%) (Figure 29).

Figure 29 Proportion of late HIV diagnoses among males from CALD backgrounds by subcategory, 2018–2022 (n = 1143)



Source: State and territory health authorities.

Note: Late HIV diagnosis was defined as an HIV notification with a CD4+ cell count of less than 350 cells/μL. Newly acquired HIV was categorised as neither late or advanced diagnoses, irrespective of CD4+ cell count. Notifications without a CD4+ cell count recorded within three months of diagnosis were excluded. The SSA region of birth does not include South Africa, Europe does not include UK and Ireland. Due to small number of HIV notifications among people from CALD backgrounds in ACT and Tas, number are merged with NSW and Victoria respectively. The number of notifications for NT are low hence should be interpret with caution.

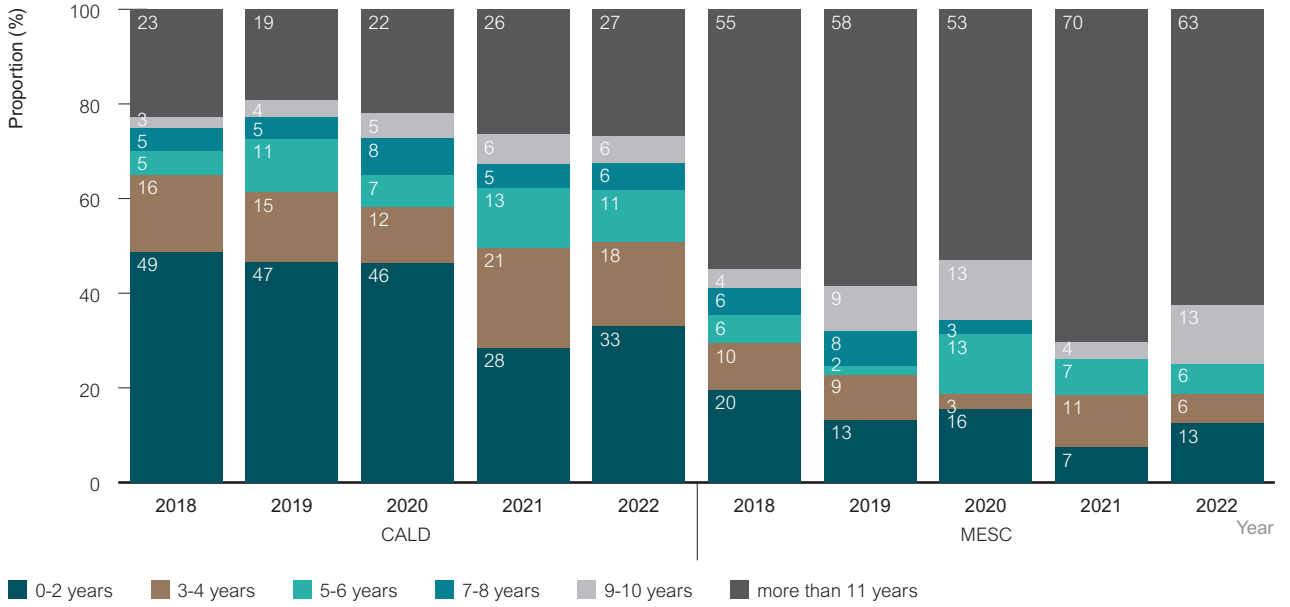
Time to diagnosis after arrival in Australia

Data on year of arrival are available from 2018 onwards. In 2018, 49% of HIV notifications classified as people from CALD backgrounds were diagnosed in the first two years of arrival in Australia, decreasing to 33% in 2022. People born in main English-speaking countries were diagnosed after a longer time in Australia, with 63% diagnosed with HIV 11 years or more since arrival in Australia in 2022 (Figure 30).

A third (35%) of HIV notifications classified as CALD and reporting male-to-male sex as exposure were diagnosed in the first two years of arrival in Australia in 2022, as compared to 10% of people born in the main English-speaking countries (Figure 31).

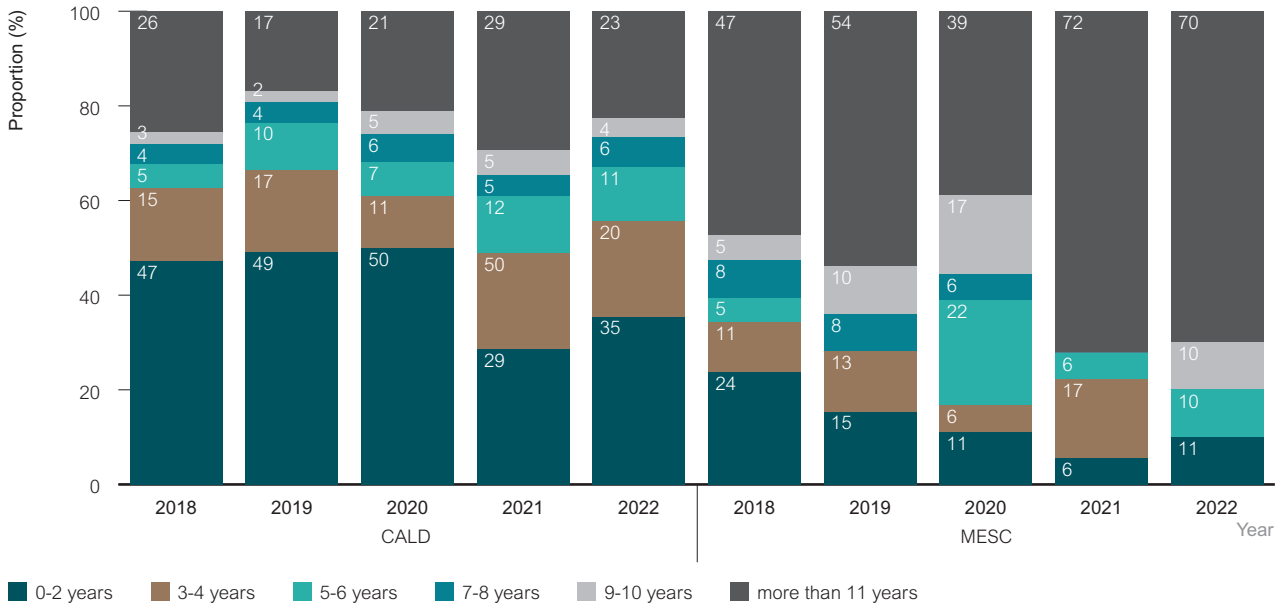
Among notifications attributed to heterosexual contact, over a quarter (31%) of those classified as CALD were diagnosed in the first two years after arrival in Australia in 2022, and 33% were diagnosed after 11 years (Figure 32).

Figure 30 Proportion of HIV diagnosis by time (years) from arrival in Australia to diagnosis, 2018–2022 among people from CALD backgrounds



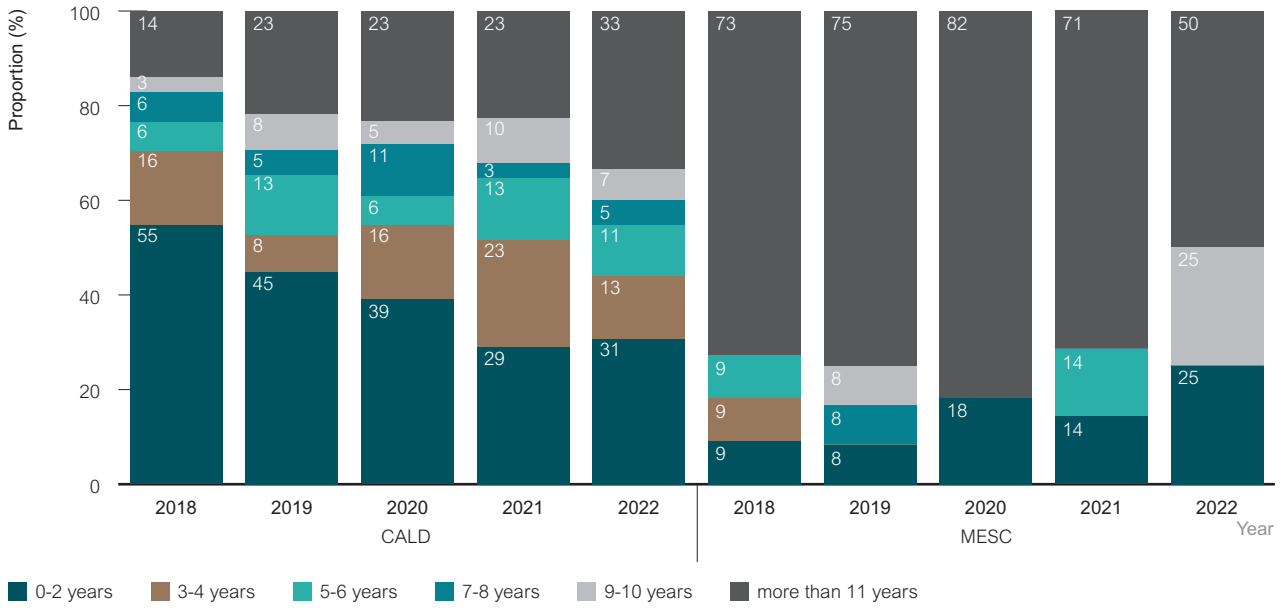
Source: State and territory health authorities.
Note: Notifications with missing ' year of arrival' were excluded from analysis. SA did not collect year of arrival before 2023 hence not included in this chart.

Figure 31 Proportion of HIV diagnosis by time (years) from arrival to diagnosis among men who have sex with men, 2018–2022 among people from CALD backgrounds



Source: State and territory health authorities.
Note: Notifications with missing ' year of arrival' were excluded from analysis

Figure 32 Proportion of HIV diagnosis by time to diagnosis among notifications among people who have heterosexual sex, 2018–2022 among people from CALD backgrounds

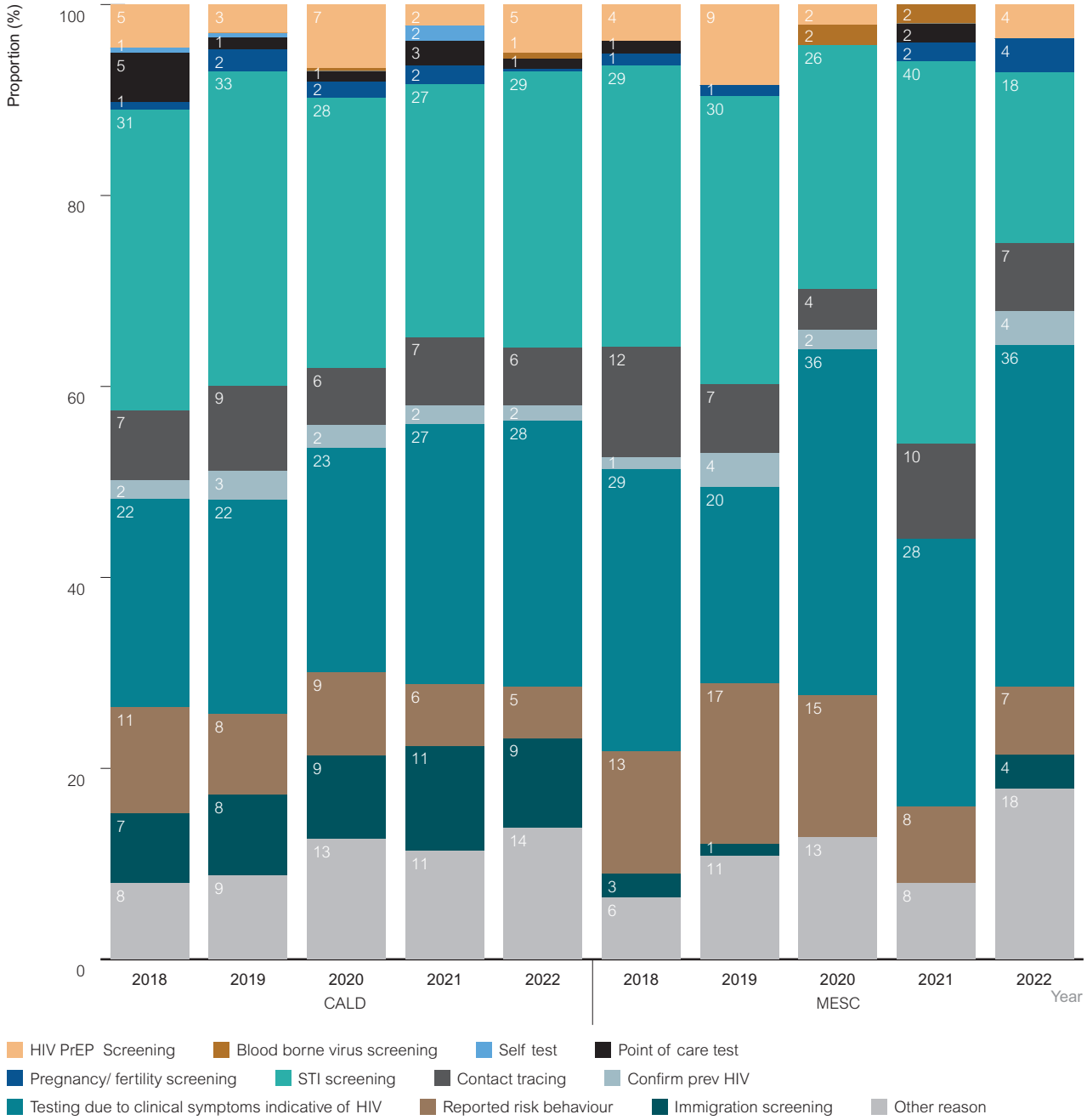


Source: State and territory health authorities.
Note: Notifications with missing ' year of arrival' were excluded from analysis

Reasons for testing

In 2022, the top three reasons for HIV testing in HIV notifications among people from CALD backgrounds were: testing for STIs (29%), due to having clinical symptoms 28%), and testing for immigration purposes (11%) (Figure 33). People born in main English-speaking countries were tested for HIV due to having clinical symptoms (36%) and testing for STIs (18%). Please note the categories for reasons of testing are not mutually exclusive.

Figure 33 Proportion of HIV notifications among people from CALD backgrounds, by reasons for testing, 2018–2022



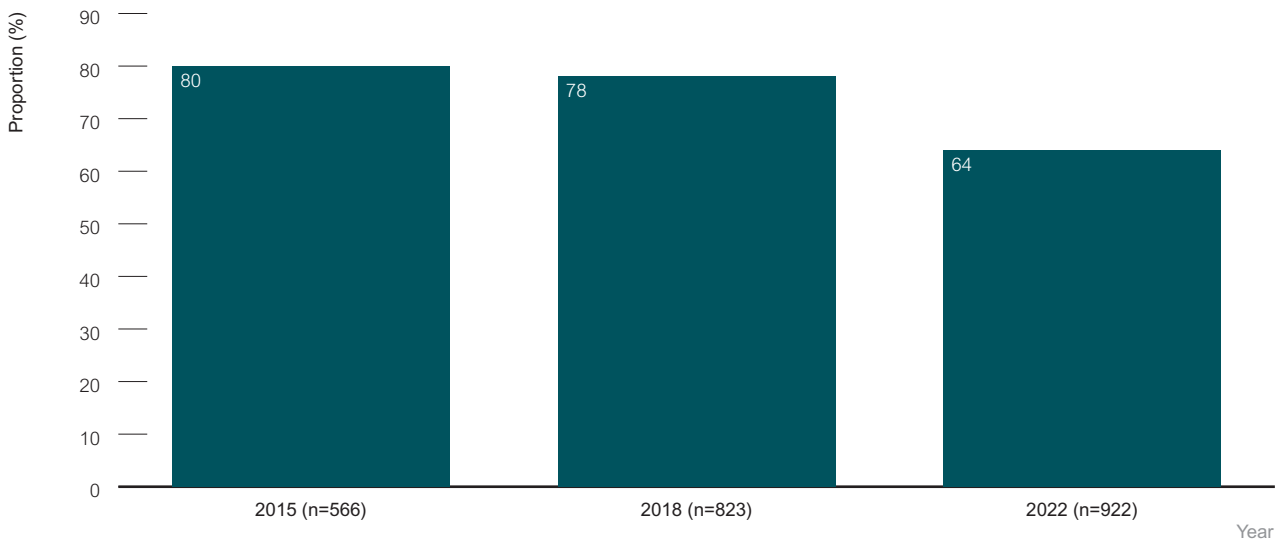
Source: State and territory health authorities.

HIV testing

National testing guidelines recommend HIV testing in a number of contexts, such as according to exposure risk, alongside chlamydia and gonorrhoea tests, during antenatal care and for particular priority populations [7]. Guidelines recommend all sexually active men who have sex with men in the previous three months should be tested every three months [8].

Behavioural surveys show the proportion of people tested in a year in Australia among selected priority populations. In the Asian gay men's community survey 2022, the proportion of non-HIV-positive gay and bisexual men who reported having had an HIV test in the 12 months prior to the surveys dropped from 80% in 2015–16 to 64% (n=922) in 2021. This decrease is likely due to the impacts of the COVID-19 pandemic (Figure 34). Please note that online components were included in Melbourne and Sydney sites since 2015–16 round of data collection, however offline interviews were conducted in Sydney for the 2015–16 round of surveys. For the 1999 and 2002 round of surveys, data were collected only offline, hence not comparable and not presented in this report.

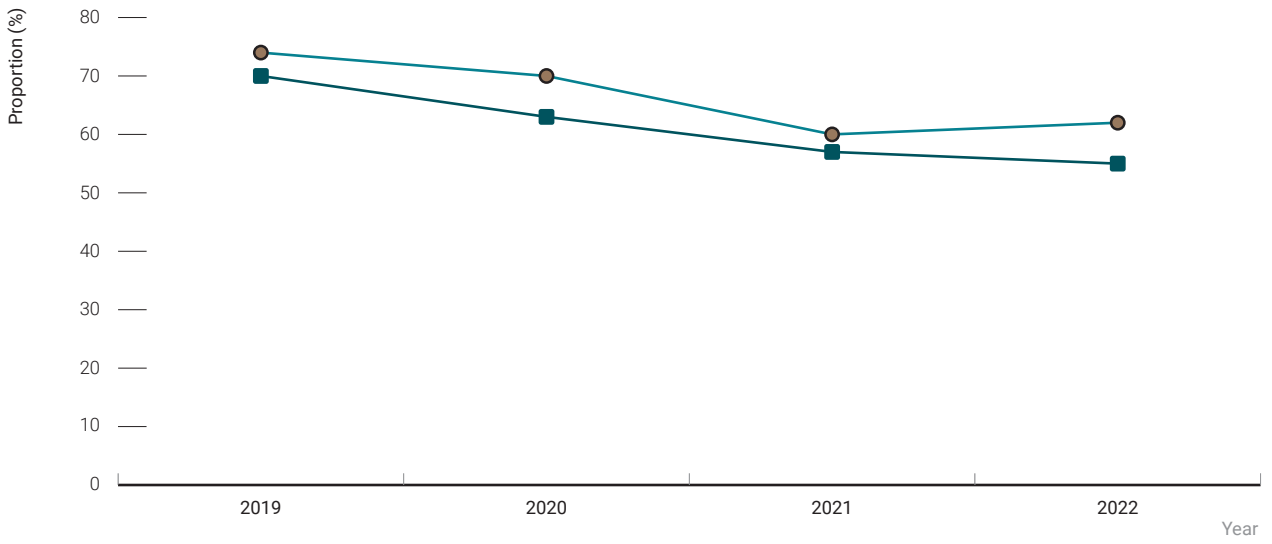
Figure 34 Proportion of non-HIV-positive Asian gay and bisexual men tested for HIV in the 12 months prior to completing the last three surveys



Source: Asian gay men's community surveys series

According to data from the GCPS, 62% of non-HIV-positive men classified as CALD were tested for HIV in the previous year, representing a decline of 16% from 74% from 2019 (Figure 35).

Figure 35 Proportion of non-HIV-positive gay and bisexual men tested for HIV in the 12 months prior to completing the GCPS, 2022

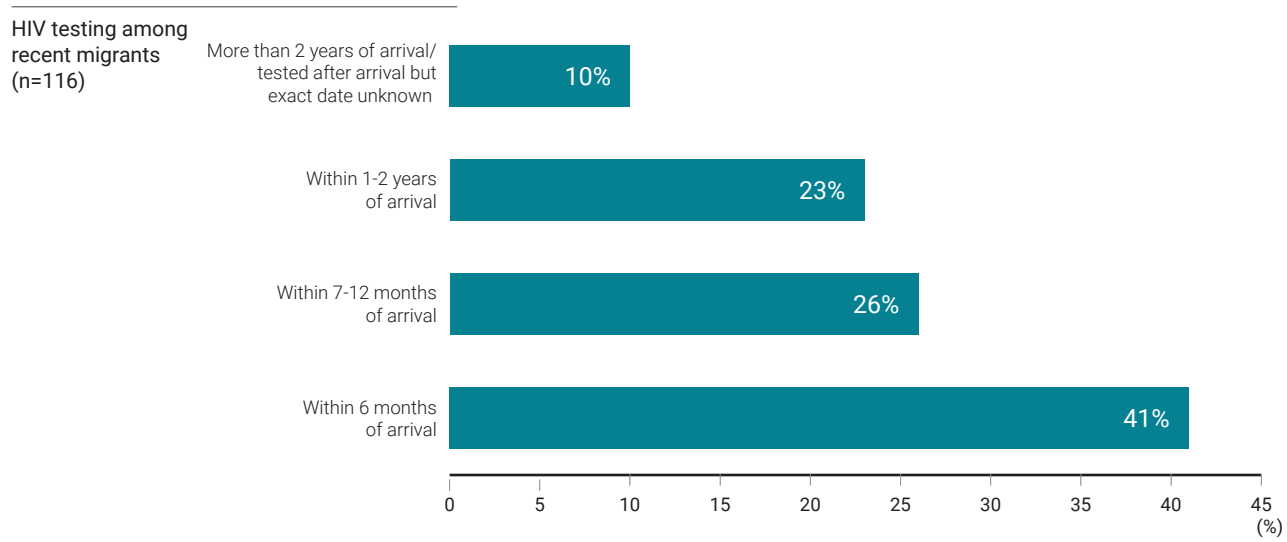


	2019	2020	2021	2022
HIV testing among CALD (%)	74	70	60	62
HIV testing among non-CALD (%)	70	63	57	55

Source: GCPS. Non-CALD includes people born in Australia and main English-speaking countries classified using country of birth variable

Among recent migrants (people who arrived in Australia in the last 5 years) who were ever tested in Australia (n=116), 41% were tested for HIV within 6 months of arrival, according to the Asian gay men's community survey 2021 data and 90% were tested within the first two years of arrival in Australia (Figure 36).

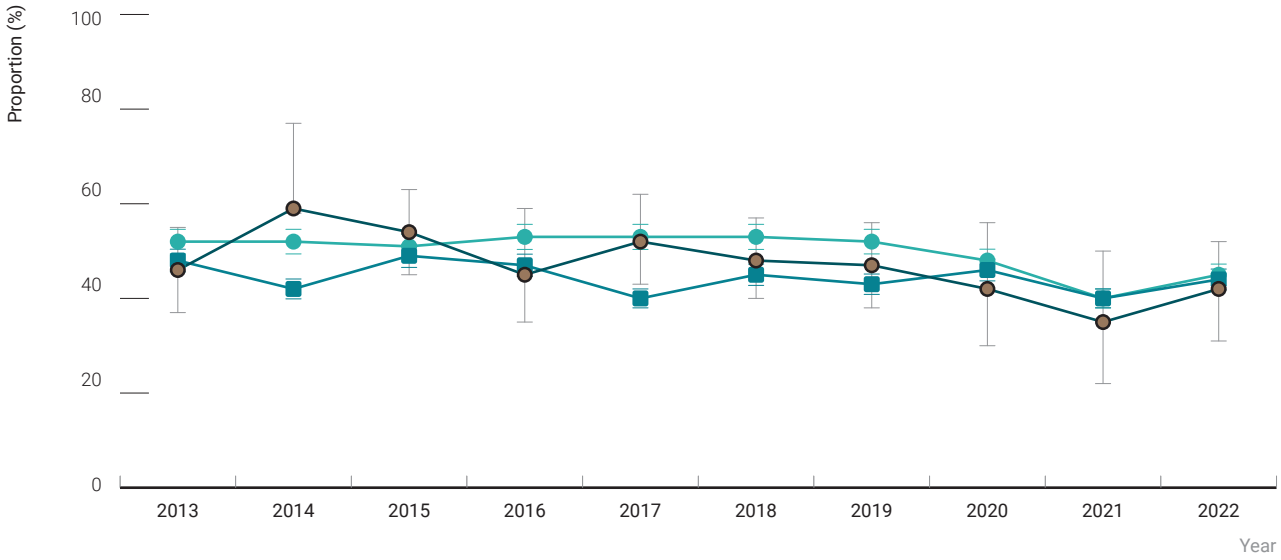
Figure 36 HIV testing among recently arrived (<5 years) Asian gay men, (the 2021 round)



Source: Asian gay men's community survey 2021

Based on data from the Australian Needle Syringe Program Survey, in 2022, 42% (38/91; 95% CI: 31%, 52%) of people from CALD backgrounds who inject drugs attending needle and syringe programs self-reported having had an HIV test in the 12 months prior to the survey (Figure 37). The proportion was slightly lower among people who were born in Australia (45%, 668/1487; 95% CI: 42%, 47%) or other English-speaking countries (44%, 52/117; 95% CI: 35%, 53%), for most years in the ten-year period 2013 to 2022, however the differences were not significant (p=0.949). The number of participants in the 2020, 2021 and 2022 Australian Needle Syringe Program Survey were lower than in previous years due to the impacts of the COVID-19 pandemic and trends over time should be interpreted with caution.

Figure 37 Proportion of people from CALD backgrounds who inject drugs attending needle and syringe programs who reported an HIV test in the past 12 months, 2013–2022



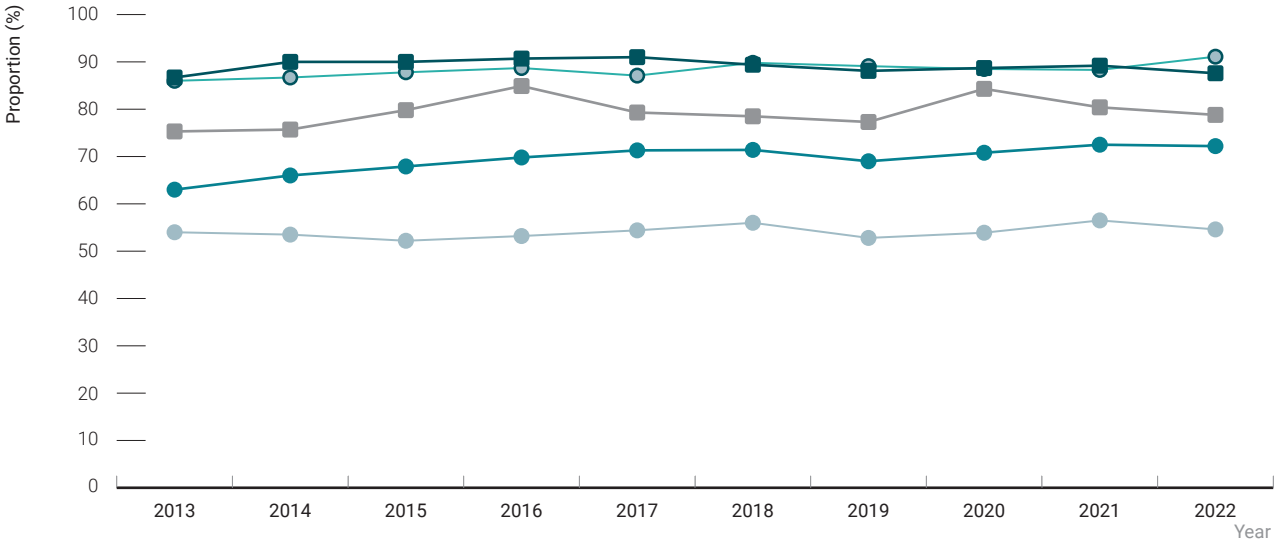
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD (%)	46	59	54	45	52	48	47	42	35	42
Main English speaking countries (%)	48	42	49	47	40	45	43	46	40	44
Australian born (%)	52	52	51	53	53	53	52	48	40	45

Source: Australian Needle Syringe Program Survey (ANSPS)

At 50 sentinel sexual health clinics across Australia participating in the ACCESS network between 2013 and 2022 the proportion of people from CALD backgrounds who were tested for HIV at least once in the previous 12 months fluctuated between 63% in 2013 and 72% in 2022 (Figure 37). Among gay and bisexual men attending sexual health clinics, the proportion who were tested for HIV at least once in a year remained stable and was 88% in 2022 (Figure 38).

Among other priority populations attending sexual health clinics participating in the ACCESS network, the proportion of female sex workers who were tested for HIV at least once in a year increased from 86% in 2013 to 91% in 2022 (Figure 37). In 2022, among people attending sexual health clinics who were recorded as recent injection drugs users, 79% received an HIV test in the previous twelve months. Among young heterosexuals attending sexual health clinics, 55% received an HIV test in the previous 12 months in 2022 (Figure 38).

Figure 38 Proportion of sexual health clinics attendees tested for HIV in a year by priority population, 2013–2022

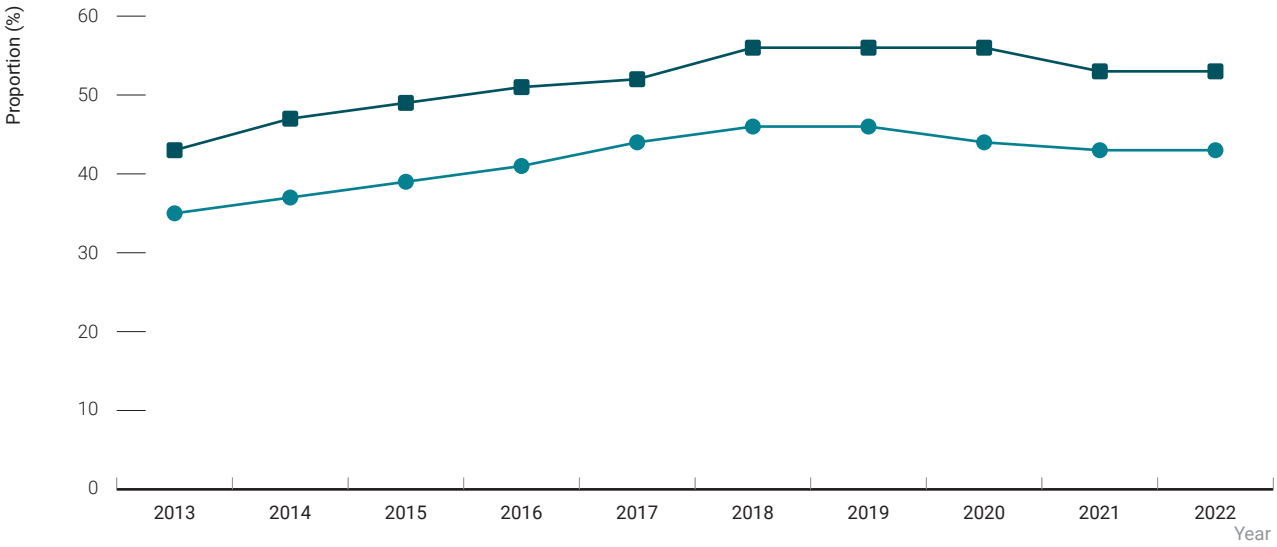


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
All CALD (%)	63	66	68	70	71	71	69	71	73	72
CALD Gay and bisexual men (%)	87	90	90	91	91	89	88	89	89	88
CALD Injecting drug usage (%)	75	76	80	85	79	79	77	84	80	79
CALD Female sex workers (%)	86	87	88	89	87	90	89	89	88	91
CALD Heterosexual aged 16-29 years (%)	54	54	52	53	54	56	53	54	57	55

Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance)
Note: High-caseload general practice clinics had country of birth completeness below 45% and hence data not analyzed.

Re-testing: Among people classified as CALD attending sexual health clinics, the proportion who had a repeat HIV test within 13 months of a previous HIV test increased from 43% in 2013 to 56% in 2019 and then declined to 53% in 2022. In this period, the proportion retested within seven months of a previous HIV test increased from 35% in 2013 to 46% in 2019 and then declined to 43% in 2022 (Figure 39).

Figure 39 HIV retesting among people from CALD backgrounds attending sexual health clinics, 2013–2022

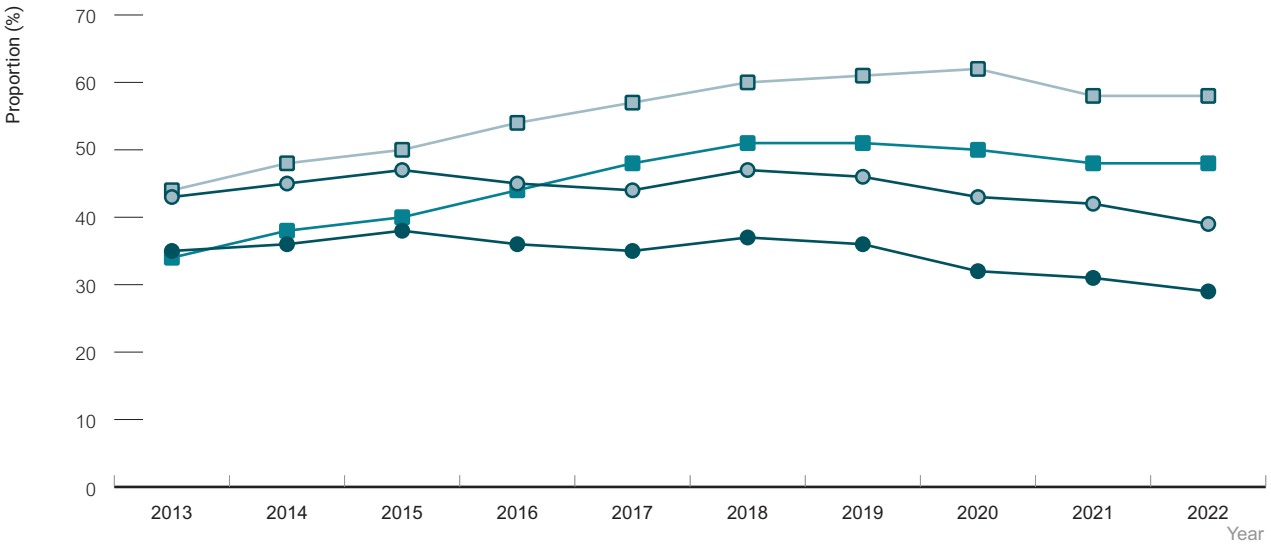


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Re-tested at 1-7 months (%)	35	37	39	41	44	46	46	44	43	43
Re-tested at 1-13 months (%)	43	47	49	51	52	56	56	56	53	53

Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance)

The re-testing rate at both 7 months and 13 months was higher among males as compared to their female counterparts (48% and 59% in males at 7 months and 13 months in 2022 respectively as compared to 28% and 39% among females) (Figure 40).

Figure 40 HIV retesting among people from CALD backgrounds attending sexual health clinics, by gender, 2013–2022

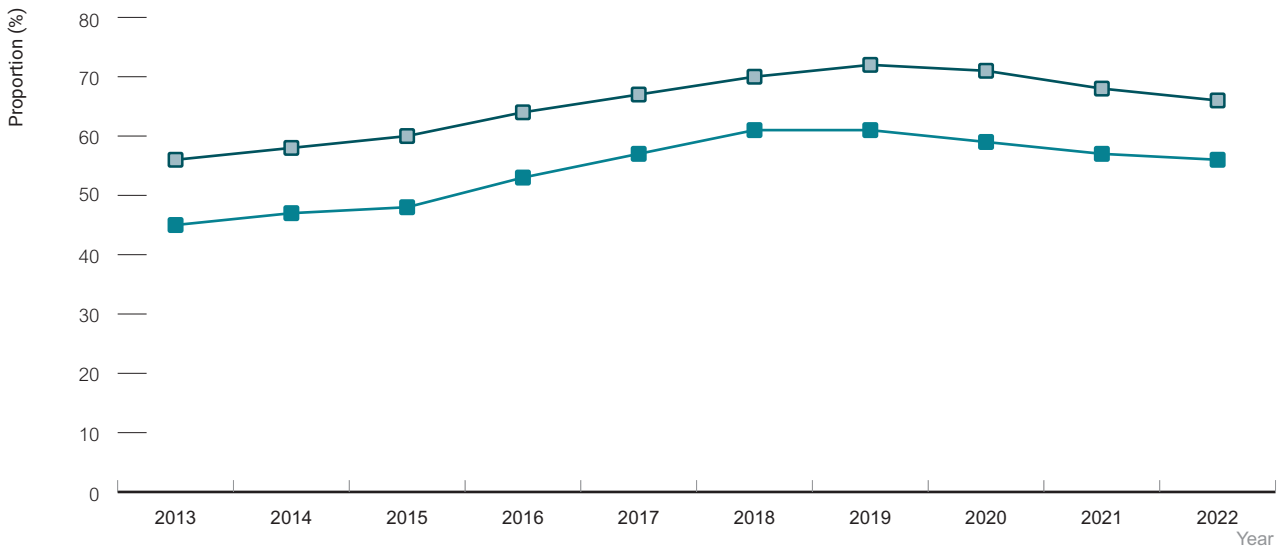


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Female re-tested at 1-7 months (%)	35	36	38	36	35	37	36	32	31	29
Female re-tested at 1-13 months (%)	43	45	47	45	44	47	46	43	42	39
Male re-tested at 1-7 months (%)	34	38	40	44	48	51	51	50	48	48
Male re-tested at 1-13 months (%)	44	48	50	54	57	60	61	62	58	58

Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance)

Among gay and bisexual men identified as CALD, attending sexual health clinics, the proportion who had a repeat HIV test within 13 months of a previous HIV test increased from 56% in 2013 to 71% in 2020 then declined to 66% in 2022. In this period, the proportion retested within seven months of a previous HIV test increased from 44% in 2013 to 61% in 2019 and declined to 56% in 2022 (Figure 41). Similar trends were observed in gay and bisexual men in general Australian population with 52% HIV retesting at 1-7 months and 63% retesting at 1-13 months respectively (data not shown) [1]. Please note that the denominator in general population includes people from CALD backgrounds.

Figure 41 HIV retesting among CALD gay and bisexual men, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Re-tested at 1-7 months (%)	45	47	48	53	57	61	61	59	57	56
Re-tested at 1-13 months (%)	56	58	60	64	67	70	72	71	68	66

Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance)

HIV incidence

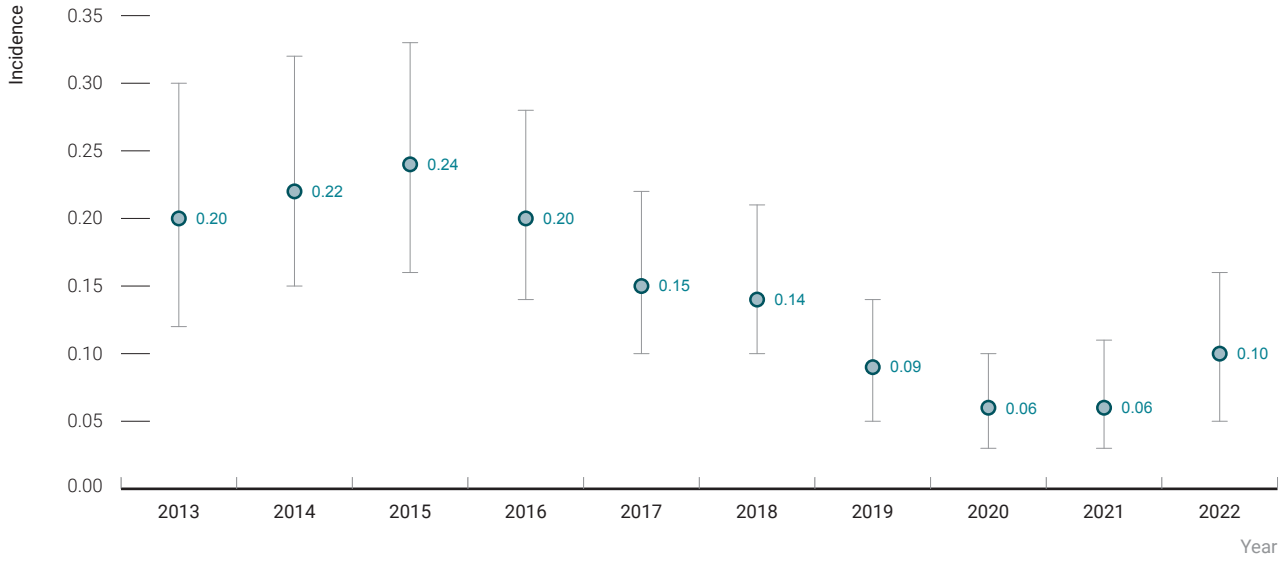
HIV incidence is the best indicator of changes in transmission in a population. HIV incidence is calculated from the ACCESS project by dividing the number of seroconversions among people undergoing repeat HIV testing at sexual health services by total time at risk for those undergoing testing (determined by the time between repeat HIV tests).

The HIV incidence rate among people from CALD backgrounds in 2022 was 0.10 new infections per 100 person-years down from 0.20 per 100 person-years in 2013. In 2020 and 2021, the HIV incidence rate was 0.06 per 100 person-years (Figure 42).

Between 2013 and 2022, the HIV incidence rate among gay and bisexual men remained low, between 0.38 and 0.13 per 100 person-years and was 0.07 per 100 person-years in 2021 (Figure 43).

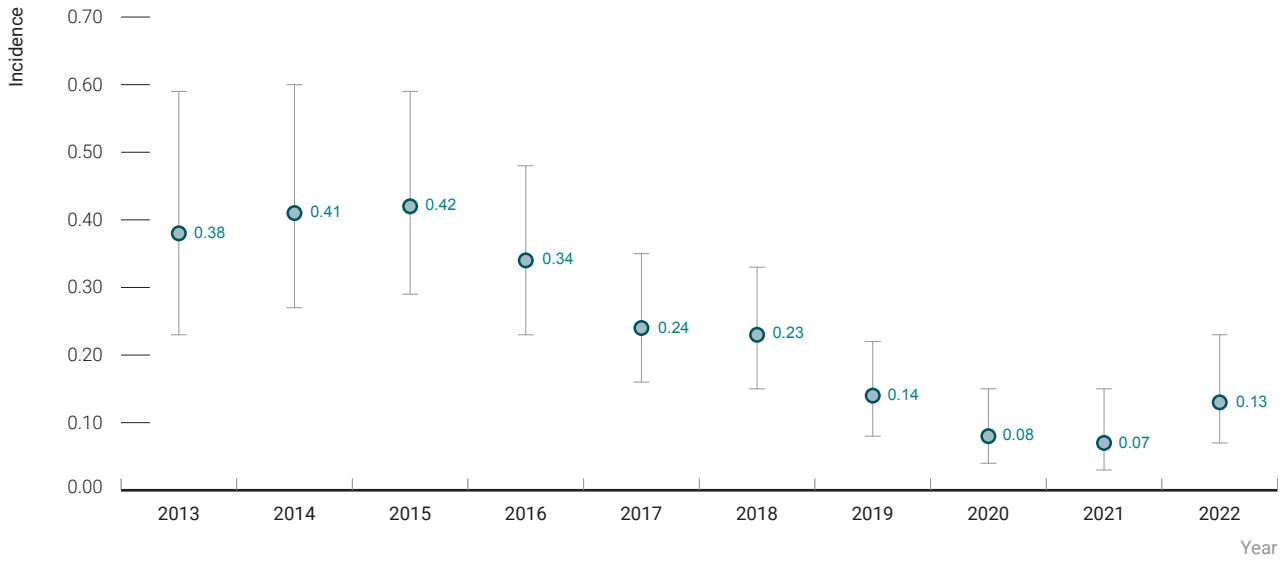
Between 2013 and 2022, the HIV incidence rate among female sex workers remained low, between 0.08 and 0.0 per 100 person-years and was 0.0 per 100 person-years in 2022. Smaller numbers of female sex workers tested for HIV after 2019 mean that trends in incidence rates to 2022 should be interpreted with caution (Figure 43).

Figure 42 HIV incidence rate per 100 person-years among people from CALD backgrounds attending sexual health clinics, 2013–2022



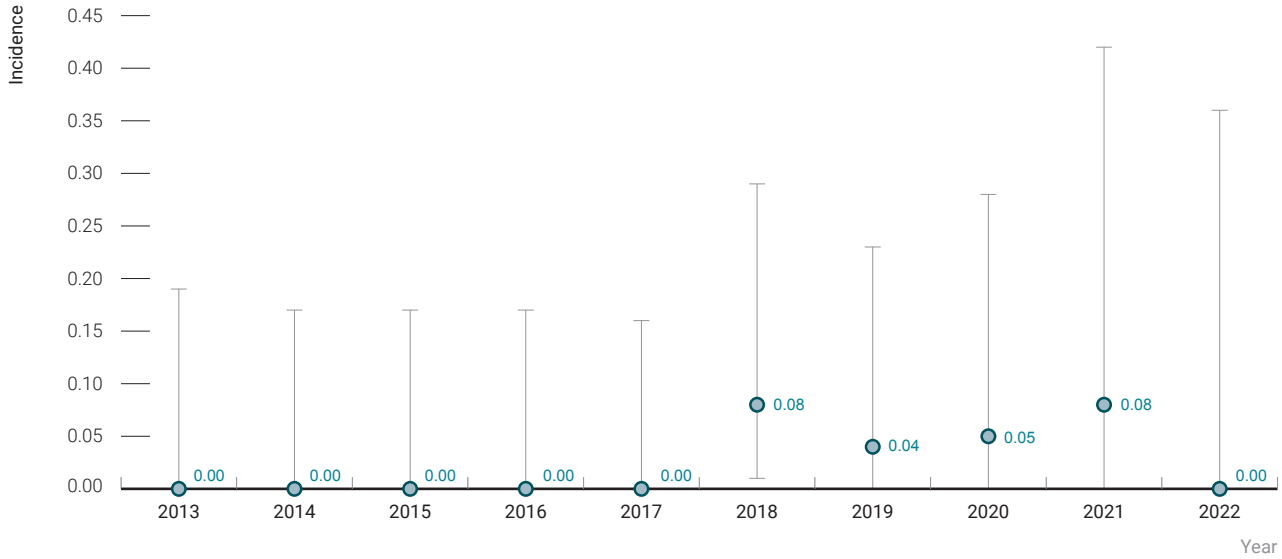
Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance); see Methodology for details
Note: These incidence estimates represent populations attending sexual health clinics and may not be generalised to broader priority populations.

Figure 43 HIV incidence rate per 100 person-years among CALD gay and bisexual men attending sexual health clinics, 2013–2022



Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance); see Methodology for details
Note: These incidence estimates represent populations attending sexual health clinics and may not be generalised to broader priority populations.

Figure 44 HIV incidence rate per 100 person-years among CALD female sex workers attending sexual health clinics, 2013–2022



Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance)
Note: These incidence estimates represent populations attending sexual health clinics and may not be generalised to broader priority populations.

Number of people living with HIV

At the end of 2022, among the 28 870 people estimated to be living with HIV in Australia, 9710 people were estimated to be from CALD backgrounds (Table 17).

Table 17 Estimated people living with HIV and diagnosed, among people from CALD backgrounds, 2022

	People living with HIV (range)	Lower range	Upper range	Number diagnosed (range)	Lower range	Upper range	Number undiagnosed[1]	Lower range	Upper range	Proportion undiagnosed
CALD	9 710	8 188	12 564	7 942	6 792	1 0292	1 768	1 396	2 272	18%
Australian born (non-indigenous)	16 869	14 439	19 401	15 971	13 855	18 221	898	584	1 180	5%
Main English-Speaking countries	2 697	2 189	3 602	2 645	2 168	3 452	52	1 396	2 272	2%
CALD estimates by region of birth										
Sub Saharan Africa	1 670	1 480	2 120	1 550	1 370	1 880	120	110	240	7%
Southeast Asia	3 286	2 860	4 046	2 432	2 185	2 899	854	675	1 147	26%
South and Central Asia	926	801	1 119	779	710	906	147	91	213	16%
Latin America or the Caribbean	930	800	1 120	780	710	910	150	90	210	16%

Source: See Methodology for details of mathematical modelling used to generate estimates
1 Sum of subpopulations will not add to the total estimated people living with HIV due to different death rate assumptions for Aboriginal and Torres Strait Islander people.

This was an increase from the estimated 9288 people from CALD backgrounds living with HIV in Australia at the end of 2021 (Table 18). After adjusting for missing country of birth data, there were an estimated 3286 people living with HIV born in Southeast Asia, 1670 born in Sub-Saharan Africa, and 930 people born in Latin America or the Caribbean. An estimated 2697 people were from main English-speaking countries and 2% of them were estimated to be undiagnosed (Table 18).

This report does not include the 'HIV diagnosis and care cascade among people from CALD backgrounds' for this round of reporting. The National HIV linkage project, led by the Kirby institute, links data from Medical Benefit Scheme (MBS), Pharmaceutical Benefits Scheme (PBS) and National Death Index (NDI) data with the NHR. This will facilitate estimating cascade of care for the future reporting among people from CALD backgrounds. More detailed cascade estimates, on general Australian population including by gender, can be found on the Kirby Institute data site.

Table 18 Estimated people living with HIV among people from CALD backgrounds, for last 5 years

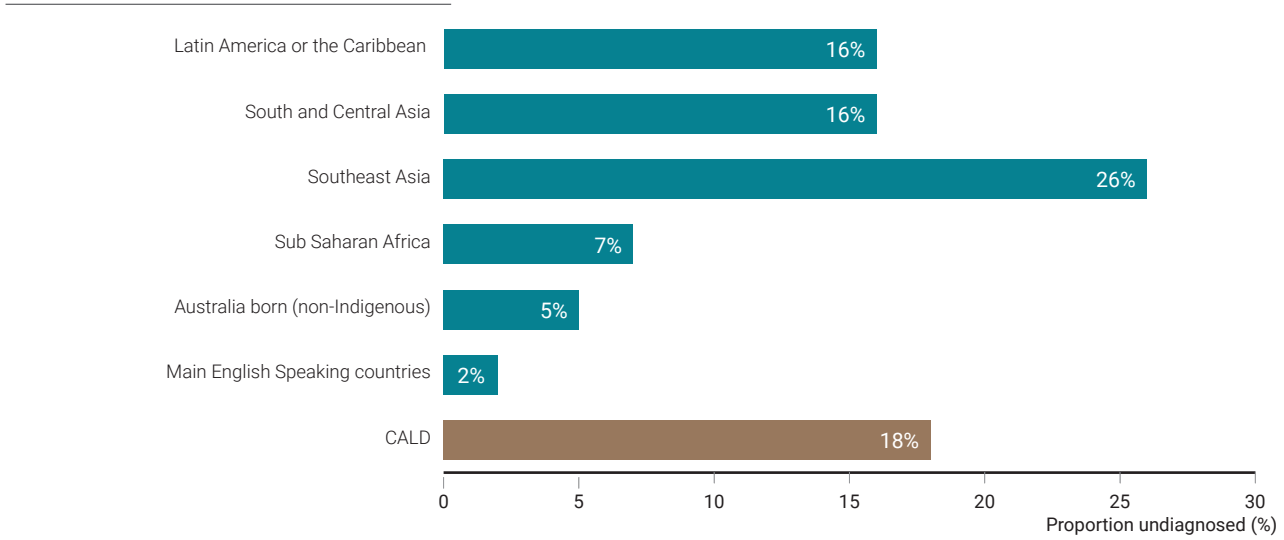
Year	people living with HIV (range)	Lower range	Upper range	Number diagnosed (range)	Lower range	Upper range	Number undiagnosed	Lower range	Upper range	Proportion undiagnosed
2018	7 860	6 833	9 869	6 506	5 566	8 432	1 354	1 267	1 437	17%
2019	8 394	7 297	10 558	6 977	5 980	9 029	1 416	1 316	1 529	17%
2020	8 917	7 698	11 199	7 385	6 350	9 507	1 533	1 348	1 692	17%
2021	9 288	7 949	11 799	7 606	6 523	9 817	1 682	1 426	1 983	18%
2022	9 710	8 188	12 564	7 941	6 792	10 292	1 769	1 396	2 272	18%

Source: See Methodology for details of mathematical modelling used to generate estimates

Undiagnosed HIV

At the end of 2022, there were an estimated 1768 people (18% of all people living with HIV) living with HIV who were unaware of their HIV status (undiagnosed). The proportion undiagnosed was much higher than Australian-born non-Indigenous people (5%). People living with HIV born in Southeast Asia and South-Central Asia had the highest proportion of people who were undiagnosed (26% and 16% respectively), followed by people living with HIV born in main English-speaking counties (18%) (Figure 45).

Figure 45 Proportion undiagnosed among people living with HIV, by CALD status and region of birth in 2022

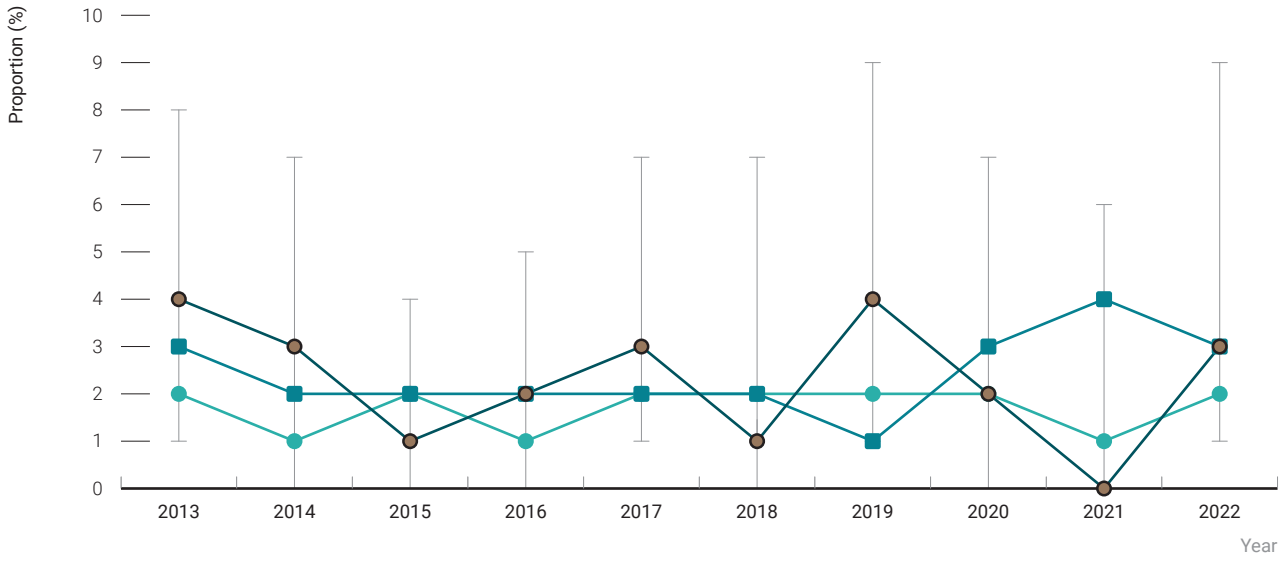


Source: See Methodology for details of mathematical modelling used to generate estimates

HIV prevalence

HIV prevalence in 2022 among people from CALD backgrounds who inject drugs seen at needle and syringe programs survey was 3% (3/91; 95% CI: 0.6%, 9%). The HIV prevalence was higher as compared to the Australian born population (except in 2021) who attended needle and syringe programs (Figure 46). The number of participants from CALD backgrounds were low with wide confidence intervals and may not be representative of national trends among people from CALD backgrounds in Australia. Also, the HIV prevalence was low in all groups and the difference between all groups was not significant (p=0.434).

Figure 46 HIV prevalence among participants from CALD backgrounds at needle and syringe program, 2013–2022

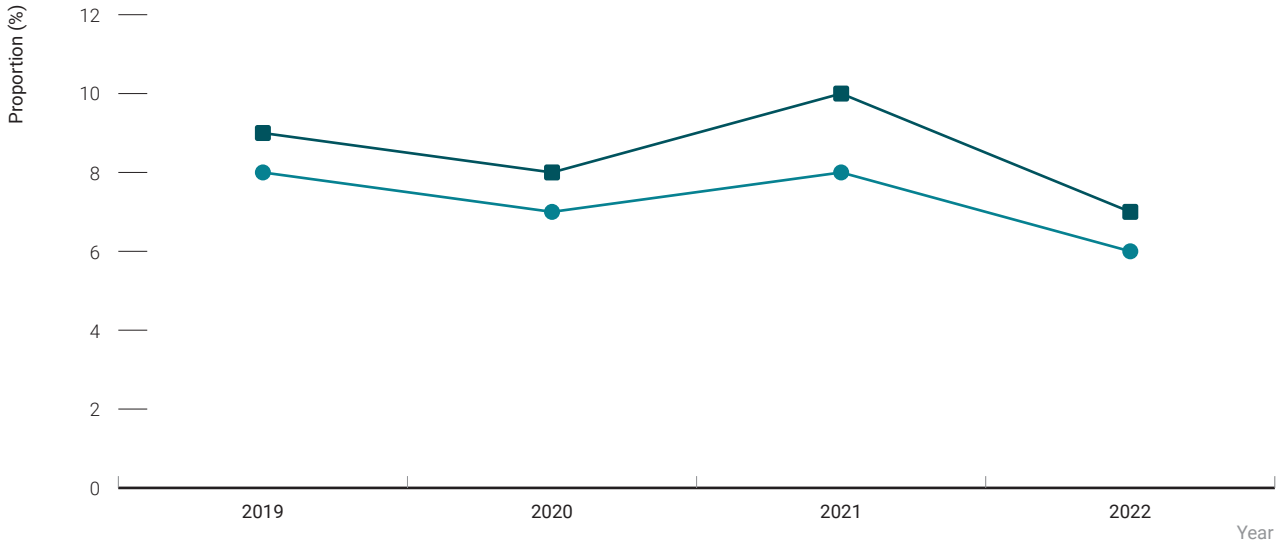


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD (%)	4	3	1	2	3	1	4	2	0	3
Main English speaking countries (%)	3	2	2	2	2	2	1	3	4	3
Australian born (%)	2	1	2	1	2	2	2	2	1	2

Source: Australian Needle and Syringe Program Survey (ANSPS)

HIV prevalence among gay and bisexual men participating in the GCPS was 6% in 2022. The HIV prevalence trend over last 4 years was similar in people from CALD backgrounds and non-CALD backgrounds (Figure 47).

Figure 47 Self-reported HIV prevalence among gay and bisexual men, 2019–2022



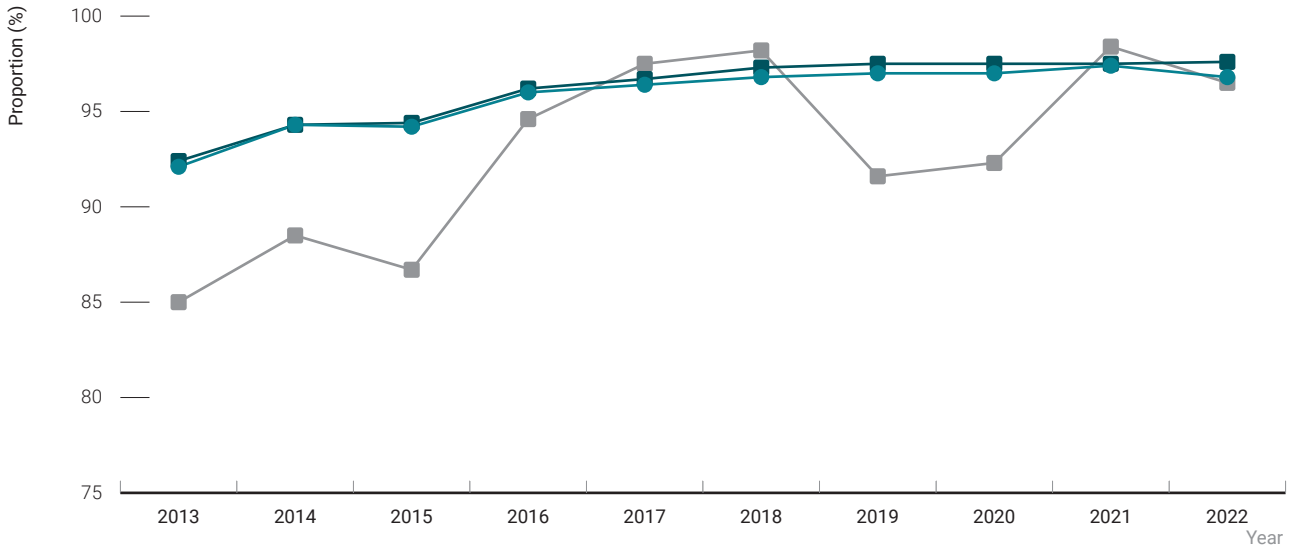
	2019	2020	2021	2022
Prevalence among CALD	8	7	8	6
Prevalence among non-CALD	9	8	10	7

Source: GCPS

Suppressed viral load

HIV viral load represents the amount of HIV in a person's blood, with higher levels increasing the chances of HIV transmission during risk exposures. Studies have shown that regularly taking combination antiretroviral therapy sustains a suppressed viral load and reduces the likelihood of HIV transmission to zero [40]. As treatment coverage has increased in Australia, there has been a corresponding increase in the proportion of people with suppressed viral load (<200 copies/mL). This increase has been observed among people from CALD backgrounds, consistently from 92% in 2013 to 97% in 2022 at 50 sexual health clinics across Australia participating in the ACCESS network (Figure 48). All priority populations accessing sexual health clinics had high proportions with a suppressed viral load (>96%) in 2022; however, the number accessing care through the ACCESS network declined in 2022, likely related to the impacts of the ongoing COVID-19 pandemic.

Figure 48 Proportion of patients from CALD backgrounds attending sexual health clinics and high case load GP clinics in the ACCESS network, with suppressed viral load, by priority populations, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD population, all clinics (%)	92.1	94.3	94.2	96.0	96.4	96.8	97.0	97.0	97.4	96.8
Injecting drug usage, all clinics (%)	85.0	88.5	86.7	94.6	97.5	98.2	91.6	92.3	98.4	96.5
Gay and bisexual, all clinics (%)	92.4	94.3	94.4	96.2	96.7	97.3	97.5	97.5	97.5	97.6

Source: ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance)

HIV prevention

Primary prevention strategies aim to protect people from acquiring HIV. They include condom use; harm reduction strategies such as needle and syringe programs, opioid substitution therapy and peer-based interventions to reduce injection drug use risk behaviour [41]; and biomedical prevention strategies such as post-exposure prophylaxis (PEP) and PrEP. Testing and treatment are secondary prevention strategies, as they prevent transmission to others due to behavioural changes after diagnosis or starting treatment and achieving undetectable (suppressed) viral load, which reduces the risk of onward transmission to zero.

According to 2021 Asian gay men's community survey data, 28% (n=105) of non-HIV positive gay Asian men were consistently using condoms when having sex with casual sex partners in the past 6 months and the PrEP usage rate was 38% (n=140). Inversely, 34% (n=124) of non-HIV-positive gay and bisexual men engaging in anal intercourse (insertive or receptive) with casual partners in the past six months, reported not consistently using condoms with casual partners of unknown HIV in 2021 (Table 19).

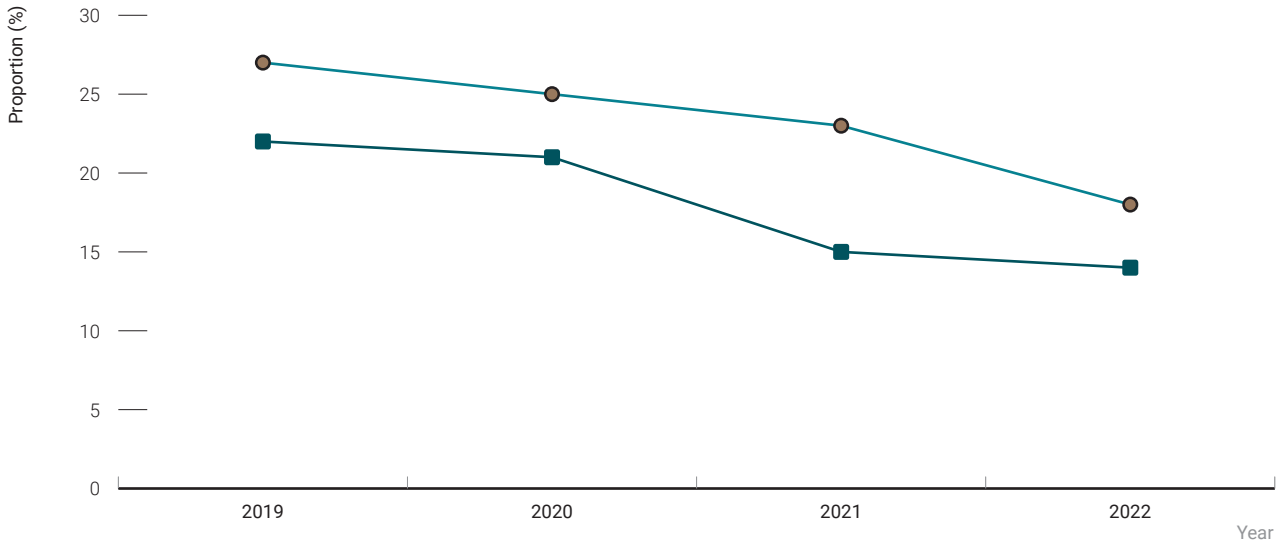
Table 19 HIV risk behaviour in men having casual male partners in the previous six months in the 2021 round

	Casual (n=369)	%
Consistent condom Use	105	28
Any condomless anal intercourse self-taking PrEP	140	38
Any condomless anal intercourse NOT self-taking PrEP	124	34

Source: Asian gay men's community survey series

Among participants of the GCPS, 18% reported consistent use of condom in 2022, which was 33% decline from 27% in 2019 (Figure 49). The proportion of consistent condom usage among people from non-CALD backgrounds was 14% in 2022 (Figure 49).

Figure 49 Proportion of consistent condom usage among GCPS participants from CALD backgrounds, 2019–2022

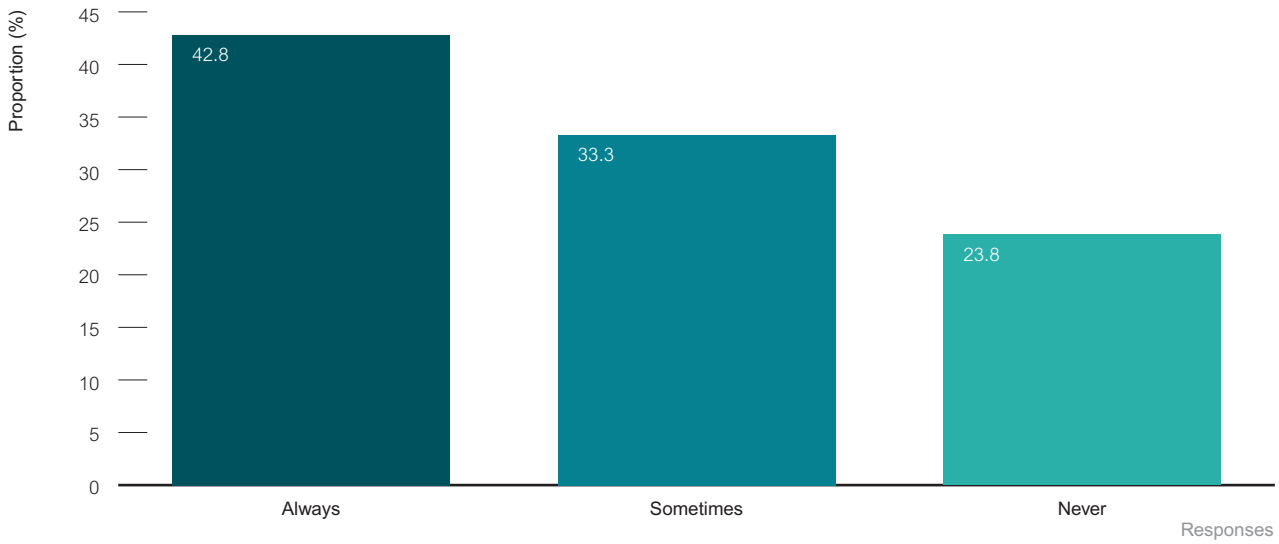


	2019	2020	2021	2022
Consistent condom use among CALD (%)	27	25	23	18
Consistent condom use among non CALD* (%)	22	21	15	14

Source: GCPS
* Non -CALD includes people born in Australia and main English-speaking countries

According to the MiBSS survey data, participants who had a valid response to the survey question and had indicated travelling overseas since 2018 (n= 105), 43% of the participants always used condoms with an overseas partner and 24% of the participants reported never using any condoms when overseas with an overseas partner (Figure 50).

Figure 50 Condom use among MiBSS survey participants (n=105)

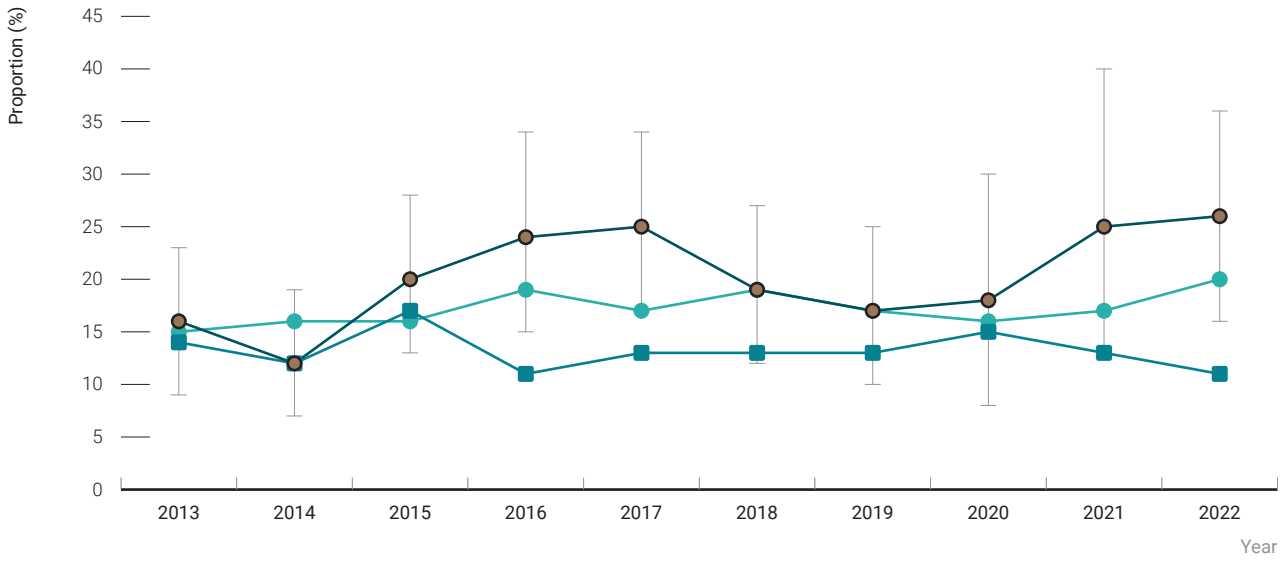


Source: MiBSS data

Use of sterile needles and syringes

The reuse of needles and syringes that have been used by others (receptive syringe sharing) is the major risk factor for the transmission of HIV, hepatitis B, and hepatitis C among people who inject drugs. Harm reduction strategies such as needle and syringe programs, opioid substitution therapy and peer interventions can reduce injection drug use risk behaviour [13,14]. Opioid substitution therapy has been shown to reduce the incidence of HIV and hepatitis C among people who inject drugs [15–17]. Health promotion is important to enhance the effectiveness of these harm reduction strategies and to support people to inject safely. In ANSPS conducted between 2013 and 2022, rates of receptive sharing of needle-syringes were typically higher among people born in non-English speaking countries than those born in Australia and other English-speaking countries. In 2022, 26% (22 /85; 95% CI: 16%, 36%) born in an non-English speaking country reported receptive sharing of needle-syringes, compared to 19% (279/1469; 95% CI: 17%, 21%; p-value 0.118) of participants born in Australia or another English-speaking country (Figure 51). However, the number of people from CALD backgrounds attending needle and syringe programs are low with wide 95% confidence intervals and may not be representative of the national population of people who inject drugs, from CALD backgrounds.

Figure 51 Proportion of people from CALD backgrounds attending at needle and syringe programs reporting receptive syringe sharing in the past month, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD (%)	16	12	20	24	25	19	17	18	25	26
Main English speaking countries (%)	14	12	17	11	13	13	13	15	13	11
Australian born (%)	15	16	16	19	17	19	17	16	17	20

Source: Australian Needle Syringe Program Survey

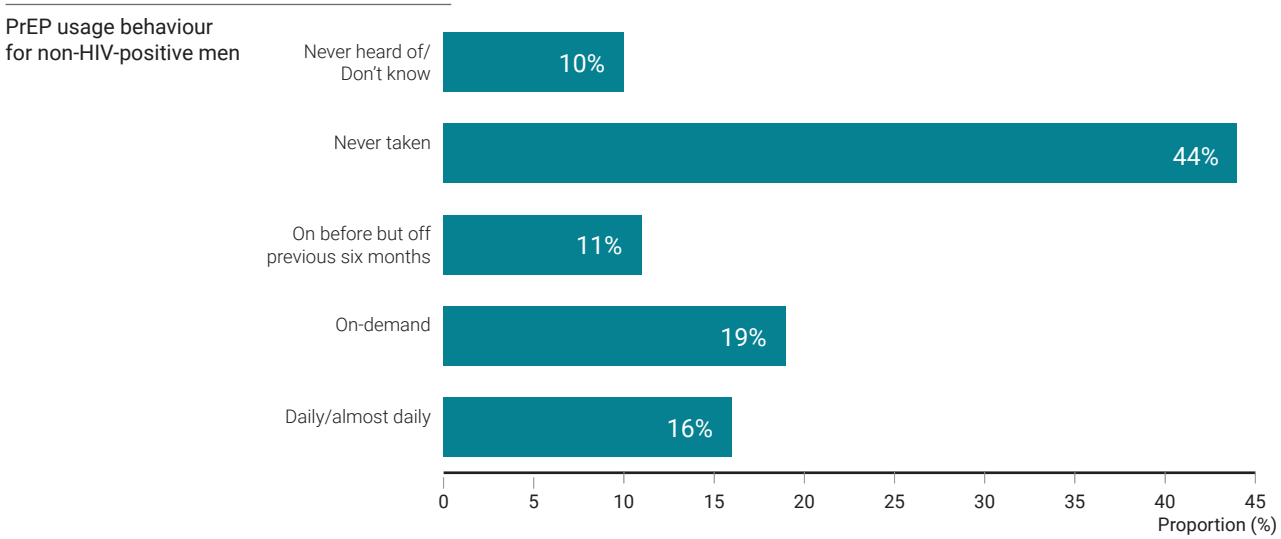
Pre-exposure prophylaxis (PrEP)

PrEP is the use of antiretroviral treatment by HIV-negative people to reduce their risk of acquiring HIV. PrEP is highly effective for people who use it according to guidelines [42]. PrEP became available to eligible individuals on 1 April 2018 through listing on the Pharmaceutical Benefits Scheme (PBS). The most recent clinical guidelines describing who may be suitable for PrEP use can be found on the ASHM website [42].

PBS does not provide data that would enable classification as CALD, and therefore PrEP data from PBS-subsidised PrEP prescriptions were not available for people from CALD backgrounds in this round of reporting.

Among participants of the Asian gay men's community survey 2021, 54% of the participants (497 out of 922 participants) had never heard of PrEP or had never taken PrEP (Figure 52). Daily or almost daily PrEP use was reported by 16% of respondents and 19% took in on demand.

Figure 52 PrEP usage behaviour for non-HIV-positive men, the 2021 round



Source: Asian gay men's community survey series

Among the participants from CALD backgrounds in the GCPS, 31% of them were taking PrEP and 6.5% had never heard about PrEP (Table 20).

Table 20 PrEP awareness among GCPS participants by CALD backgrounds status, 2022

	% of total CaLD participants	% of total non-CaLD participants
Among GCPS CALD participants		
Never heard of/don't know	6.5	5.4
Never taken PrEP in last 6 months	62.3	67.6
Heard/taking	31.2	27

Source: GCPS 2022

Viral hepatitis

Notifications

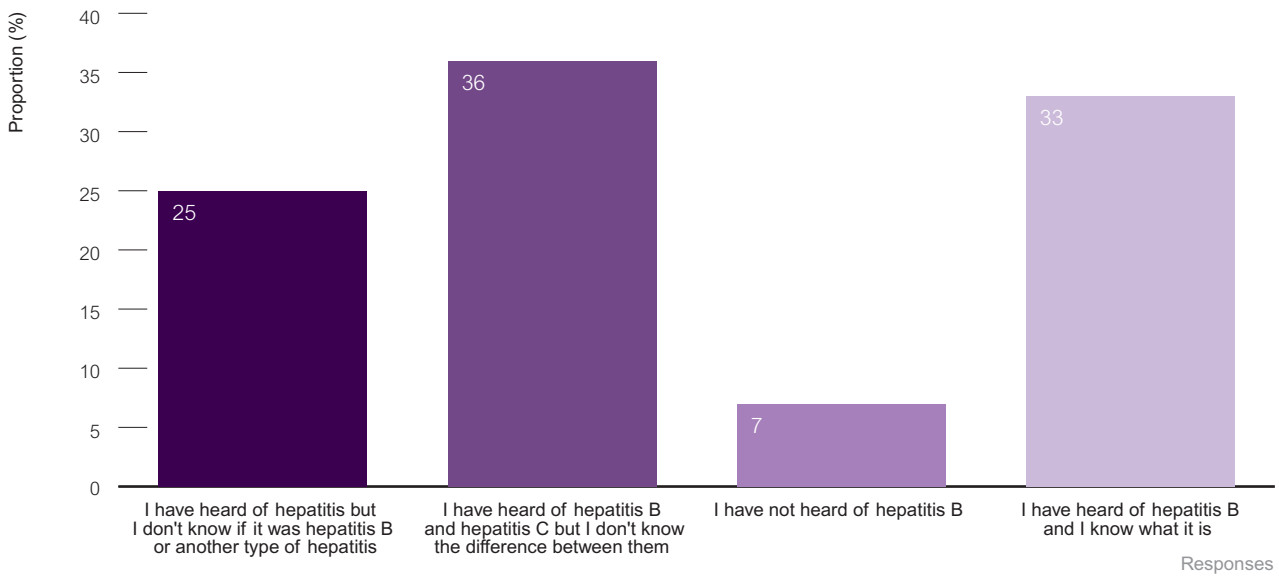
New notifications of viral hepatitis (hepatitis B and hepatitis C) are notifiable conditions in all State and Territory health jurisdictions in Australia. Cases are notified by the diagnosing laboratory, medical practitioner, hospital, or a combination of these sources, through State and Territory health authorities, to the National Notifiable Diseases Surveillance System (NNDSS). Hepatitis B and C notifications were classified as newly acquired if evidence was available of acquisition in the 24 months prior to diagnosis. Newly acquired hepatitis B notification data were available from all health jurisdictions for the period of reporting.

Country of birth is collected for both newly acquired hepatitis B and C notifications, however often relies on the reporting doctor's assumption and completeness is inconsistent throughout all jurisdictions in the NNDSS dataset (Please refer Table 2 of Overview), as the completeness of the variable was inconsistent and hence not representative of the people from CALD backgrounds in Australia, viral hepatitis notifications (B & C) data are not included in this report.

Hepatitis B / Hepatitis C awareness

According to the MiBSS survey data, participants who had a valid response to the survey question 36% (504/1405) of the participants had heard of the hepatitis B and C viruses, but didn't know the difference between them. A third, (33%, n=456) of the participants had heard of hepatitis B and knew what it was (Figure 53).

Figure 53 Viral hepatitis awareness among MiBSS survey participants (n=1405)



Source: MiBSS
Note: Proportions rounded up

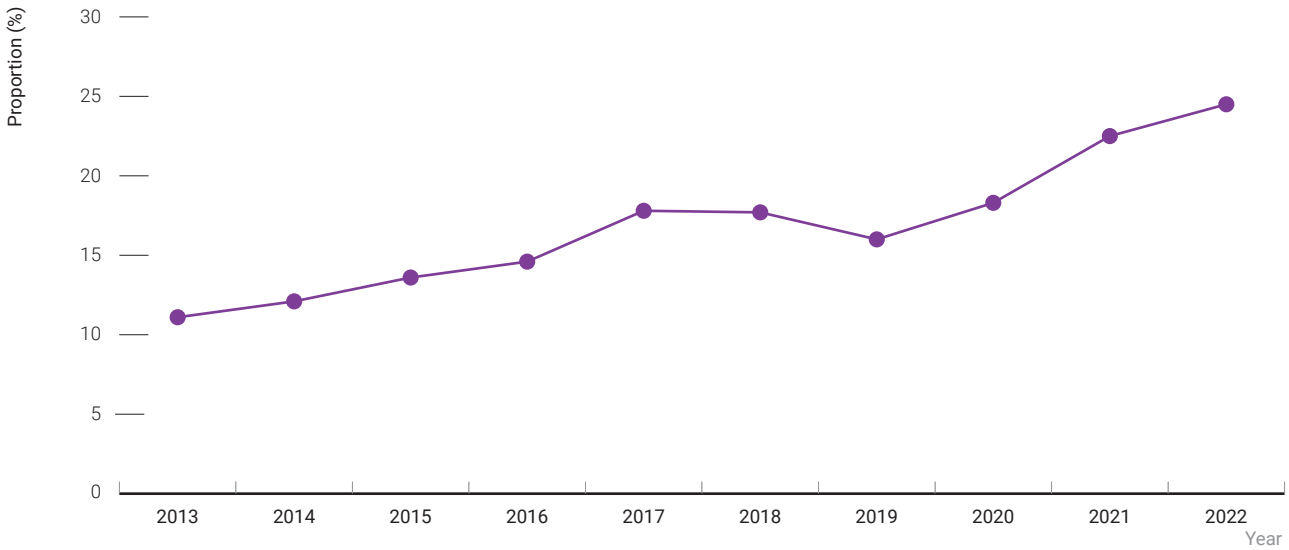
Hepatitis C Testing

Sentinel surveillance of hepatitis C testing is conducted by the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS) and includes general primary care sites specialising in the health of people who inject drugs, sexual health clinics, and primary care clinics specialising in the health of gay and bisexual men. However, the below figure only includes data from sexual health clinics since information on injection drug status could only be extracted from sexual health clinics. Among people from CALD backgrounds who inject drugs and attend one of the sexual health clinics in ACCESS, the proportion who received a hepatitis C test in the past 12 months fluctuated between 2013 and 2022 and was 24.5% in 2022 (Figure 54).

For the general Australian population[e], the proportion of people who received a hepatitis C test in the past 12 months fluctuated between 2013 and 2022 and was 54.1% in 2022 (data not shown).

A decline in the number of ACCESS clinic attendees (30 884 people from CALD backgrounds in 2019 to 17 887 in 2022) since the start of the pandemic may mean that these figures are less representative of the broader population and should be interpreted with caution. Also, around 2020, some of the ACCESS NSW sexual health clinics (e.g., Kirketon Road Centre and West Sydney Sexual Health Centre) changed their patient management system to a system which ACCESS's data extraction software could not access and extract the data. This in addition to COVID pandemic effect contributed to the drops in the number of attendees after 2019.

Figure 54 Proportion of people from CALD backgrounds who inject drugs attending a clinic in the ACCESS network who had a hepatitis C test in the past 12 months, 2013–2022



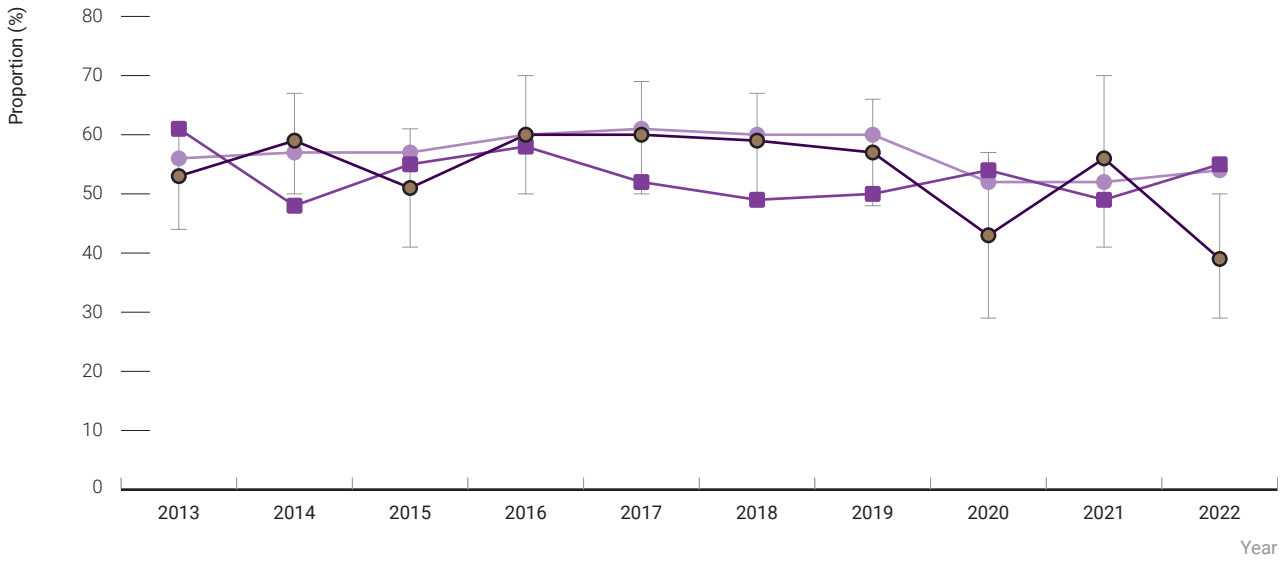
11.1	12.1	13.6	14.6	17.8	17.7	16.0	18.3	22.5	24.5

Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)
Note: Of clinics enrolled in ACCESS, injection drug use status could only be identified for analysis among Sexual Health Clinics.

e General Australian population includes all of people living in Australia regardless of their CALD status

Among people who inject drugs participating in the 2022 ANSPS, the 39% (35/89; 95% CI: 29%, 50%) of participants born in non-English speaking countries reported having been tested for hepatitis C in the past 12 months compared to 54% (828/1520; 95% CI: 51%, 56%) of participants born in Australia and other English speaking countries; prior to 2022 the differences between these groups was not significant (Figure 55).

Figure 55 Proportion of people from CALD backgrounds who inject drugs attending needle and syringe programs who reported a hepatitis C antibody test in the past 12 months, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD (%)	53	59	51	60	60	59	57	43	56	39
Main English speaking countries (%)	61	48	55	58	52	49	50	54	49	55
Australian born (%)	56	57	57	60	61	60	60	52	52	54

Source: Australian Needle and Syringe Program (ANSPS)

Hepatitis C and B testing data for Victorian GP clinics by ethnicity are analysed and presented in the Viral Hepatitis Mapping Project Report 2021.

Hepatitis C incidence

Hepatitis C incidence represents new transmissions and is an important indicator in monitoring the effectiveness of hepatitis C prevention programs and progress against national and global hepatitis C targets.

For Hepatitis C incidence data, the sentinel primary health care sites we use in the annual surveillance report to compute HCV incidence for CALD identifiers in primary care clinics was very low (8%) in the ACCESS dataset. Hence the data are not used to report hepatitis C incidence in this report as data won't be representative of the people from CALD backgrounds.

Hepatitis C and Hepatitis B prevalence

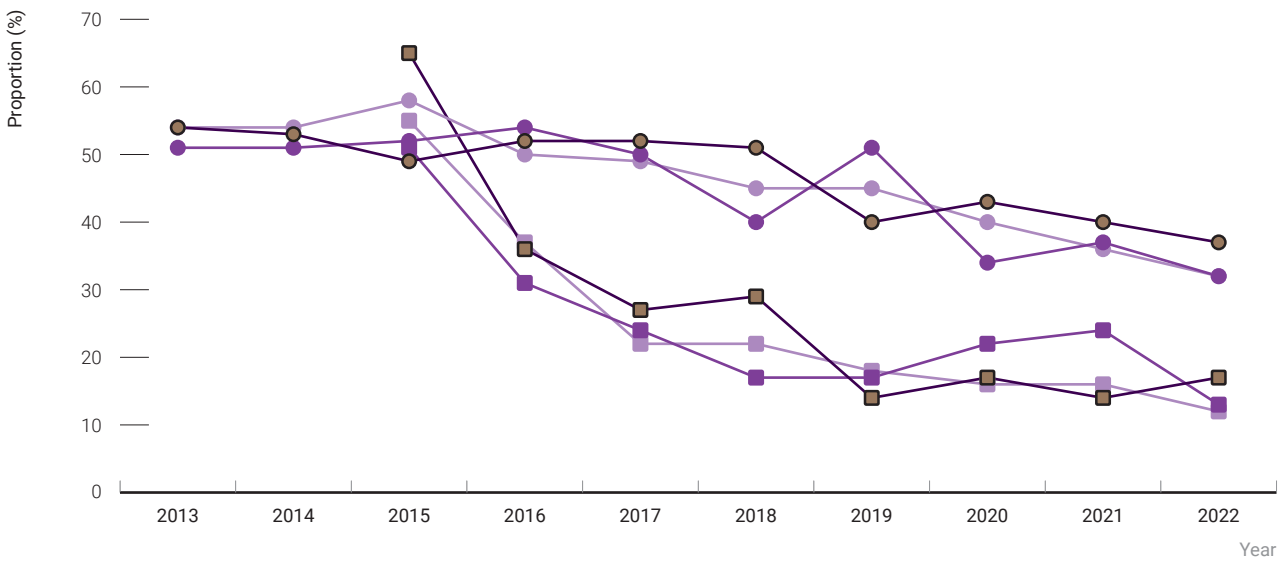
Hepatitis C prevalence

Australia's hepatitis C epidemic affects many people across differing age groups, ethnicities, and sociodemographic backgrounds. Key populations include people with a history of injecting drugs, people with a history of incarceration, and people from high-prevalence countries (where the prevalence of hepatitis C is higher than 3.5%)[f].

There has been a small but significant decline in hepatitis C antibody prevalence[g] among ANSPS participants over the last 10 years. Hepatitis C antibody prevalence among people who inject drugs born in non-English speaking countries was 37% (33/90; 95% CI: 26%, 47%) in 2022, compared to 32% (475/1491; 95% CI: 29%, 34%) among those born in Australia and 32% (38/119; 95% CI: 23%, 41%) among those born in other English speaking countries (p-value 0.342) (Figure 55).

Greater declines have been seen in hepatitis C RNA prevalence[h], reflecting the reduced level of current infection among people with hepatitis C antibodies since the widespread availability of direct-acting antiviral (DAA) therapy [43]. Hepatitis C RNA prevalence among ANSPS participants born in non-English speaking countries declined from 65% (24/37; 95% CI: 47%, 79%) in 2015 to 17% (14/84; 95% CI: 9%, 26%) in 2022. Similar declines were observed among participants born in Australia and other English-speaking countries, with differences in prevalence between these groups not statistically significant (Figure 56).

Figure 56 Hepatitis C antibody and RNA prevalence among people from CALD backgrounds attending needle and syringe programs, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Antibody positive among CALD (%)	54	53	49	52	52	51	40	43	40	37
Antibody positive people born in main English speaking population (%)	51	51	52	54	50	40	51	34	37	32
Antibody positive among Australian born (%)	54	54	58	50	49	45	45	40	36	32
RNA prevalence among CALD (%)			65	36	27	29	14	17	14	17
RNA prevalence people born in main English speaking population (%)			51	31	24	17	17	22	24	13
RNA prevalence among Australian born (%)			55	37	22	22	18	16	16	12

Source: Australian Needle and Syringe Program (ANSPS)

f HCV prevalence is considerably higher in some countries in eastern Europe (3.1% in Ukraine, 2.9% in Russia, 2.9% in Moldova, 2.5% in Romania, 2.1% in Latvia) and certain countries in Africa (5.9% in Gabon, 3.6% in Burundi, 2.1% in Egypt), the Middle East (1.6% in Syria), and the South Caucasus and Central Asia (3.1% in Georgia, 3.0% in Uzbekistan, 2.7% in Tajikistan, 2.7% in Turkmenistan).

g The presence of HCV antibody (anti-HCV detected) shows that the patient has HCV infection but does not indicate whether the infection is acute, chronic or resolved.

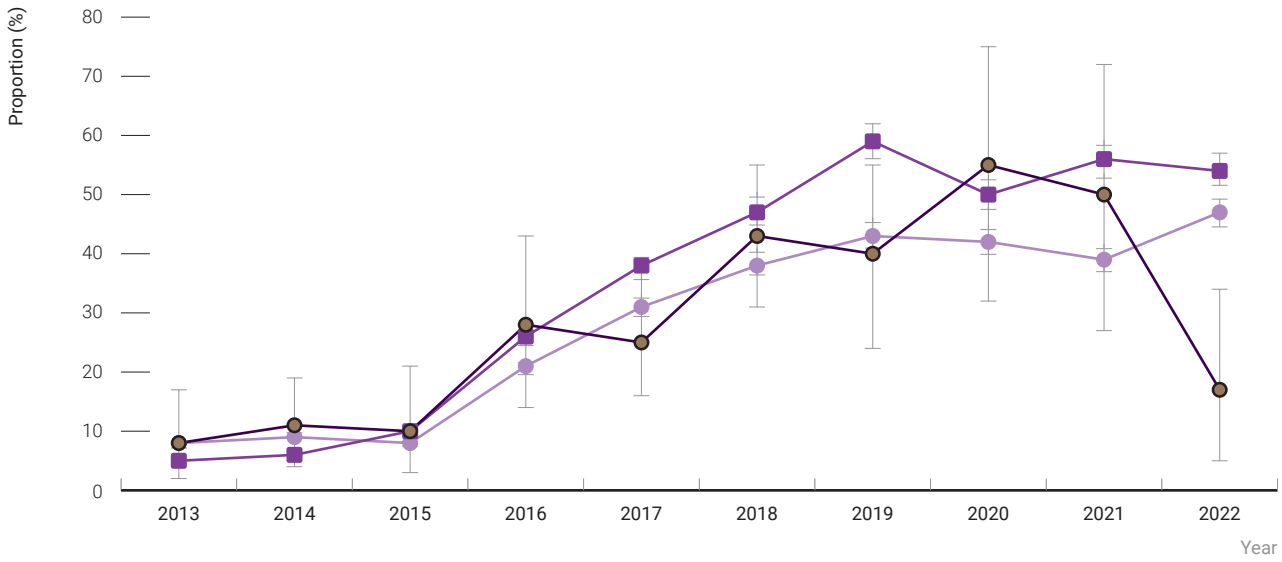
h Testing for HCV RNA is recommended for all patients shown to have an HCV antibody (anti-HCV) reactive sample to identify acute or chronic infection

Hepatitis C treatment

Among participants of the ANSPS born in non-English speaking countries, the proportion of people who inject drugs and a history of living with hepatitis C who report having ever received treatment increased from 8% (5/62; 95% CI: 2%, 17%) in 2013 to 50% (10/20; 95% CI: 27%, 72%) in 2021, then declined to almost half to 17% (5/30; 95% CI: 5%, 34%) in 2022 (Figure 57).

This increase reflects improved access through subsidised interferon-free direct-acting antiviral regimens from March 2016 [43]. Please refer to the Australian Needle Syringe Program Survey National Data Report 2018–2022: Prevalence of HIV, HCV and injection drug and sexual behaviour among NSP attendees for more information [46].

Figure 57 Proportion of hepatitis C antibody positive people from CALD backgrounds seen at needle and syringe programs with a history of hepatitis C treatment, 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD (%)	8	11	10	28	25	43	40	55	50	17
Main English speaking countries (%)	5	6	10	26	38	47	59	50	56	54
Australian born (%)	8	9	8	21	31	38	43	42	39	47

Source: Australian Needle and Syringe Program (ANSPS)
Note: Denominator for a history of treatment is restricted to people with hepatitis C antibody positive serology and excludes people who self-reported spontaneous clearance

Hepatitis C prevention

The reuse of needles and syringes that have been used by others (receptive syringe sharing) is a major risk factor for the transmission of hepatitis C and other bloodborne viruses among people who inject drugs. Harm reduction strategies, in community and prison settings, such as needle and syringe programs and opioid substitution therapy as well as safe injections, community education and peer interventions can reduce unsafe injecting behaviours[41,47,48].

Opioid agonist therapy has been shown to reduce the incidence of hepatitis C and HIV among people who inject drugs[49–51]. Health promotion is important to enhance the effectiveness of harm reduction strategies and to support people who inject drugs to implement safer practices. Mathematical modelling suggests achieving a high coverage of hepatitis C antiviral treatment can reduce the population prevalence of hepatitis C and therefore lead to reduced incidence (treatment as prevention) [52]. Secondary prevention strategies to reduce the risk of liver disease morbidity and mortality include improving access to diagnosis and antiviral treatment and engagement in regular ongoing liver cancer monitoring for all people with cirrhosis even when cured of hepatitis C infection.

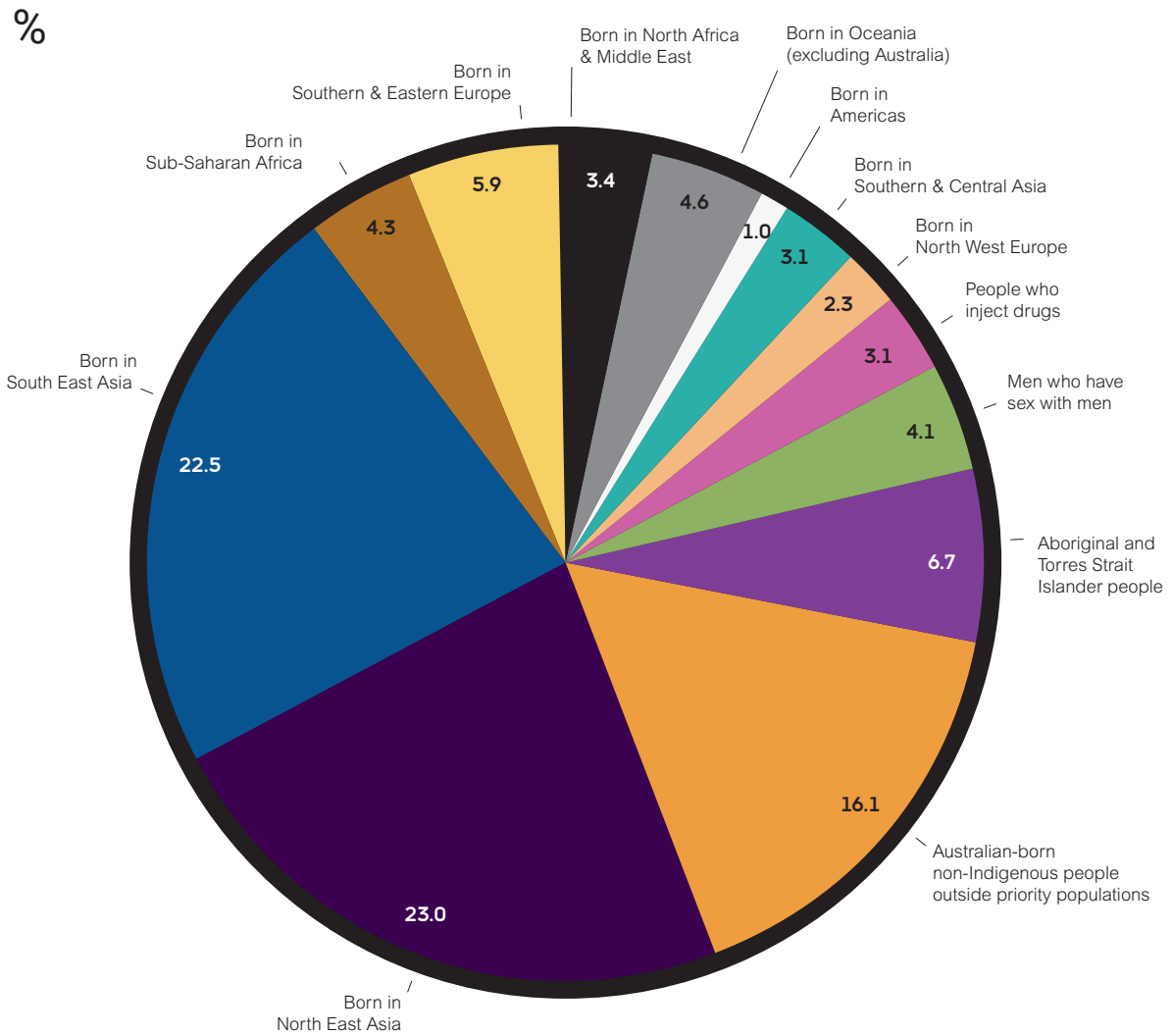
Injection drug use risk behaviour

Data from the Australian Needle Syringe Program Survey indicate that the prevalence of receptive syringe sharing (where an individual injects with equipment that has been used previously by someone else) has been generally stable over the past 10 years (2013–2022). Rates of receptive sharing of needle-syringes were typically higher among people born in non-English speaking countries than those born in Australia and other English-speaking countries. In 2022, 26% (22/85; 95% CI: 16%, 36%) born in a non-English speaking country reported receptive sharing of needle-syringes, compared to 20% (267/1359; 95% CI: 17%, 21%) of participants born in Australia and 11% (12/110: 95% CI: 5%, 18%) of those born in other English-speaking countries (p-value 0.025) (see HIV prevention section, Figure 51). Please refer to the Australian Needle Syringe Program Survey National Data Report 2018-2022: Prevalence of HIV, HCV and injecting and sexual behaviour among NSP attendees for further information [46]. Please note, most people from CALD backgrounds living with HCV do not inject drugs, thus the data only reflect a very small portion of the population.

Hepatitis B prevalence

According to Viral Hepatitis Mapping Project 2022 report estimates, regions of birth with the highest prevalence were North East Asia (5.00% prevalence, representing 23.0% of the total with chronic hepatitis C (CHB) and South East Asia (4.03% prevalence, 22.5% of the total) (Table 21). A smaller proportion of people in Australia with CHB were born in Southern and Eastern Europe (5.9% of the total with CHB), Oceania (4.6%) and Sub-Saharan Africa (4.3%)(Figure 58). Due to the higher prevalence of CHB among people born overseas and the CALD communities in Australia likely to experience broader health care access disparities [6], these data can support the identification and prioritisation of people most likely to be living with CHB in Australia [44].

Figure 58 People living with CHB in Australia, by priority population*, 2022



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.
* When a person belonged to more than one population group, they were allocated to only one in the model based on evidence regarding the most common transmission risk, with prioritisation given to country of birth and Aboriginal and Torres Strait Islander status.

A person may belong to more than one of these groups, but they are allocated to only one priority population, because data regarding the intersectional influence of CHB epidemiology across priority populations are highly limited. The methodology prioritises country of birth and Aboriginal and Torres Strait Islander status when allocating populations, as this usually reflects transmission in early life when the risk of developing chronic infection is highest [45]. However, policy responses to CHB should not assume exclusivity of risk group categories, and should recognise that a person may belong to more than one community [44].

For more details on methodology , please refer to The Viral Hepatitis mapping Project: Hepatitis B 2022.

Table 21 People living with CHB in Australia, among overseas born, ordered from highest to lowest prevalence within each region of birth, 2022

Population group	Total population	People living with CHB	Prevalence (%)	Proportion of all people living with CHB (%)
People born in Australia (total)	**18 729 353**	**61 616**	**0.33%**	**30.0%**
People born overseas (total)	**7 525 895**	**143 933**	**1.90%**	**70.0%**
People born in North East Asia	937 547	47 179	5.00%	23.0%
People born in South East Asia	1 142 242	46 288	4.03%	22.5%
People born in Sub-Saharan Africa	382 708	8 761	2.28%	4.26%
People born in Southern & Eastern Europe	675 355	12 054	1.77%	5.86%
People born in North Africa & Middle East	477 615	6 996	1.46%	3.40%
People born in Oceania (excluding Australia)	742 805	9 437	1.26%	4.59%
People born in the Americas	346 167	2 137	0.61%	1.04%
People born in Southern & Central Asia	1 259 171	6 408	0.51%	3.12%
People born in North West Europe	1 562 285	4 673	0.30%	2.27%
AUSTRALIA	**26 268 359**	**205 549**	**0.78%**	**–**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.
* When a person belonged to more than one population group, they were allocated to only one in the model based on evidence regarding the most common transmission risk, with prioritisation given to country of birth and Aboriginal and Torres Strait Islander status.
Totals may not add up due to inclusion of people with an inadequately described country of birth recorded in source data

Chronic Hepatitis B prevalence among women

Hepatitis B notifications (NSW Notifiable Conditions Information Management System (NCIMS)) data were linked with NSW perinatal birth register records (NSW Perinatal Data Collection) for the period of 2000–2016. Among 15–44-year-old women, age standardised chronic HBV prevalence by country of birth were estimated. Among 8001 linked women, overall age-standardized prevalence was 0.76%, 95% CI: 0.74-0.78. Prevalence varied by country of birth with highest estimates among women born in Sierra Leone (11.13%, 95% CI: 8.2-13.9), Taiwan (8.08%, 95% CI: 6.7% -9.43) and Cambodia (7.47%, 95% CI: 6.5-8.4%). Prevalence was 0.18% (95% CI: 0.17-0.19%) among women born in Australia. For further details, please refer here [13].

Sexually Transmissible Infections

Notifications

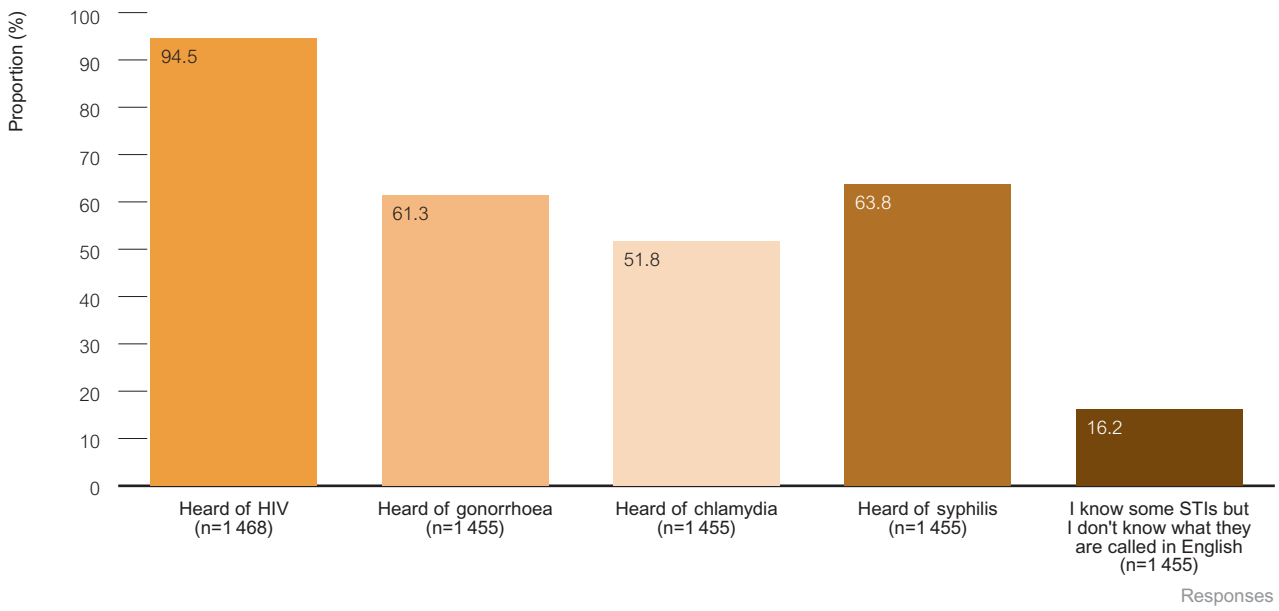
Diagnoses of STI are notified by State and Territory health authorities to the National Notifiable Disease Surveillance System (NNDSS), maintained by the Australian Government Department of Health and Aged Care. In most health jurisdictions, diagnoses of STI are notified by the diagnosing laboratory, the medical practitioner, hospital or a combination of these sources.

Country of birth (Country of birth of mother) is the only CALD indicator collected for congenital syphilis surveillance. No CALD indicators are collected in the NNDSS for other STIs and hence notifications among people from CALD backgrounds could not be reported using NNDSS data in this report. Please note the jurisdictional health datasets collect various other CALD variables.

STI/HIV awareness

According to data from the MiBSS survey conducted in 2021–2022, 94% participants (n=1486) had heard of HIV, however just over 50% of the participants (n=1455) had heard about chlamydia (Figure 59). 16% of the participants (n=1455) knew about some STIs but were not confident to know what each of the STIs were called in English (Figure 59).

Figure 59 HIV/ STIs awareness among MiBSS participants



Source: MiBSS data

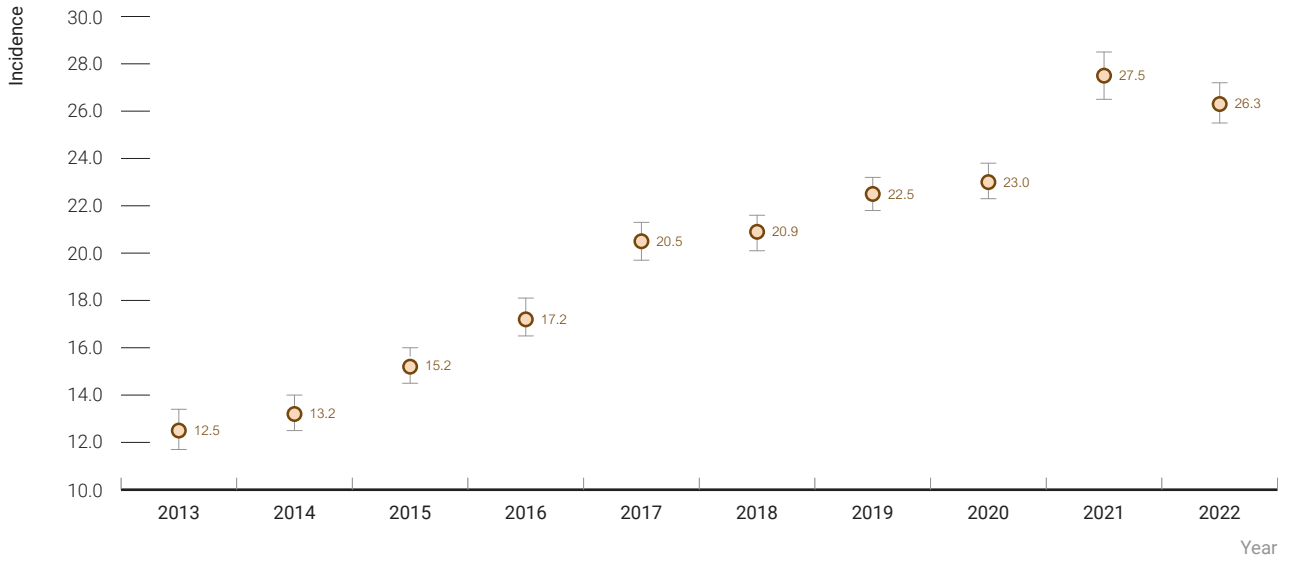
Chlamydia incidence

Chlamydia incidence is an important indicator of new transmissions and can reflect the impact of prevention programs, whereas prevalence reflects the burden of disease. Chlamydia incidence is available from ACCESS (Australian Collaboration for Coordinated Enhanced Sentinel Surveillance) (53,54). and is calculated by dividing the number of incident infections (negative test followed by a positive test) among people undergoing repeat chlamydia testing at sexual health services by the person's time at risk (determined by the time between repeat chlamydia tests) [55]. These incidence estimates represent populations attending sexual health clinics and may not be generalizable to the broader priority populations.

In 2022, chlamydia incidence among people from CALD backgrounds attending sexual health clinics was 26.3 new infections per 100 person years (Figure 60). Chlamydia incidence among HIV-positive gay and bisexual men from CALD backgrounds was 56.2 new infections per 100 person-years, which was higher than among HIV-negative gay and bisexual men (35.1 per 100 person-years). There was a 57% increase in chlamydia incidence among HIV-positive gay and bisexual men since 2013 (from 35.7 per 100 person-years) and an 85% increase in HIV-negative gay and bisexual men since 2013 (from 19 per 100 person-years) (Figure 61).

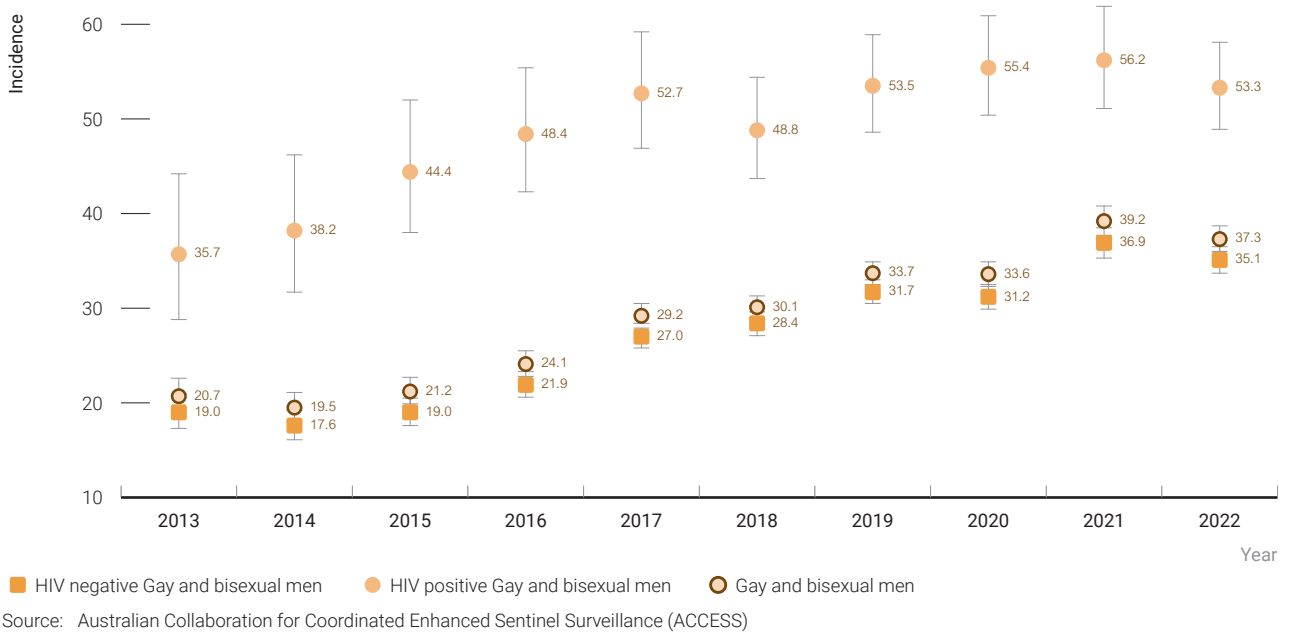
Caution should be taken with interpretation as some confidence intervals overlap, indicating that these between-year differences are not statistically significant.

Figure 60 Chlamydia incidence among people from CALD backgrounds attending sexual health clinics, 2013–2022



Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Figure 61 Chlamydia incidence among people from CALD backgrounds attending in sexual health clinics, by select population, 2013–2022



Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Gonorrhoea Incidence

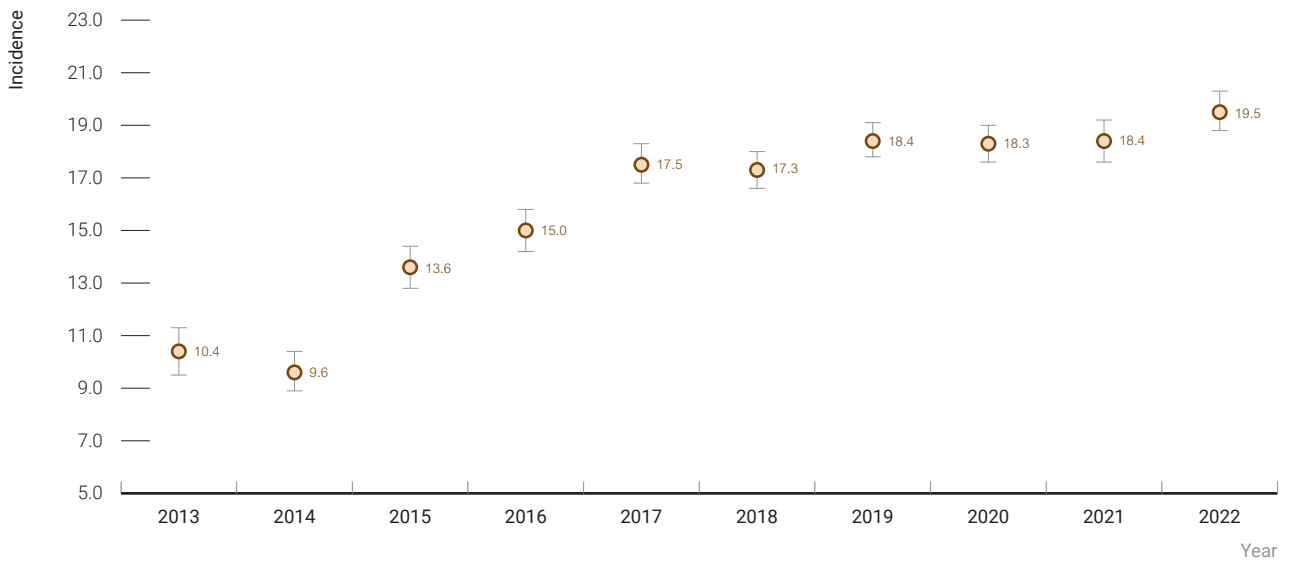
Gonorrhoea incidence is an important indicator of new transmissions, reflecting the impact of current prevention programs, whereas prevalence reflects the burden of disease. Gonorrhoea incidence is available from the ACCESS network and is calculated by dividing the number of incident infections (negative test followed by a positive test) among people undergoing repeat gonorrhoea testing at sexual health services by the person's time at risk (determined by the time between repeat gonorrhoea tests) [55]. These incidence estimates represent populations attending sexual health clinics and may not be generalisable to the broader priority populations.

In 2022, gonorrhoea incidence among people from CALD backgrounds attending sexual health clinics was 19.5 new infections per 100 person-years in 2022 (Figure 62). There was an 87% increase in incidence since 2013 (10.4 new infections per 100 person-years).

Gonorrhoea incidence was 28.6 new infections per 100 person-years among gay and bisexual men from CALD backgrounds in 2022. This increased by 32% from 2013 (19.4 new infections per 100 person-years (Figure 63).

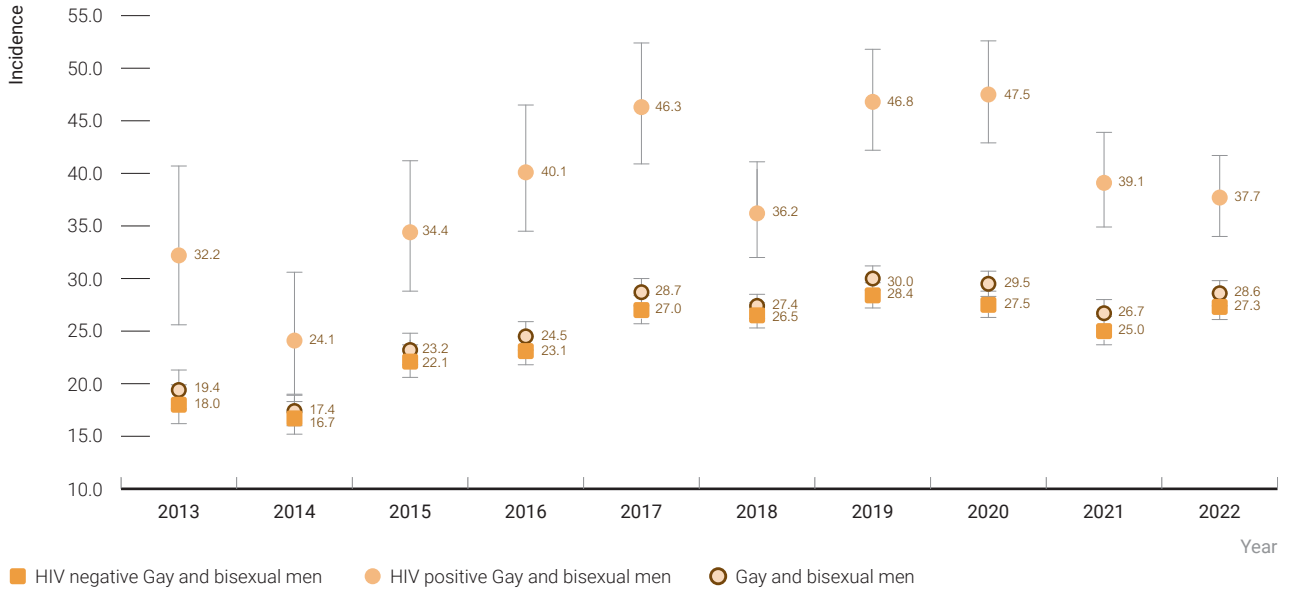
Gonorrhoea incidence among HIV positive gay and bisexual men of CALD backgrounds was 37.6 new infections per 100 person-years in 2022. The incidence was 17% higher compared with 2013 (32.2 per 100 person-years). Gonorrhoea incidence among HIV negative gay and bisexual men among people from CALD backgrounds was 27.3 new infections per 100 person-years in 2022. Among female sex workers, gonorrhoea incidence increased by 416% from 2.5 per 100 person-years in 2013 to 12.9 per 100 person-years in 2022 (Figure 64). Caution should be taken with interpretation as confidence intervals overlap between some years, indicating that between-year differences are not statistically significant.

Figure 62 Gonorrhoea incidence among people from CALD backgrounds attending sexual health clinics, 2013–2022



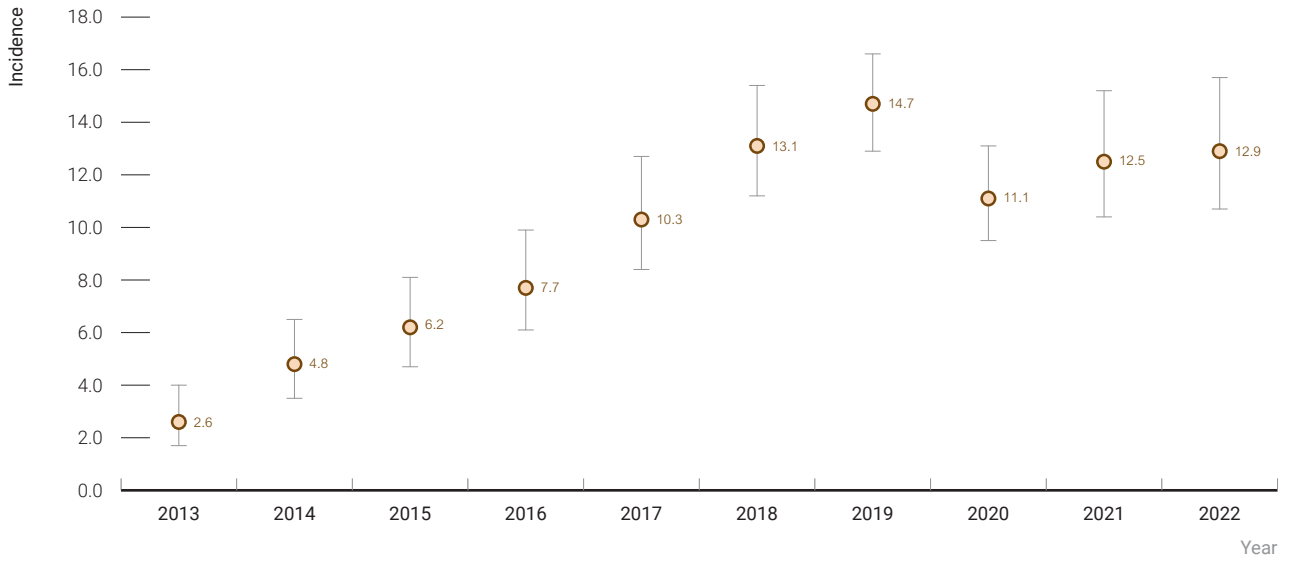
Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Figure 63 Gonorrhoea incidence among people from CALD backgrounds attending sexual health clinics, by select population, 2013–2022



Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Figure 64 Gonorrhoea incidence among female sex workers from CALD backgrounds attending sexual health clinics, 2013–2022



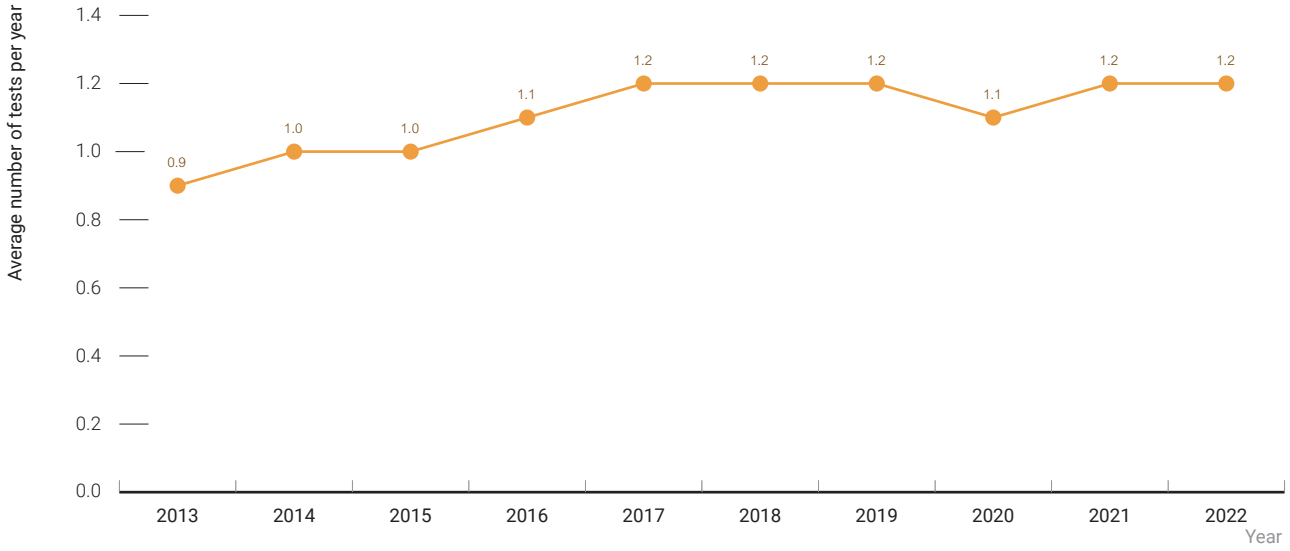
Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Infectious syphilis testing

Clinical guidelines recommend at least annual STI testing for all sexually active gay and bisexual men, increasing to every three months for men with higher risk behaviour, and at each monitoring visit for HIV-positive gay and bisexual men [40].

The number of syphilis tests per year among people from CALD backgrounds was stable in the last 5 years at 1.2 tests per year (Figure 65).

Figure 65 Average number of syphilis tests per year among people from CALD backgrounds attending sexual health clinics, 2013–2022



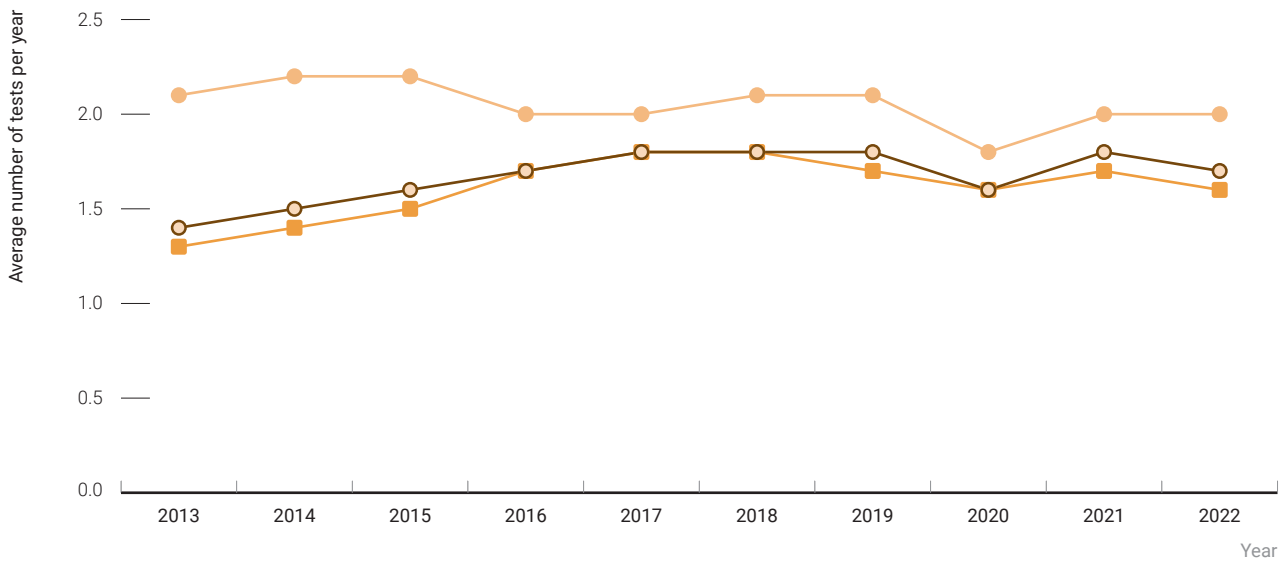
Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

The number of syphilis tests per year among gay and bisexual men can give an indication of adherence to recommendations in clinical guidelines [40]. The average number of syphilis tests per year among gay and bisexual men from CALD backgrounds attending sexual health clinics and high-caseload general practice clinics in the ACCESS network fluctuated between 2013 and 2022 and was 1.7 tests per year in 2022 (Figure 66).

Among HIV-negative gay and bisexual men from CALD backgrounds in the same period, the average number of syphilis tests fluctuated and was 1.6 tests per year in 2022. The average number of syphilis tests was higher among HIV positive gay and bisexual men from CALD backgrounds and was 2 tests per year in 2022. (Figure 66)

Among the Australian general population the tests per year among gay and bisexual men in 2022 was 1.5 tests per year (data not shown, please refer STI Annual Surveillance Chapter 2023).

Figure 66 Average number of syphilis tests per year among gay and bisexual men from CALD backgrounds by HIV status attending sexual health clinics, 2013–2022



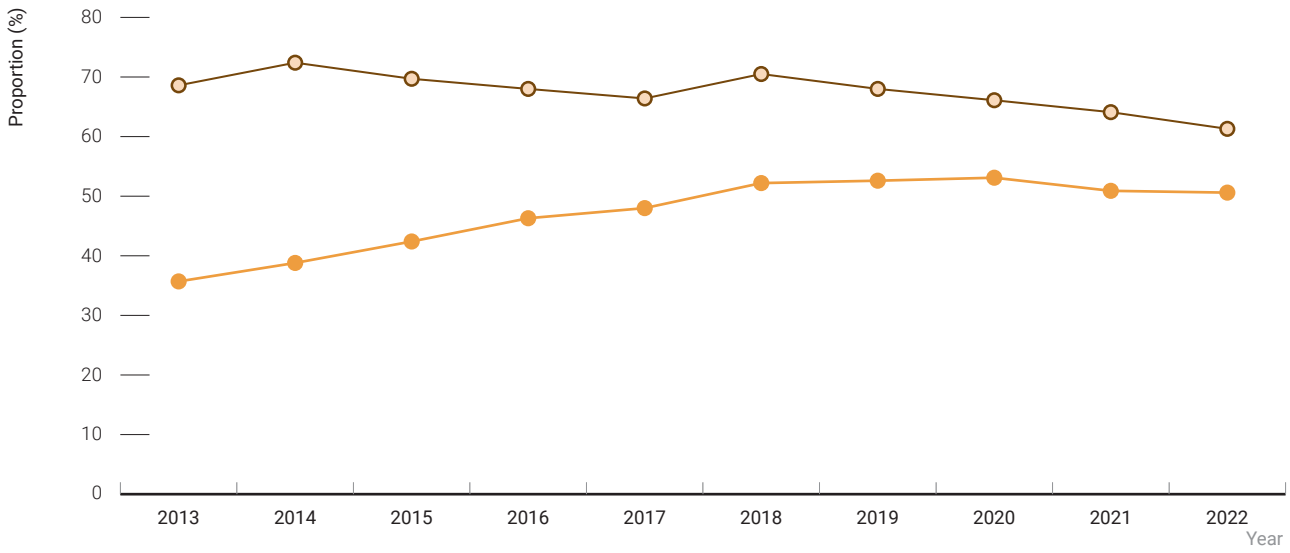
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CALD MSM	1.4	1.5	1.6	1.7	1.8	1.8	1.8	1.6	1.8	1.7
CALD HIV negative MSM	1.3	1.4	1.5	1.7	1.8	1.8	1.7	1.6	1.7	1.6
CALD HIV positive MSM	2.1	2.2	2.2	2	2	2.1	2.1	1.8	2	2

Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Repeat comprehensive testing

In 2022, among gay and bisexual men from CALD backgrounds attending sexual health clinics in the ACCESS network, 51% had a repeat comprehensive STI screen (includes chlamydia and gonorrhoea test on any anatomical site, syphilis and HIV among HIV-negative men) within 13 months of a previous comprehensive screen, an increase from 36% in 2013, but a decline from 53% in 2019 (Figure 67). Among female sex workers from CALD backgrounds attending sexual health clinics in the ACCESS network, the proportion who had a repeat comprehensive STI screen increased from 69% in 2013 to 70.5% in 2018, and then declined to 61% in 2022 (Figure 67).

Figure 67 Repeat comprehensive STI screen within 13 months of a test among people from CALD backgrounds and female sex workers from CALD backgrounds attending sexual health clinics, 2013–2022

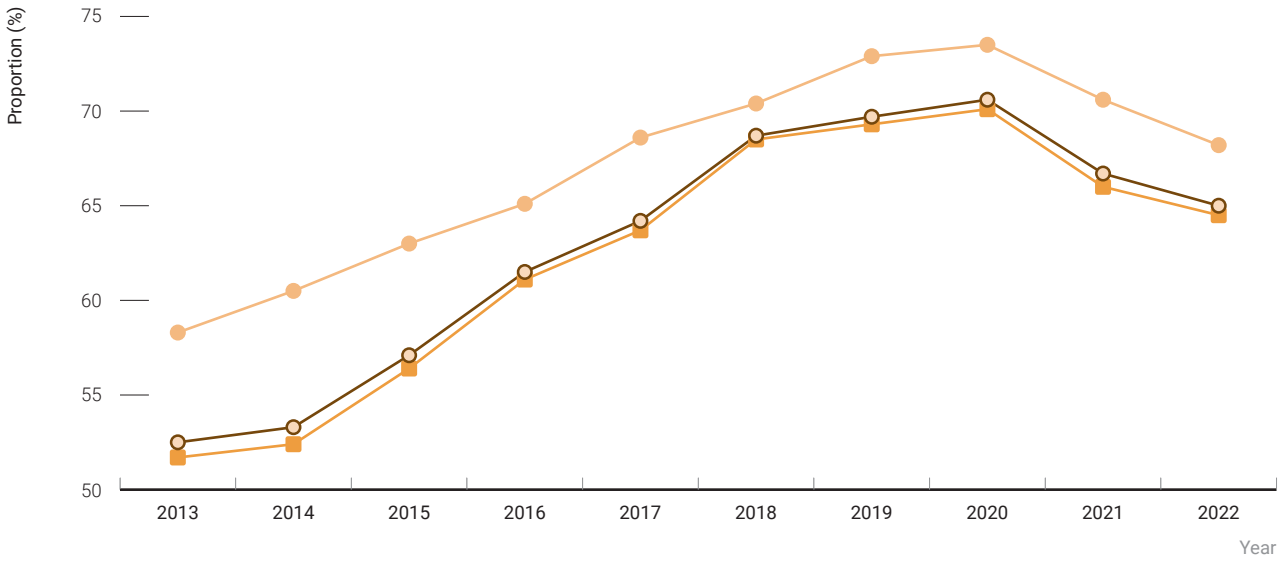


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
All CALD (%)	35.7	38.8	42.4	46.3	48.0	52.2	52.6	53.1	50.9	50.6
CALD Female sex worker (%)	68.6	72.4	69.7	68.0	66.4	70.5	68.0	66.1	64.1	61.3

Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Among gay and bisexual men from CALD backgrounds repeat comprehensive STI testing within 13 months of previous comprehensive testing was 65.0% in 2022, an increase from 52.5% in 2013 (Figure 68). Comprehensive testing was higher among HIV positive gay and bisexual men as compared to HIV negative gay and bisexual men (68% in HIV positive and 64.5% in HIV negative gay and bisexual men in 2022) (Figure 68).

Figure 68 Repeat comprehensive STI screen within 13 months of a test among gay and bisexual men from CALD backgrounds attending sexual health clinics by HIV status, 2013–2022

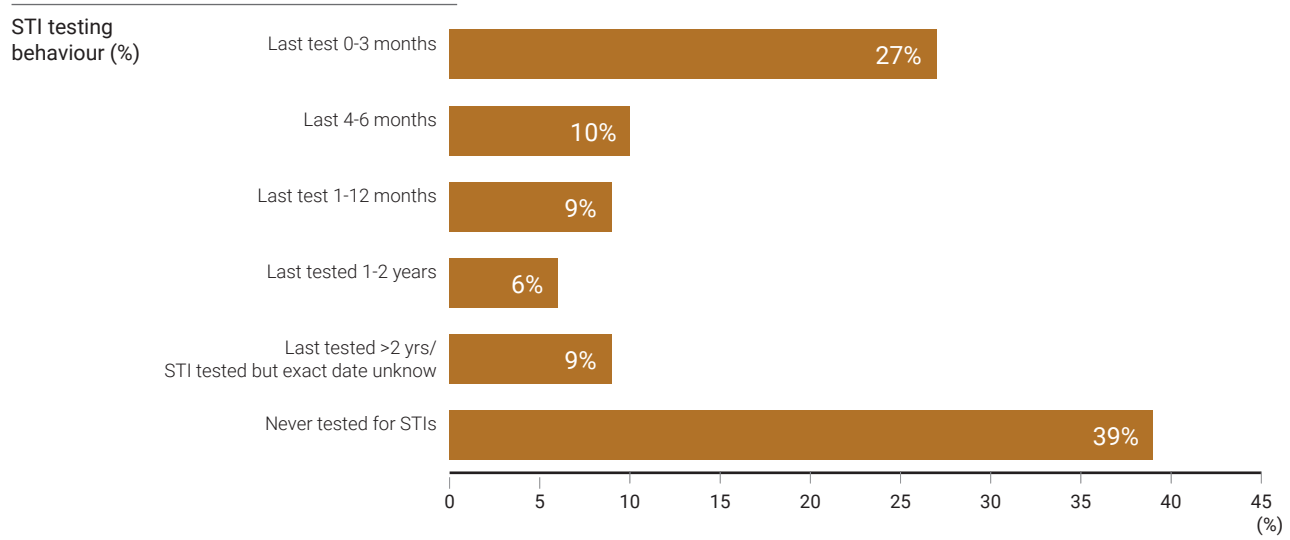


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
GBM	52.5	53.3	57.1	61.5	64.2	68.7	69.7	70.6	66.7	65.0
GBM HIV positive (%)	58.3	60.5	63.0	65.1	68.6	70.4	72.9	73.5	70.6	68.2
GBM HIV negative (%)	51.7	52.4	56.4	61.1	63.7	68.5	69.3	70.1	66.0	64.5

Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

According to the 2021 Asian gay men's community survey, 39% of participants (N=970) had never been tested for STIs and 27% were tested for STIs in the last 3 months period (Figure 69).

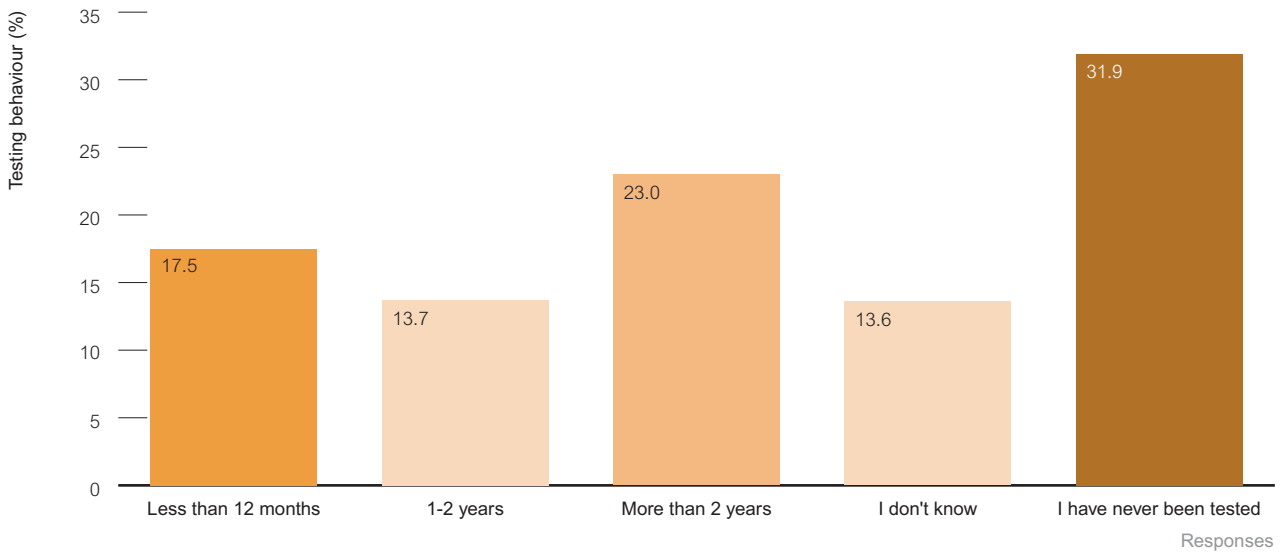
Figure 69 STI testing pattern in Asian gay men's community survey, the 2021 round



Source: Asian gay men's community survey series

According to the MiBSS survey data, participants who had a valid response to the survey question (n= 1433), approximately 46% of the participants (n=654), had either never heard of or had never been tested for HIV, hepatitis B, hepatitis C or STIs. 23% (n=330) of the participants had tested for STI/ BBVs more than 2 years ago and 18% (n=252) had tested recently, in last 12 months (Figure 70).

Figure 70 STI/ BBVs testing behaviour among MiBSS survey participants (n=1433)



Source: MiBSS data

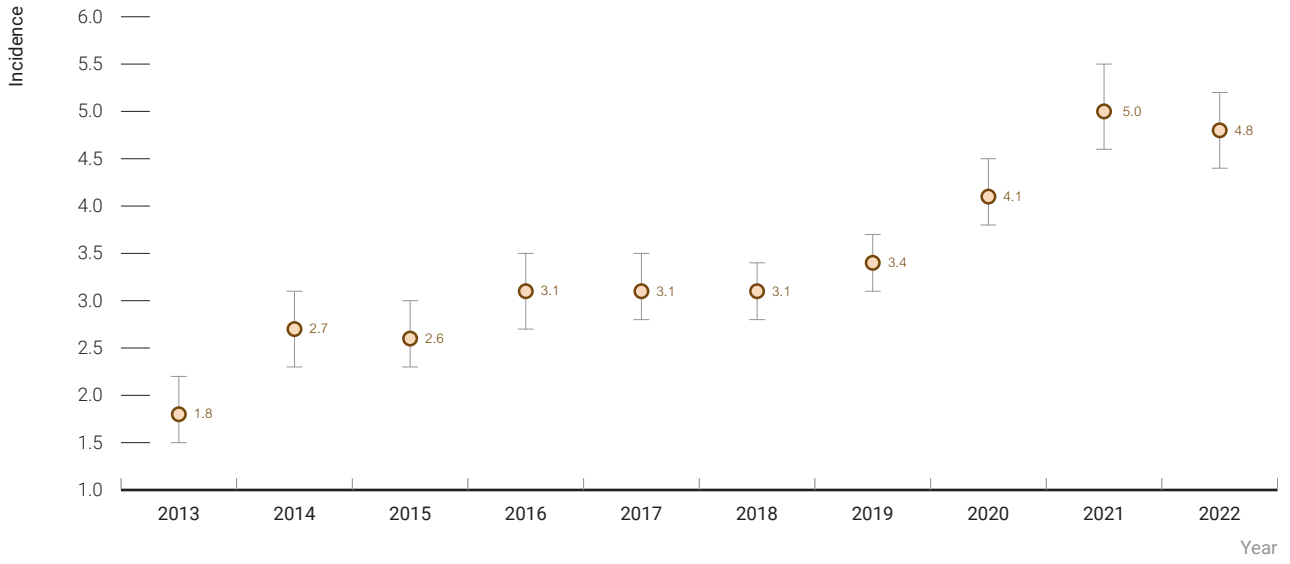
Infectious syphilis incidence

Infectious syphilis incidence is an important indicator of new transmissions, reflecting the impact of current prevention programs, whereas prevalence reflects the burden of disease. Infectious syphilis incidence is available from ACCESS and is calculated by dividing the number of incident infections (negative test followed by a syphilis diagnosis) among people undergoing repeat syphilis testing at sexual health services by the person's time at risk (determined by the time between repeat syphilis tests) [55]. These incidence estimates represent populations attending sexual health clinics and may not be generalizable to broader priority populations.

In 2022, the infectious syphilis incidence rate among people from CALD backgrounds was 4.8 per 100 person-years, increased nearly by 2.6 times from 1.8 per 100 person-years in 2013 (Figure 71).

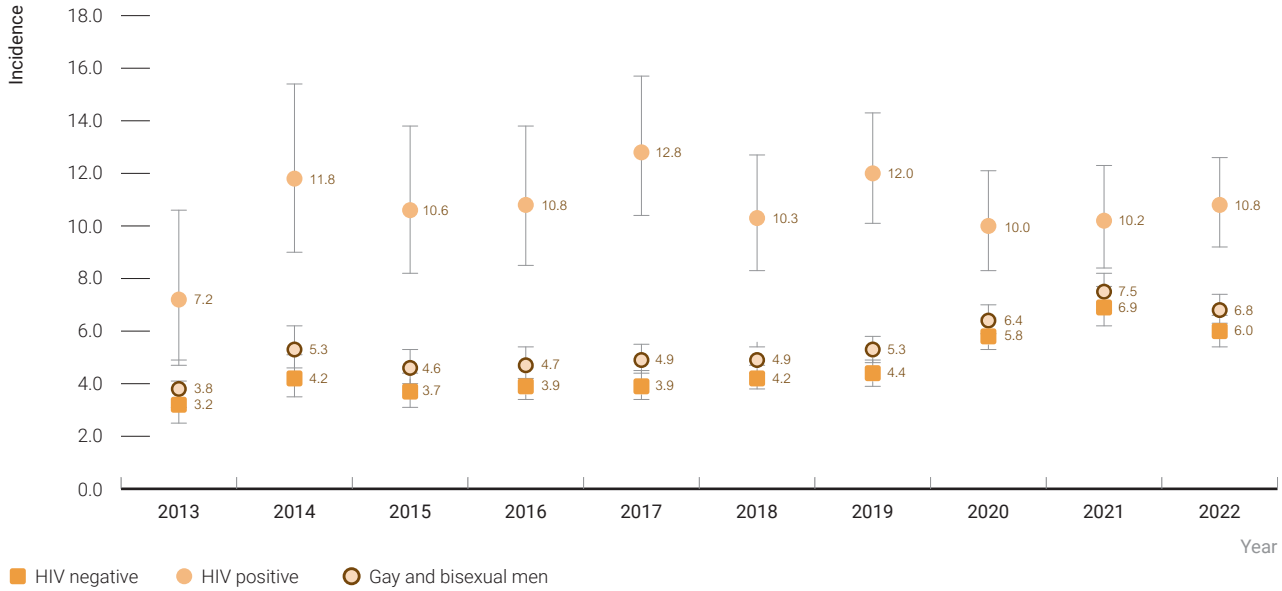
In 2022, the incidence of infectious syphilis among HIV-positive gay and bisexual men attending sexual health clinics was 10.8 new infections per 100 person-years, compared with 6.0 per 100 person-years among HIV-negative gay and bisexual men. Between 2013 and 2022, infectious syphilis incidence increased among HIV-negative gay and bisexual men by 87.5% (from 3.2 per 100 person-year in 2013). By comparison, infectious syphilis incidence increased among HIV-positive gay and bisexual men fluctuated in the same period between 12.8 and 7.2 new infections per 100 person-years, and was 10.8 new infections per 100 person-years in 2022 (Figure 72). Caution should be taken with interpreting between-year trends as confidence intervals overlap, indicating that between-year differences are not statistically significant.

Figure 71 Infectious syphilis incidence among sexual health clinic attendees from CALD backgrounds, 2013–2022



Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Figure 72 Infectious syphilis incidence among sexual health clinic attendees from CALD backgrounds, by select population, 2013–2022



Source: Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS)

Human papillomavirus

HPV vaccination among people from CALD backgrounds

Data for HPV vaccination among people from CALD backgrounds in Australia was not available at the time of reporting.

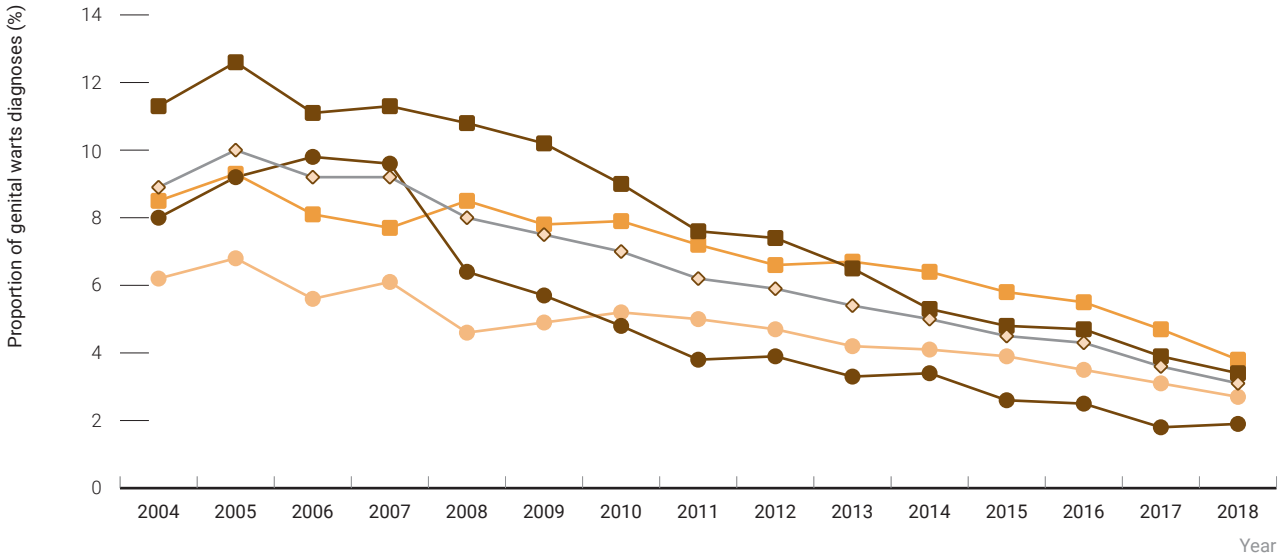
Genital warts in the overseas-born population

To assess Australia's progress toward genital warts elimination, a cross-sectional analysis was performed on data from 34 sexual health clinics across Australia. The analysis included information on 439 957 new patients (Australian-born: 230 230; overseas-born: 209 727) seen at sexual health clinics between 2004 and 2018 [32].

The study calculated the rate ratios using Poisson regression model to compare trends in proportions of new genital warts diagnoses in Australian- and overseas-born patients during the pre-vaccination (2004–2007) and vaccination periods (2008–2018).

Overall, there was a 64% reduction (RR: 0.36, 95% CI: 0.35-0.38) in the proportion of all sexual health clinics patients with a genital warts' diagnosis relative to the pre-vaccination period of 2004–2007. Australian-born patients showed a more pronounced decline at 72% (RR: 0. 28, 95% CI: 0 .27-0.30), as compared to overseas-born patients at 49% reduction (RR: 0 .51, 95% CI:0.48-0.54). When overseas-born patients were further stratified by presence or absence of an HPV vaccination programme in their birth country, by 2018, a 57% decline (RR:0.43, 95% CI: 0.41-0.47) was observed in overseas patients from countries with a quadrivalent or nonvalent HPV vaccination programme as compared to just a 21% reduction (RR: 0.79, 95% CI: 0.71-0.90) in overseas-born patients from countries with no or bivalent HPV vaccination programme [32] (Figure 73).

Figure 73 Proportions of patients with a genital warts' diagnosis in all Australian-born and overseas-born patients seen for the first time at sexual health clinics in Australia, by gender, between 2004–2018



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total (%)	8.9	10.0	9.2	9.2	8.0	7.5	7.0	6.2	5.9	5.4	5.0	4.5	4.3	3.6	3.1
Australian born women (%)	8.0	9.2	9.8	9.6	6.4	5.7	4.8	3.8	3.9	3.3	3.4	2.6	2.5	1.8	1.9
Overseas born women (%)	6.2	6.8	5.6	6.1	4.6	4.9	5.2	5.0	4.7	4.2	4.1	3.9	3.5	3.1	2.7
Australian born men (%)	11.3	12.6	11.1	11.3	10.8	10.2	9.0	7.6	7.4	6.5	5.3	4.8	4.7	3.9	3.4
Overseas born men (%)	8.5	9.3	8.1	7.7	8.5	7.8	7.9	7.2	6.6	6.7	6.4	5.8	5.5	4.7	3.8

Adapted from: Khawar L, McManus H, Vickers T, Chow EPF, Fairley CK, Donovan B, et al. Genital warts trends in Australian and overseas-born people in Australia: A cross-sectional trend analysis to measure progress towards control and elimination.

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Acknowledgment of review committees

The National Bloodborne Virus and Sexually Transmissible Infections (NBBVSTI) Surveillance Subcommittee 2022

- Dr Skye McGregor (Acting Chair), The Kirby Institute, UNSW Sydney, Sydney, NSW
- Dr Steven Nigro, Ms Elenor Kerr, Liz Walker, New South Wales Ministry of Health, Sydney, NSW
- Ms Amy Bright, Ms Louise Blunden, Office of Health Protection, Australian Government Department of Health, Canberra, ACT
- Mr Aaron Cogle, National Association of People with HIV Australia, Sydney, NSW
- Jenny Joenpera, Megan Campbell National Aboriginal Community Controlled Health Organization (NACHHO)
- Associate Professor Benjamin Cowie, WHO Regional Reference Laboratory for Hepatitis B, Victorian Infectious Diseases Reference Laboratory, The Doherty Institute, Melbourne, VIC
- Mr Jason Asselin, Mr Mark Stoov, Burnet Institute, Melbourne, VIC
- Ms Carolien Giele, Communicable Disease Control Directorate, Public Health Division, Department of Health, Western Australia, Perth, WA
- Brendan Quinn, Nasra Higgins, Department of Health and Human Services Victoria, State Government of Victoria, Melbourne, VIC
- Alexandra Marmor, Rachael Crane, Australian Capital Territory Health, Canberra, ACT
- Professor Monica Lahra, Division of Microbiology and WHO Collaborating Centre for STD, The Prince of Wales Hospital, Sydney, NSW
- Dr Damin Si, Emma Sanguineti, Communicable Diseases Branch, Queensland Department of Health, Brisbane, QLD
- Mr Kerryn Lodo , Department of Health and Human Services, Tasmanian Government, Hobart, TAS
- Ms Jennifer MacLachlan, WHO Collaborating Centre for Viral Hepatitis, The Doherty Institute, Melbourne, VIC
- Professor Limin Mao, Centre for Social Research in Health, UNSW Sydney, Sydney, NSW
- Natasha Egoroff, Centre for Disease Control, Northern Territory Department of Health, Darwin, NT
- Dr Jana Sisnowski, Communicable Disease Control Branch, Health Regulation and Protection, Department for Health and Wellbeing, Government of South Australia, Adelaide, SA
- Professor James Ward, Poche Centre for Indigenous Health, University of Queensland, Brisbane, Qld.
- Professor Rebecca Guy, Professor John Kaldor, Mr Jonathan King, Ms Ela Naruka, Mr Nicolas Legrand, The Kirby Institute, UNSW Sydney, Sydney, NSW

The CALD Affiliate group

- Ben Wilcock (Chair) – Health Equity Matters
- Justin Salerno – Health Equity Matters
- Chris Lemoh – Victorian African Health Action Network (VAHAN)
- Corie Gray – CoPAHM/SiREN
- Daniel Coase – Federation of Ethnic Communities' Councils of Australia (FECCA)
- Omar Al-Ani – Federation of Ethnic Communities' Councils of Australia (FECCA)
- Varni Doma – Federation of Ethnic Communities' Councils of Australia (FECCA)
- Enaam Oudih – Relationships Australia South Australia (RASA)
- Gemma Crawford – CoPAHM/SiREN
- Corrie Gray – CoPAHM/SiREN
- Memoona Rafique – Relationships Australia South Australia (RASA)
- Piergiorgio Moro – Culture Ethnicity & Health (CEH)
- Roanna Lobo – CoPAHM/SiREN
- Karina Reeves – CoPAHM/SiREN
- Zhihong Gu – Ethnic Communities Council of Queensland (ECCQ)
- Barbara Luisi, Gai Stackpool and Sonam Paljor – Multicultural HIV and Hepatitis Service in NSW